The New CFO Financial Leadership Manual

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Third Edition

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PART FIVE: PUBLICLY HELD COMPANY

Preface

THE THIRD EDITION OF the *New CFO Financial Leadership Manual* is designed to give the chief financial officer (CFO) a complete overview of his or her place in the corporation, and to provide strategies for how to handle strategy decisions related to a variety of financial, tax, risk, and information technology issues. Some of the questions that Chapters 1 through 4 answer include:

- What should I do during my first days on the job?
- What are my specific responsibilities?
- How do I increase the company's return on assets?
- When should I issue convertible securities?
- What factors should I consider in regard to a step costing decision?
- When can I use net operating loss tax carryforwards?
- How do I decide which products to eliminate?
- How can I use transfer pricing to reduce income taxes?
- What specific information technologies should I install for a certain type of business, such as a low-cost producer or rapid product innovator?

The CFO must also become involved in a variety of accounting topics, though not at the transactional level of detail with which a controller will be occupied. Key areas of concern are the development and maintenance of performance measurement and control systems. The CFO must also interact with the internal and external auditors. Chapters 5 through 7 address these topics, and yield answers to all of the following questions, as well as many more:

- How do I set up a performance measurement system?
- What are the best performance measurements to install for tracking a variety of accounting and financial issues?
- What types of fraud can be committed, and what kinds of controls can reduce their likelihood of occurrence?
- Which key controls should I install?
- How do I identify and eliminate unnecessary controls?
- What is the impact of Sarbanes-Oxley on my company?
- Who serves on the audit committee, and what is its role?
- How do I deal with the external and internal auditors?

One of the CFO's primary tasks is the analysis of a wide range of financial issues, resulting in recommendations for action to the management team. Chapters 8 through 10 address such topics as the cost of capital, capital budgeting, risk analysis, capacity utilization, and breakeven analysis. With these chapters in hand, one can answer the following questions:

- How do I calculate my company's cost of capital?
- How can I modify the cost of capital to increase shareholder value?
- What are the various methods for determining the value of proposed capital projects?
- How do I calculate net present value, the internal rate of return, and the payback period?
- How do I allocate funding to research and development projects?
- How do I determine capacity utilization, and what decisions can I make with this information?
- How can breakeven analysis be used to optimize profitability?

A CFO is sometimes given the primary task of obtaining funding. In this role, the CFO must know how to manage existing cash flows, invest excess funds, and obtain both debt and equity financing. These topics are addressed by Chapters 12 through 14, which provide answers to all of the following questions, and more:

- How do I construct a cash forecasting model and measure its accuracy?
- How do I control cash flows?
- What investment restrictions should I recommend to the board of directors?
- What are good short-term investment options?
- What are the various types of available debt financing?
- How do I conduct a private placement of stock?
- How do I arrange a private investment in public equity?
- What information goes into an offering memorandum?
- How do I place a value on offered stock?

The goal of many larger companies is to go public, which gives their shareholders a convenient method to sell their ownership interests, and which also gives the company a potential source of new capital. The CFO should know the mechanics of conducting an initial public offering, as well as how to subsequently file a variety of reports with the Securities and Exchange Commission (SEC). The CFO also needs to know how to interact with the investment community, and, if the burdens of being publicly held are too great, how to take the company private again. These topics are covered in Chapters 15 through 18, which answer the following questions, and a great deal more:

- What steps do I follow to complete an initial public offering?
- What reports do I file with the SEC, and what information should I include in them?
- What forms are available for registering stock, and which one works best for me?
- When should I use a shelf registration?

- How do I make a Fedwire payment?
- How do I deal with the buy side and sell side of the investment community?
- How do I file with the SEC to take a company private?

Though a CFO can certainly be of great value to a company by properly managing its flow of funds, there are also a number of management areas in which he or she can enhance operations. These are addressed in Chapters 19 through 22, which discuss risk management in general, foreign exchange risk management in particular, outsourcing, and mergers and acquisitions. By perusing them, one can find answers to the following questions:

- How do I engage in risk planning?
- What types of companywide policies and procedures should I install to mitigate risks?
- How do I evaluate insurance carriers?
- What foreign exchange hedging strategies are available?
- What are the advantages and disadvantages of outsourcing various aspects of the accounting and finance functions, and which contractual and transitional issues should I be aware of?
- How do I evaluate acquisition targets?
- How do I place a value on an acquisition target?
- What legal forms of acquisition are available?

There are also several topics that may require some degree of expertise by the CFO from time to time. One is employee compensation, which is addressed in Chapter 23. It covers such topics as deferred compensation, life insurance, stock appreciation rights, stock options, and the bonus sliding scale. An issue that a CFO certainly hopes never to experience is bankruptcy, which is described in Chapter 24. This chapter describes the sequence of events in a typical bankruptcy proceeding, as well as special bankruptcy rules, payment priorities, the parties that typically become involved in the process, and the impact of the Bankruptcy Act of 2005.

The CFO may also require checklists to perform certain aspects of the job. Toward this end, Appendix A contains a checklist that itemizes the usual priority of action items required during the first days of fitting into a new CFO position. Appendix B contains a summary-level list of performance measurements that are useful as a reference for those CFOs who are constructing performance measurement systems. Finally, Appendix C contains an extensive due diligence checklist that is most helpful for reviewing the operations of a potential acquisition candidate.

In total, this book is a comprehensive guidebook for the CFO who needs an overview of strategies, measurement and control systems, financial analysis tools, funding sources, and management improvement tips that will help provide the greatest possible value to the company.

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PART ONE

Overview

CHAPTER ONE

1 CFO's Place in the Corporation

YEARS AGO, CHIEF EXECUTIVE officers (CEOs) were satisfied with finance chiefs who could manage Wall Street analysts, implement financial controls, manage initial public offerings (IPOs), and communicate with the board of directors—who, in short, possessed strong financial skills. However, in today's business environment, the ability to change quickly has become a necessity for growth, if not for survival. CEOs are no longer satisfied with financial acumen from their CFOs. They are demanding more from their finance chiefs, looking instead for people who can fill a multitude of roles: business partner, strategic visionary, communicator, confidant, and creator of value. This chapter addresses the place of the CFO in the corporation, describing how to fit into this new and expanded role. It also describes the roles of three key subordinates—the controller, treasurer, and investor relations officer.

FIRST DAYS IN THE POSITION

You have just been hired into the CFO position and have arrived at the offices of your new company. What do you do? Though it is certainly impressive (to you) to barge in like Napoleon, you might want to consider a different approach that will calm down your new subordinates as well as make them feel that you are someone they can work with. Here are some suggestions for how to handle the critical first few days on the job:

- *Meet with employees.* This is the number-one activity by far. Determine who the key people in the organization are and block out lots of time to meet with them. This certainly includes the entire management team, but it is even better to build relationships far down into the corporate ranks. Get to know the warehouse manager, the purchasing staff, salespeople, and engineers. Always ask who else you should talk to in order to obtain a broad-based view of the company and its problems and strengths. By establishing and maintaining these

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linkages, you will have great sources of information that circumvent the usual communication channels.

- *Do not review paperwork.* Though you might be tempted to lock yourself up in an office and pore through management reports and statistics, meeting people is the top priority. Save this task for after hours and weekends, when there is no one on hand to meet with.
- *Wait before making major decisions.* The first few months on the job are your assigned "honeymoon period," during which the staff will be most accepting of you. Do not shorten the period by making ill-considered decisions. The best approach is to come up with possible solutions, sleep on them, and discuss them with key staff before making any announcements that would be hard to retract.
- *Set priorities.* As a result of your meetings, compile an initial list of work priorities, which should include both efficiency improvements and any needed departmental restructurings. You can communicate these general targets in group meetings, while revealing individual impacts on employees in one-on-one meetings. Do not let individual employees be personally surprised by your announcements at general staff meetings—always reveal individual impacts *prior to* general meetings, so these people will be prepared.
- *Create and implement a personnel review system.* If you intend to let people go, early in your term is the time to do it. However, there is great risk of letting strong performers go if you do not have adequate information about them, so install a personnel review system as soon as possible and use it to determine who stays and who leaves.

The general guidelines noted here have a heavy emphasis on communication, because employees will be understandably nervous when the boss changes and you can do a great deal to assuage those feelings. Also, setting up personal contacts throughout the organization is a great way to firmly insert yourself into the organization in short order, and doing so makes it much less likely that you will be rejected by the organization at large.

SPECIFIC CFO RESPONSIBILITIES

We have discussed how to structure the workday during the CFO's initial hiring period, but what does the CFO work on? What are the primary tasks to pursue? These targets will vary by company, depending on its revenue, its industry, its funding requirements, and the strategic intentions of its management team. Thus, the CFO will find that entirely different priorities will apply to individual companies. Nonetheless, here are some of the most common CFO responsibilities:

- *Pursue shareholder value.* The usual top priority for the CFO is the relentless pursuit of the strategy that has the best chance of increasing the return to shareholders. This also includes a wide range of tactical implementation issues designed to reduce costs.

- *Construct reliable control systems.* A continuing fear of the CFO is that a missing control will result in problems that detrimentally impact the corporation's financial results. A sufficiently large control problem can quite possibly lead to the CFO's termination, so a continuing effort to examine existing systems for control problems is a primary CFO task. This also means that the CFO should be deeply involved in the design of controls for new systems, so they go online with adequate controls already in place. The CFO typically uses the internal audit staff to assist in uncovering control problems.
- *Understand and mitigate risk.* This is a major area of concern to the CFO, who is responsible for having a sufficiently in-depth knowledge of company systems to ferret out any risks occurring in a variety of areas, determining their materiality and likelihood of occurrence, and creating and monitoring risk mitigation strategies to keep them from seriously impacting the company. The focus on risk should include some or all of the following areas:
  - *Loss of key business partners.* If a key supplier or customer goes away, how does this impact the company? The CFO can mitigate this risk by lining up alternate sources of supply, as well as by spreading sales to a wider range of customers.
  - *Loss of brand image.* What if serious quality or image problems impact a company's key branded product? The CFO can mitigate this risk by implementing a strong focus on rapid management reactions to any brand-related problems, creating strategies in advance for how the company will respond to certain issues, and creating a strong emphasis on brand quality.
  - *Product design errors.* What if a design flaw in a product injures a customer, or results in a failed product? The CFO can create rapid-response teams with preconfigured action lists to respond to potential design errors. There should also be product design review teams in place whose review methodologies reduce the chance of a flawed product being released. The CFO should also have a product recall strategy in place, as well as sufficient insurance to cover any remaining risk of loss from this problem.
  - *Commodity price changes.* This can involve price increases from suppliers or price declines caused by sales of commodity items to customers. In either case, the CFO's options include the use of long-term fixed-price contracts, as well as a search for alternative materials (for suppliers) or cost cutting to retain margins in case prices to customers decline.
  - *Pollution.* Not only can a company be bankrupted by pollution-related lawsuits, but its officers can be found personally liable for them. Consequently, the CFO should be heavily involved in the investigation of all potential pollution issues at existing company facilities, while also making pollution testing a major part of all facility acquisition reviews. The CFO should also have a working knowledge of how all pollution-related legislation impacts the company.
  - *Foreign exchange risk.* Investments or customer payables can decline in value due to a drop in the value of foreign currencies. The CFO should know the size of foreign trading or investing activity, be aware of the size of potential losses, and adopt hedging tactics if the risk is sufficiently high to warrant incurring hedging costs.

- *Adverse regulatory changes.* Changes in local, state, or federal laws—ranging from zoning to pollution controls and customs requirements—can hamstring corporate operations and even shut down a company. The CFO should be aware of pending legislation that could cause these changes, engage in lobbying efforts to keep them from occurring, and prepare the company for those changes most likely to occur.
- *Contract failures.* Contracts may have clauses that can be deleterious to a company, such as the obligation to order more parts than it needs, to make long-term payments at excessive rates, to be barred from competing in a certain industry, and so on. The CFO should verify the contents of all existing contracts, as well as examine all new ones, to ensure that the company is aware of these clauses and knows how to mitigate them.
- *System failures.* A company's infrastructure can be severely impacted by a variety of natural or man-made disasters, such as flooding, lightning, earthquakes, and wars. The CFO must be aware of these possibilities and have disaster recovery plans in place that are regularly practiced, so the organization has a means of recovery.
- *Succession failures.* Without an orderly progression of trained and experienced personnel in all key positions, a company can be impacted by the loss of key personnel. The CFO should have a succession planning system in place that identifies potential replacement personnel and grooms them for eventual promotion.
- *Employee practices.* Sometimes employees engage in sexual harassment, stealing assets, or other similar activities. The CFO should coordinate employee training and set up control systems that are designed to reduce the risk of their engaging in unacceptable activities that could lead to lawsuits against the company or the direct incurrence of losses.
- *Investment losses.* Placing funds in excessively high-risk investment vehicles can result in major investment losses. The CFO should devise an investment policy that limits investment options to those vehicles that provide an appropriate mix of liquidity, moderate return, and a low risk of loss (see Chapter 12, "Investing Excess Funds").
- *Interest rate increases.* If a company carries a large amount of debt whose interest rates vary with current market rates, then there is a risk that the company will be adversely impacted by sudden surges in interest rates. This risk can be reduced through a conversion to fixed interest-rate debt, as well as by refinancing to lower-rate debt whenever shifts in interest rates allow this to be done.

- *Link performance measures to strategy.* The CFO will likely inherit a companywide measurement system that is based on historical needs, rather than the requirements of its strategic direction. He or she should carefully prune out those measurements that are resulting in behavior not aligned with the strategic direction, add new ones that encourage working on strategic initiatives, and also link personal review systems to the new measurement system. This is a continuing effort, since strategy shifts will continually call for revisions to the measurement system.

- *Encourage efficiency improvements everywhere.* The CFO works with all department managers to find new ways to improve their operations. This can be done by benchmarking corporate operations against those of other companies, conducting financial analyses of internal operations, and using trade information about best practices. This task involves great communication skills to convince fellow managers to implement improvements, as well as the ability to shift funding into those areas needing it in order to enhance their efficiencies.
- *Clean up the accounting and finance functions.* Although most of the items in this list involve changes throughout the organization, the CFO must create an ongoing system of improvements within the accounting and finance functions—otherwise the managers of other departments will be less likely to listen to a CFO who cannot practice what he preaches. To do this, the CFO must focus on the following key goals:
  - *Staff improvements.* All improvement begins with the staff. The CFO can enhance the knowledge base of this group by tightly focusing training, cross-training between positions, and encouraging a high level of communication within the group.
  - *Process improvements.* Concentrate on improving both the accuracy of information that is released by the department as well as the speed with which it is released. This can be accomplished to some extent through the use of increased data-processing automation, as well as through the installation of more streamlined access to data by key users. There should also be a focus on designing controls that interfere with core corporate processes to the minimum extent possible while still providing an adequate level of control. Also, information should be provided through simple data-mining tools that allow users to directly manipulate information for their own uses.
  - *Organizational improvements.* Realign the staff into project-based teams that focus on a variety of process improvements. These teams are the primary implementers of process changes and should be tasked with the CFO's key improvement goals within the department.
- *Install shared services.* The CFO has considerable control over many administrative tasks, and so can encourage cost reductions in those areas through the use of shared services (where the same task is completed from a central location for multiple company locations). This can result in major cost savings, and is typically completed in coordination with the chief operating officer (COO), who might be responsible for some of the areas being consolidated.
- *Examine outsourcing possibilities.* A company should focus the attention of its management team on its core activity. The CFO can assist this effort by determining which noncore areas are absorbing large amounts of management time and/or funding, and seeing if they can be prudently outsourced. Though certainly not all noncore areas can be handled in this fashion, the CFO can conduct periodic reviews to see how the attractiveness of this option changes over time.
- *Allocate resources.* In its simplest form, the CFO is expected to review the net present value of proposed capital expenditures and pass judgment on whether funding should be allowed. However, the CFO can take a much more proactive stance. For

example, he can set aside a block of cash for more radical projects that would not normally make it past the rigorous capital expenditure review process, thereby adding high-risk, high-return projects to the company's portfolio of capital projects. Under this approach, the CFO becomes an internal venture capitalist and mentor to the teams undertaking these high-risk projects.

- *Encourage innovation.* The CFO can modify internal measurement, reporting, and budgetary systems to ensure that some original ideas are allowed to percolate through the company, potentially resulting in the implementation of high-return ideas. It is particularly important to take this approach in mature businesses that are most highly concerned with cost reductions, since an excessive focus on this area can drive out innovation.

Most of the responsibilities noted here rarely fall entirely within the capabilities of the CFO. Instead, he or she must coordinate activities with other department managers, including such specialized areas as the legal and human resources departments, to ensure that these target areas are addressed. This calls for a strong ability to work with other members of the company who are probably not directly supervised by the CFO.

OVERVIEW OF THE CHANGE MANAGEMENT PROCESS

Becoming the business partner that CEOs demand means facilitating change that not only affects finance but also directly impacts the operating units. To accomplish this end, CFOs must become skilled in the following key management practices:

- *Develop and communicate a compelling finance agenda.* Based on both their own perceptions of a company's situation and the recommendations of others, CFOs should create a list of bullet points for short-term and long-term accomplishments and memorize them so that they can repeat them to anyone at any time during the workday. Compressing the finance agenda in this manner is an excellent tool for communicating the CFO's work to others. Review the list regularly, and spread any changes to the list around the organization on a regular basis.
- *Build a commitment to change within the finance function.* Besides talking about the agenda to everyone in the company, CFOs must reinforce the message with their behavior, which means demonstrating a full commitment of the time and money required to make the agenda a reality. This also means that CFOs must be seen personally working on the agenda for a significant proportion of their time. Building staff commitment also means that CFOs must listen to staff views and let this shape their opinion of what should be included in the agenda.
- *Change executive management practices.* The director of strategic planning at a Fortune 500 company once pointed out that she spent 25 percent of her time determining the corporate direction, and 75 percent of her time convincing everyone in the organization that this was the right direction to follow. Though this sort of time distribution is extreme, CFOs must understand that many of the changes they advocate will impact other functional areas outside the accounting

and finance functions, and so will require a hefty allocation of time to communicate the change of vision. This requires regular meetings with managers throughout the organization, as well as employing strong listening skills to learn of any issues that might affect the implementation of the agenda. These meetings must be effective, requiring meeting agendas that are closely followed, have resultant minutes that identify who is responsible for the implementation of decisions reached, and a follow-up process to ensure that implementations are completed promptly.

- *Enlist the support of the CEO.* Work with the CEO to develop his or her role in creating and implementing the agenda. This requires frequent meetings to go over the agenda. In order to obtain the CEO's full support, it is most useful to ask the CEO to assist in jointly solving problems arising from the agenda implementation effort.
- *Mobilize the organization.* With the CEO firmly supporting the CFO's agenda, the rest of the organization must be mobilized to follow it as well. This calls for the creation of measurement and reward systems that are specifically designed to channel activities into the correct areas, plus visible and prolonged involvement by the senior management team and ongoing ''communication events,'' such as general or team meetings, that describe the company's progress toward the completion of various items on the CFO's agenda.
- *Institutionalize continuous improvement.* Once the agenda has been achieved, CFOs should continue to review and question the functions of all systems to see if better ways can be found to operate the company. If so, and changes are made, then the CFO must alter the corporate measurement and reward system to ensure that the new initiatives are properly supported by the staff on an ongoing basis.

DIFFERENCES BETWEEN THE CONTROLLER AND CFO POSITIONS

Having already discussed what the CFO position *should* do, it is also worthwhile to point out those areas in which the CFO should *not* become involved. This issue is of particular concern to controllers who have been promoted to the CFO position, but who are having difficulty relinquishing their old chores in order to take up new ones. The result is that, with twice the workload, the newly promoted CFO does both the CFO and controller jobs poorly. Exhibit 1.1 describes the tasks that are most commonly assigned to the CFO and controller.

The exhibit indicates that there are a few areas in which the two roles may become jointly involved in the accounting area. However, their levels of involvement are entirely different. For example, when external auditors review the company's accounting records, the CFO is most likely to maintain relations with the audit partner, and deal with any reportable audit issues uncovered. The controller, however, is more likely to be directly involved with the auditors in presenting the accounting books, explaining the reasons for specific accounting transactions, and providing labor for more menial tasks that the auditors would otherwise have to perform themselves.

The same issue arises in other accounting areas, such as the issuance of management reports, financial statements, or Securities and Exchange Commission (SEC)

EXHIBIT 1.1 Position Responsibilities

Area of Responsibility	CFO	Controller
Accounting		
Assist with the annual audit	X	X
Pay accounts payable on time		X
Collect accounts receivable		X
Take discounts on accounts payable		X
Issue billings promptly		X
Calculate job costs		X
Complete bank reconciliations		X
Issue management reports	X	X
Issue financial statements	X	X
File information with the SEC	X	X
Maintain policies and procedures		X
Maintain the chart of accounts		X
Manage outsourced functions		X
Manage the accounting staff		X
Manage the budgeting process	X	X
Review capital requests	X	
Process payroll		X
Implement operational best practices	X	X
Provide financial analysis	X	X
Develop performance measurements	X	
Maintain performance measurements		X
Review control weaknesses	X	X
Finance		
Formulate financial strategy	X	
Formulate tax strategy	X	
Formulate risk management strategy	X	
Negotiate acquisitions	X	
Maintain banking relations	X	
Arrange for debt financing	X	
Conduct equity placements	X	
Invest funds	X	
Invest pension funds	X	
Issue credit to customers		X
Maintain insurance coverage	X	
Monitor cash balances		X
Maintain investor relations	X	

reports. The controller creates the reports, but the CFO must review them before their release, since the CFO is the one who must explain their contents to readers. In the case of SEC reports, the CFO must personally certify them. The CFO also needs the information in order to see how the presented information fits into any other analyses being created; for example, if the CFO is building a case for an increased emphasis on product quality, a management report on material scrap trends would fit directly into this analysis.

The CFO and controller also have different roles in the budgeting process. The controller usually manages the nuts and bolts of obtaining information from other departments and incorporating it into a master budget. Meanwhile, the CFO is examining the data presented by the various departments to see how they have changed from the past year, how revenues and expenses reflect any changes in the company's strategic direction, and the reasons for capital expenditure requests.

A primary part of the CFO's job is to conduct financial analyses on various topics anywhere in the company, as well as to drive operational improvements, at least partially based on the results of the financial analyses. The CFO decides on which analyses to create and which improvements to push, while also presenting this information and proselytizing in favor of operational improvements with other department managers. Conversely, the controller is more likely to create the analyses mandated by the CFO and to implement improvements within the accounting function. Thus, there is a dual role for the CFO and controller in these areas, but on different levels.

Control systems also attract the attention of both positions. The CFO is extremely interested in controls, since any control problems reflect poorly on his or her performance. The controller is also interested, partially to spot problems for the CFO's attention, but mainly to ensure that the existing set of controls are functioning as planned. The CFO can be of particular assistance in setting up or changing controls impacting other departments, since the CFO is responsible for building relations between the accounting function and other areas of the company.

The finance area calls for minimal attention by the controller, who is only responsible for day-to-day activities in the areas of issuing credit and monitoring cash balances, which are simple activities that can easily be handled at the clerical level. In all other respects, financial activities involve a specialized knowledge of banking relationships, overall corporate strategy, and funds investment and procurement that falls directly within the CFO's area of expertise.

The main point to be gained from this comparison of the controller and CFO positions is that the controller is responsible primarily for the daily administration of accounting activities, whereas the CFO must cordon himself off from these activities and concentrate instead on the general design of control systems, strategic direction, and funding issues. Anyone who attempts to perform both jobs, except in a small company where a lack of funding usually calls for the merger of both positions, will be overwhelmed by the multitude of tasks to be completed. Realistically, someone who combines the positions will tend to concentrate on the daily activities of the controller and not attend to CFO tasks because of the perception that daily transactional activities *must* be completed, whereas strategic issues can always be addressed when there is spare time. Though this might work for a short interval, improper attention to the CFO part of

the job will eventually lead to stagnation, inefficiency, and poor development of potential funding sources.

RELATIONSHIP OF THE CONTROLLER TO THE CFO

In a larger company, there is a clear division of tasks between the controller and CFO. However, there is no clear delineation of these roles in a smaller company, because there is usually no CFO. As a company grows, it acquires a CFO, who must then wrestle away some of the controller's tasks that traditionally belong under the direct responsibility of the CFO. This transition can cause some conflict between the controller and CFO. In addition, the historical promotion path for the controller has traditionally been through the CFO position; when that position is already occupied, and is likely to stay that way, there can be some difficulty with the controller. This section discusses both of these issues.

In a small company, the controller usually handles all financial functions, such as setting up and maintaining lines of credit, managing cash, determining credit limits for customers, dealing with investors, handling pension plan investments, and maintaining insurance policies. These are the traditional tasks of the CFO, and when a company grows to the point of needing one, the CFO will want to take them over from the controller. This can turn into a power struggle, though a short-lived one, because the controller always reports to the CFO and will not last long if there is no cooperation. Nonetheless, this is a difficult situation, for the controller has essentially taken a step down in the organizational structure upon the arrival of the CFO. For example, the CFO replaces the controller on the executive committee. If the controller is ambitious, this will probably lead to that person's departure in the near term. If the controller is good, this is a severe loss, for someone with a detailed knowledge of a company's processes and operating structure is extremely difficult to replace.

The controller should take a job elsewhere if he or she perceives that the person newly filling the CFO position is a roadblock to further advancement. However, this does not have to be a dead-end position. The controller should talk to the CFO about career prospects within the company and suggest that other responsibilities could replace those being switched to the CFO. For example, a small minority of controllers supervise the materials management department; this will become increasingly common as controllers realize that much of the paperwork they depend on originates in that area and that they can acquire better control over their processes by gaining experience in this area. There might also be possibilities in administration, human resources, and computer services, which are sometimes run by controllers. The fact that there is a new CFO does not mean that a controller should immediately quit; other opportunities involving related tasks could shift the controller's career in other directions.

The CFO position is one with an extreme emphasis on money management, involving such tasks as determining the proper investment vehicles for excess cash, dealing with lenders regarding various kinds of debt, making presentations to financial analysts, and talking to investors. None of these tasks is one that the controller is trained to perform. Instead, the traditional controller training involves handling transactions,

creating financial statements, and examining processes. The requirements for the CFO position and the training for the CFO position are so different that it seems strange for the controller to be expected to advance to the CFO position, and yet that is a common expectation among accountants, which regularly causes problems between the controller and CFO when a CFO is initially hired.

OTHER DIRECT REPORTS: THE TREASURER

The treasurer is accountable for corporate liquidity, investments, and risk management related to the company's financial activities. The treasurer usually reports to the CFO and is positioned in the corporate hierarchy alongside the controller. The treasurer has 12 principal accountabilities:

1. Forecast cash-flow positions, related borrowing needs, and available funds for investment.
2. Ensure that sufficient funds are available to meet ongoing operational and capital investment requirements.
3. Use hedging to mitigate financial risks related to the interest rates on the company's borrowings, as well as on its foreign exchange positions.
4. Maintain banking relationships.
5. Maintain credit rating agency relationships.
6. Arrange for equity and debt financing.
7. Invest funds.
8. Invest pension funds.
9. Monitor the activities of third parties handling outsourced treasury functions on behalf of the company.
10. Advise management on the liquidity aspects of its short- and long-range planning.
11. Oversee the extension of credit to customers.
12. Maintain a system of policies and procedures that imposes an adequate level of control over treasury activities.

OTHER DIRECT REPORTS: THE INVESTOR RELATIONS OFFICER

The investor relations officer (IRO) is accountable for creating and presenting a consistently applied investment message to the investment community on behalf of the company. The IRO also monitors and presents to management the opinions of the investment community regarding the company's performance. The IRO may report directly to the chief executive officer, but also commonly reports to the CFO, since the IRO deals with primarily financial information. The IRO has 16 principal accountabilities:

1. Develop and maintain a company investor relations plan.
2. Perform a comprehensive competitive analysis, including financial metrics and differentiation.

3. Develop and monitor performance metrics for the investor relations function.
4. Establish the optimum type and mix of shareholders and create that mix through a variety of targeting initiatives.
5. Monitor operational changes through ongoing contacts with company management and develop investor relations messages based on these changes.
6. Provide Regulation Fair Disclosure training to all company spokespersons.
7. Create presentations, press releases, and other communication materials for earnings releases, industry events, and presentations to analysts, brokers, and investors.
8. Oversee the production of all annual reports, SEC filings, and proxy statements.
9. Manage the investor relations portion of the company Web site.
10. Monitor analyst reports and summarize them for senior management.
11. Serve as the key point of contact for the investment community.
12. Establish and maintain relationships with stock exchange representatives.
13. Organize conferences, road shows, earnings conference calls, and investor meetings.
14. Provide feedback to management regarding the investment community's perception of the company.
15. Represent the views of the investor community to the management team in the development of corporate strategy.
16. Provide feedback to the management team regarding the impact of stock repurchase programs or dividend changes on the investment community.

SUMMARY

It should have become apparent in this chapter that the key attributes of the CFO do not lie in the area of accounting competency. If a CEO wanted skills in that area, the CEO would hire a great controller and never fill the CFO position. Instead, the key CFO attributes are that person's ability to find innovative ways to solve problems, and then to use change management skills to implement them. By focusing on these key areas, the CFO brings the greatest positive impact to overall corporate value.

In addition, the CFO must concentrate a great deal of his time on the formulation and implementation of appropriate strategies in the areas of accounting, taxation, and (if responsible for this area) information technology. These issues are addressed in Chapter 2, ''Financial Strategy''; Chapter 3, ''Tax Strategy''; and Chapter 4, ''Information Technology Strategy.''

CHAPTER TWO

2 Financial Strategy

THIS BOOK IS BUILT around the concepts of financial management, analysis, and accounting, as well as the procurement of funding. However, the true test of the CFO is in the quality of decisions made on topics that affect a company's finances. For the other topics, the CFO can hire quality controllers and financial analysts who can take care of matters quite nicely from an operational perspective. But in the area of making financial strategy decisions, the buck stops at the CFO's desk. In this chapter, we will review a number of common decision areas that a CFO is likely to face. They are generally grouped in the order in which the topics can be found on the balance sheet and then the income statement. The chapter finishes with the discussion of throughput analysis, and how it can change your way of thinking about financial decisions.

CASH

The CFO should pay particular attention to the amount of risk associated with a firm's exposure to its foreign currency transactions, as well as its overall relations with those banks handling its financial transactions. These issues are discussed below.

Reducing Foreign Currency Exposure

A CFO whose company engages in international trade must be concerned about potential changes in the value of its trading partners' currencies. For example, if a company sells products to a French company and receives payment after the euro loses value, then the company absorbs the reduction in value of the euro, creating a loss.

If foreign currency transaction volumes are small, the potential risk of loss will be correspondingly small, so is not worth much review by the CFO. However, the CFO

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by Steven M. Bragg

should certainly review the issue if large foreign contracts are contemplated. If a company engages in substantial foreign trade, then reducing foreign currency exposure is so large an issue that the CFO should consider creating a hedging department that does nothing but track and mitigate this issue. This topic is dealt within considerable detail in Chapter 20, ''Risk Management: Foreign Exchange.''

Deciding to Change a Banking Relationship

A good banking relationship is extremely important to the CFO. It should involve excellent responsiveness by all departments of the bank, minimal transaction-processing errors, moderate fees, reasonable levels of asset collateralization on loans, online access to transactional data, and the ability to process more advanced transactions, such as letters of credit. Larger companies with massive transaction volumes and lending needs are the most likely to find all of these needs fulfilled. However, smaller entities will not represent enough business to a bank to warrant this level of service, and so will most likely suffer in the areas of customer service and advantageous loan terms.

Of particular concern to the CFO of an expanding business is growing beyond the capabilities of a small local bank that it may have begun doing business with when it first started. Smaller banks may offer reasonable attentiveness, but are unlikely to offer online transaction processing, letters of credit, or any form of international transaction support.

Given these issues, there are several key factors in deciding when to change a banking relationship. The first is a simple lack of responsiveness by the bank, which seems most common with large banks that service thousands of business customers—one gets lost in the shuffle. This is primarily a problem when special transactions are needed that require a bank officer, such as letters of credit or wire transfers. If no one picks up the phone or returns a call within a reasonable time frame, and these actions result in significant business problems, then the bank must go. A second reason is outgrowing the capabilities of the bank, as already noted. Be certain that additional capabilities are truly needed before switching banks for this reason, given the difficulty of severing a banking relationship (discussed later in this chapter). The third and least justifiable reason for changing banks is the cost of the relationship. When compared to the cost of other business expenses, banking fees are comparatively inexpensive, and so should only be a reason to sever a banking relationship when combined with some other factor, such as poor service.

A CFO might have multiple reasons for switching to a different bank, but must bear in mind the extreme difficulty of stopping all banking transactions with one bank and starting them up with another. The following list highlights the number of changes required to switch banks:

- Adopt a corporate resolution to switch banks.
- Open up accounts at the new bank.
- Order check stock for the new accounts.
- Contact suppliers who take direct deductions from the old accounts and have them switch to the new accounts.

- Create bank reconciliations for the old accounts until all checks have cleared.
- Wire funds from the old accounts to the new accounts.
- Close the old accounts.
- Shred all remaining old check stock.
- Have auditors review the old accounts as well as the new ones at year-end.
- Arrange for new loan agreements with the new bank.
- Draw down new loans and pay off old loans.
- Cancel old loans.

Clearly, the number of steps required to shift a banking relationship should give the CFO pause before proceeding. It is much easier to leave well enough alone unless there are significant factors favoring a change.

INVESTMENTS

The CFO is certainly interested in maximizing the return on assets, though only to the extent that risk is not substantially increased. It is also useful to monitor the rates paid on outstanding bonds, and refund them if there are lower-cost alternatives available. This section addresses both issues.

Maximizing Return on Assets

A CFO can gain an excellent understanding of a company's efficiency through close attention to the return on assets (ROA) measurement. Since this measure is also tracked by analysts and investors, it is wise to understand its components, how they can be manipulated to enhance the ROA, and how these changes should be made in light of overall company strategy.

As shown in Exhibit 2.1, the ROA measure is composed of margins (on the left side of the exhibit) and asset turnover (on the right side of the exhibit). Multiplying the earnings percentage by asset turnover yields the return on assets. Many companies have a long tradition of squeezing every possible cost out of their operations, which certainly addresses the first half of the ROA equation. However, asset turnover is either ignored or given a much lower priority. The CFO should investigate this latter portion of the calculation to see what asset reductions, both in the areas of working capital and fixed assets, can be achieved in order to achieve a higher ROA.

Working capital reduction techniques are addressed in the ''Working Capital'' section later in this chapter. Fixed asset reductions can be achieved through a well-managed capital budgeting process (see Chapter 9, ''Capital Budgeting''), as well as through constant investigation and disposal of potentially unused assets and the investigation of outsourcing in order to shift expensive facility and equipment costs to suppliers.

When investigating ROA improvement opportunities, the CFO should be aware that an excessive degree of cost and asset reduction can *hurt* a company by such means as reducing the quality of its products, giving it minimal excess production capacity to use

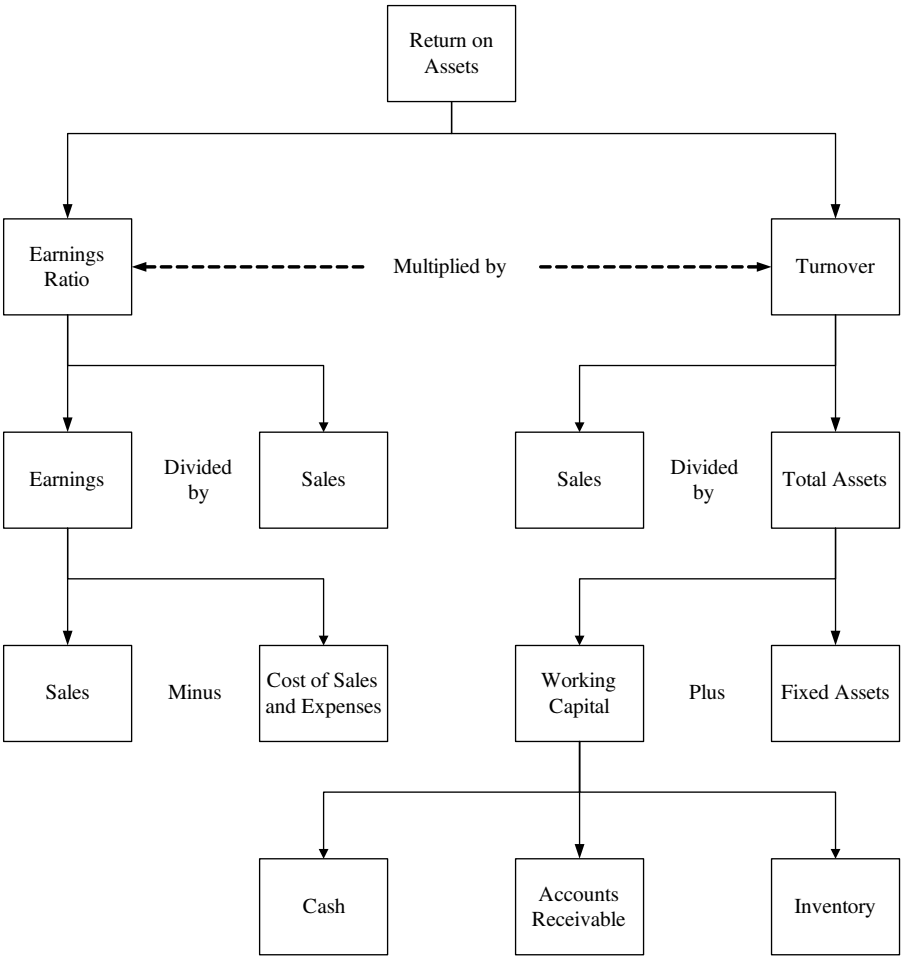

EXHIBIT 2.1 Components of the Return on Assets

during high-volume periods, and reducing the size of its research and development activities. Thus, improving ROA should not be taken to extremes, though it certainly requires continuing attention.

Bond Refunding Decision

A company can buy bonds back from investors prior to their due dates, but only if there is a call provision on the bond or if it was originally issued as a serial bond. The call provision gives the company the right to buy the bond back on a specific series of dates over the life of the bond, while the serial bond approach sets different maturity dates on sets of bonds within a total bond offering. Thus, the call provision gives a company the option to refund bonds, whereas the serialization feature requires the company to refund them. In either instance, the presence of these refunding features on a bond will decrease its value, resulting in a higher effective interest rate that the company must pay.

In this instance, the CFO must make a decision *in advance* of a bond offering to add refunding features to the bonds. If there is no reasonable prospect of having funds available to pay off the bonds early, and if the interest rate being paid appears reasonable, then there is no particular need for the refunding features. However, if this is not the case, the CFO would be well advised to add a call provision, since this option gives the firm the ability to refund the bonds without necessarily being required to do so. A serialization feature is less useful, since it incorporates a direct requirement to make cash payments at regular intervals to refund specific bonds, whereas the CFO might have better uses for these funds.

If the CFO is concerned that the presence of either type of call feature will result in a more expensive interest rate, then she can add other features to the bonds, such as convertibility or warrants, that will increase the value of the bonds to investors, thereby keeping the effective interest rate from being increased.

WORKING CAPITAL

The CFO should pay constant attention to the investment in working capital, in order to keep it from ballooning and endangering a company's cash position. It is also an excellent source of cash, if handled properly. This section covers the details of working capital management.

Working Capital Reduction Methodology

The typical CFO is constantly in search of a ready source of inexpensive funding for the company. One of the best sources is working capital, which is accounts receivable plus inventory, minus accounts payable. These are the ''float'' funds required to keep the business operating from day to day. By reducing the amount of accounts receivable and inventory or extending the payment terms on accounts payable, the CFO has access to a ready source of cash. Some of the actions one can take to access these funds are as follows:

Accounts Receivable

- *Automate collection record keeping.* Tracking of collection calls, including who was reached, when the call occurred, and what was promised, is a time-consuming chore that is highly subject to error. By obtaining a computerized database that is linked to a company's accounts receivable records, the collections staff can greatly increase its collection efficiency.
- *Bill recurring invoices early.* If a customer subscribes to a long-term service or maintenance contract, then it can be billed slightly earlier in the hopes of receiving payment sooner.
- *Change the terms of commission payments.* The sales staff should be paid commissions based on cash received from customers rather than on sales made to them. By doing so, the sales staff has a vested interest in finding creditworthy customers and in collecting from them.

- *Encourage ACH payments.* If a customer has a long-term relationship with the company, request that it set up Automated Clearing House (ACH) payments so that payments are wired directly into the company's bank account, thereby avoiding any mail float.
- *Encourage credit card payments.* If billings are relatively small, note on the invoices that the company accepts a variety of credit card payments so that customers will be encouraged to use this approach to accelerate cash flow.
- *Factor accounts receivable.* Arrange with a lender to pay the company at the time of billing, using accounts receivable as collateral.
- *Grant early payment discounts.* Offer discounts to customers if they pay within a few days of receiving the invoice.
- *Install lockboxes.* Set up bank lockboxes near customer sites, and have them mail their payments to the lockboxes. By doing so, one can greatly reduce the mail float associated with the payments.
- *Stratify collections.* Stratify accounts receivable by size and assign the bulk of the collection staff's time to the largest items so that the full force of the collections department is brought to bear on those items yielding the largest amount of cash.
- *Tighten credit.* Closely review the payment histories of existing customers and run more intensive checks on new customers, thereby cutting back on the amount of bad debt.

Inventory

- *Consolidate storage locations.* If there are many warehouses, then the company is probably storing the same inventory items in multiple locations. By consolidating storage locations, some of this duplication can be eliminated.
- *Install a materials planning system.* A material requirements planning system (MRP) will allow a company to determine exactly what material it needs, and by what date. These systems typically result in massive drops in inventory levels and the elimination of overpurchases.
- *Install just-in-time (JIT) manufacturing techniques.* Many manufacturing practices are included in the general JIT concept, such as rapid setup times, cell-based manufacturing, and minimal production runs. These techniques require minimal work-in-process (WIP) inventory, and also generate far less scrap.
- *Maintain accurate bills of material.* It is impossible to create a working MRP or JIT system without knowing exactly what parts are required to manufacture a product. Consequently, a bill of material accuracy rate of at least 98 percent is the foundation for other initiatives that will greatly reduce inventory levels.
- *Return parts to suppliers.* If parts are not needed, return them to suppliers for cash or credit.
- *Stock fewer finished goods.* The distribution of product sales follows a bell curve, where the bulk of all sales are concentrated into only a few inventory items. The CFO should review the inventory items that rarely sell to see if they should be stocked at all.
- *Store subassemblies rather than finished goods.* Inventory subassemblies can potentially be configured into a multitude of finished goods, whereas a finished good must

be sold "as is." Consequently, a strategy to keep inventory at the subassembly level until the last possible moment will result in fewer stock-keeping units (SKUs), and therefore a smaller inventory investment.

Accounts Payable

- *Avoid prepayments.* If a supplier insists that the company make prepayments on various goods or services, try to reduce the amount of the prepayments or spread out the payment intervals, thereby reducing the up-front cash commitment.
- *Extend payments a reasonable amount.* Suppliers typically do not start collection efforts on an overdue invoice until a number of days have passed beyond the invoice due date. A company can take advantage of this grace period by judiciously extending payment dates for a few additional days. However, this strategy can result in lower reported credit levels by credit reporting agencies, and certainly will not endear the company to its suppliers.
- *Negotiate longer payment terms.* It might be possible to negotiate longer payment terms with suppliers, though this might involve offsetting terms, such as larger order commitments or higher product prices.
- *Pay with a charge card to extend payments.* Many suppliers allow their invoices to be paid with credit cards. By doing so on the payment due date and then waiting to pay the credit card bill until the cycle closing date for the credit card, payment terms can be substantially extended.

Though a CFO could simply implement the entire checklist to break free a large amount of cash, there are a number of issues to be considered before doing so. For example, tightening credit might run counter to an overall corporate strategy to accept higher bad debt losses in exchange for greater sales to high-risk customers. Similarly, unilaterally extending payment terms to a key supplier can damage the operating relationship between the business partners, perhaps resulting in higher prices charged by the supplier or a lower shipment priority. As another example, the decision to stock fewer finished goods can damage customer service, especially when a company has built its reputation on having a wide range of inventory items available for customers at all times. Further, a company in a low-margin business may be unable to factor its receivables or accept credit card payments, because the resulting credit fees will eat into their margins too much. Thus, the CFO must implement the preceding suggestions only after due consideration of their impact on overall company strategy.

The inventory reduction decision is covered in more detail in the next section.

INVENTORY: INVENTORY REDUCTION DECISION

A truly cost-conscious CFO who wants to also increase cash flow will militantly demand continual reductions in inventory by any means possible, since this can potentially free up a considerable quantity of cash, thereby eliminating the expenses associated with inventory carrying costs. However, there are other issues to consider before running rampant with continual inventory reductions.

First, consider the classes of inventory involved, and only target those inventory types that will not have an adverse affect on other company operations. For example, a reduction in finished goods inventory can severely impact sales, since customers may only purchase from stock, not wanting to wait for something to be ordered or produced. This is particularly important for service-intensive retail businesses, such as those that claim to have *all* parts on hand, *all* the time. Costs may also go up in this situation if lower stocks are kept on hand, because the company may be forced to pay overnight shipping fees to obtain needed stock for customer orders. However, finished goods inventory levels can still be reduced by tracking usage trends by product and reducing safety stock levels for those items that show declining sales trends.

Work-in-process inventory can be an enormous working capital burden for companies having inefficient manufacturing processes, but inventory reductions can still wreak havoc in this area unless managed properly. Large WIP balances in front of bottleneck operations may be mandatory, since the cost of bottleneck production may be higher than the cost of the buffering inventory (see the throughput discussion at the end of this chapter). Also, in the absence of a proper shop floor production system, large quantities of WIP may be the only way to run the manufacturing process with any semblance of order. Consequently, it is better to first review the manufacturing operations in detail to see where there are legitimate excessive WIP quantities, and then install manufacturing systems, such as manufacturing resources planning (MRP II) or JIT systems that can be used to gradually reduce WIP levels as the manufacturing process becomes more highly structured and easier to manage. The CFO should also be aware that old piles of WIP frequently disguise large proportions of obsolete or out-of-specification parts that no one wants to discard. Consequently, an inventory write-down is a common result of reductions in the WIP inventory area.

Raw materials is one of the best areas in which to implement an inventory reduction. This is where the full force of an MRP II or JIT implementation is felt, clearly exposing any inventory items that are not currently required for planned production needs. However, this analysis may reveal a number of raw material items that are obsolete and therefore have minimal or reduced value, resulting in a significant write-down in the inventory valuation. Alternatively, the CFO may be forced to accept significant restocking fees to convince a supplier to take back unwanted goods. It might be useful to have the purchasing staff create a list of which unused products can be returned to suppliers, as well as the restocking fees that will be charged, so the CFO can have a general idea of the costs involved with this form of inventory reduction.

There are several issues for the CFO to be aware of when attempting to reduce inventories. First, as just noted, the odds of successfully reducing inventory vary by inventory type. Second, reducing inventory without proper consideration of the net impact on other parts of the business, such as in reduced customer service, may actually increase costs. Third, there is a limit to how much inventory can be squeezed out of a company without an offsetting investment in manufacturing planning systems whose efficiencies will help drive the inventory reduction. Thus, inventory reduction is not an easy decision; cutbacks require careful consideration of offsetting costs, as well as their impact on other parts of the business.

FIXED ASSETS: LEASE VERSUS BUY DECISIONS

In a leasing situation, the company pays a lessor for the use of equipment that is owned by the lessor. Under the terms of this arrangement, the company pays a monthly fee, while the lessor records the asset on its books and takes the associated depreciation expense, while also undertaking to pay all property taxes and maintenance fees. The lessor typically takes back the asset at the end of the lease term, unless the company wishes to pay a fee at the end of the agreement period to buy the residual value of the asset and then record it on the company's books as an asset.

A leasing arrangement tends to be rather expensive for the lessee, since it is paying for the interest cost, profit, taxes, maintenance, and decline in value of the asset. However, it would have had to pay for all these costs except the lessor's profit and the interest cost if it had bought the asset, so this can be an appealing option, especially for the use of those assets that tend to degrade quickly in value or usability, and that would therefore need to be replaced at the end of the leasing period anyway.

The cost of a lease tends to be high, since the number of variables included in the lease calculation (e.g., down payment, interest rate, asset residual value, and trade-in value) makes it very difficult for the lessor to determine the true cost of what it is obtaining. Consequently, when using leasing as the financing option of choice, a CFO must be extremely careful to review the individual costs that roll up into the total lease cost, probably using a net present value analysis to ensure that the overall expenditure is reasonable (see Chapter 9, "Capital Budgeting").

PAYABLES

The CFO should be aware of the early payment discount decisions being made by the controller, since this can impact the timing of cash flows. Of more importance in terms of their overall impact are the decisions to centralize payments with a payment factory, and whether to install spend management practices. These topics are covered below.

Early Payment Discount Decisions

Some suppliers note on their invoices that a discount will be granted to the customer if it pays the invoice early. An example of such an offer is "2/10 N/30," which stands for "take 2 percent off the price if you pay within 10 days, or pay the full amount in 30 days." The CFO should know how to calculate the savings to be gained from such offers. The basic calculation is:

$$\frac{\text{Discount lost}}{\text{Dollar proceeds usable by not taking discount}} \times \frac{360}{\text{Number of days can use money by not taking discount}}$$

For example, the Columbia Rafting Company has an opportunity to take a 1 percent discount on an invoice for a new raft if it makes the payment in 10 days. The invoice is

for $12,000, and is normally payable in 30 days. The calculation is:

$$\frac{\$120}{\$11{,}880} \times \frac{360}{20}$$

$$1.01\% \times 18 = 8.2\% \text{ Interest rate on the proffered discount}$$

In the example, the 18.2 percent interest rate on the early payment discount probably makes it an attractive deal to the CFO. However, one should consider the availability of cash before taking such an offer. For example, what if there are no funds available, or if the corporate line of credit cannot be extended to make the early payment? Even if the cash is available, but there is a risk of a cash shortfall in the near term, the CFO may still be unable to take such an offer. In short, no matter how attractive the offer is, near-term cash shortages can interfere with taking an early payment discount.

Payment Factory Decisions

In a typical accounts payable environment, a company allows its subsidiaries to manage their own payables processes, payments, and banking relationships. The results are higher transaction costs and banking fees, since each location uses its own staff and has little transaction volume with which to negotiate reduced banking fees.

The CFO should be aware of an improvement on this situation, which is the *payment factory*. It is a centralized payables and payment processing center, and is essentially a subset of an enterprise resources planning (ERP) system, specifically targeted at payables. It features complex software with many interfaces, since it must handle incoming payment information in many data formats, workflow management of payment approvals, a rules engine to determine the lowest-cost method of payment, and links to multiple banking systems.

Key payment factory benefits include a stronger negotiating position with the company's fewer remaining banks, better visibility into funding needs and liquidity management, and improved control over payment timing.

The payment factory is especially effective when the payables systems of multinational subsidiaries are centralized, as cross-border banking fees can be significantly reduced. For example, it can automatically offset payments due between company subsidiaries, which results in smaller cash transfers and similarly reduced foreign exchange charges, wiring costs, and *lifting fees* (a fee charged by the bank receiving a payment), while also routing payments through in-country accounts to avoid these international fees. See Chapter 20, "Risk Management: Foreign Exchange," for more information about ways to mitigate the risks associated with foreign exchange transactions.

There are several problems with payment factories—the seven-figure cost of the software, gaining the cooperation of the various subsidiaries that will no longer have direct control over their payment systems, and more centralized banking relationships.

It is also possible to emulate a payment factory in a low-budget situation. First, centralize all accounts payable operations. Second, minimize the number of banking relationships. Third, try outsourcing the foreign exchange operations with one of the remaining banks.

Spend Management Decisions

Spend management systems allow a company to monitor its expenditures and potentially save a great deal of money through improved purchasing. Using these systems, companies can analyze their expenditures in a number of ways—by commodity, supplier, business unit, and so on. They then summarize this information for centralized procurement negotiations with suppliers, thereby reducing costs. Spend management suppliers usually add contract management capabilities and even set up electronic supplier catalogs, so that users can conduct online ordering with a predefined set of suppliers. They also impose better controls over spending, since their systems require access passwords, approval cycles, contract compliance alerts, and supplier performance measurements.

However, these systems are extremely expensive to install and maintain—a minimal system costs $1 million. Some suggestions for creating a low-budget spend management solution follow:

- *Identify unauthorized purchases with exception reports.* The reason for centralizing procurement contracts is to negotiate lower prices in exchange for higher purchasing volumes, so anyone purchasing from an unauthorized supplier is reducing a company's ability to rein in its costs. To identify these people, create a table of approved suppliers and match it against the vendor ledger for each period, yielding a report that lists how much was spent with various unauthorized suppliers. It is also useful to record in an empty purchasing or payables field the name of the requisitioning person, who can then be tracked down and admonished for incorrect purchasing practices.
- *Impose a penalty system.* People resist centralization, especially when it involves eliminating their favorite suppliers. Though penalties may be considered a coercive approach to solving the problem, the imposition of a graduated penalty scale will rapidly eliminate unauthorized spending. For example, a department might incur a $100 penalty for one unauthorized expenditure, $1,000 for the next, and $10,000 for the next.
- *Restrict procurement cards to specific suppliers.* If there is a procurement card system in place, it might be possible to restrict purchases to specific suppliers, thereby achieving centralized purchasing without any central oversight of the process. If there is no procurement card system, then consider obtaining a credit card from each designated supplier, and restrict purchases to those cards.
- *Require officer-level approval of all contracts.* Department and division managers love to retain control over supplier relationships by negotiating their own deals with local suppliers. By enforcing a corporatewide policy that all purchasing contracts be countersigned by a corporate officer, contract copies can be collected in one place for easier examination by a central purchasing staff.
- *Add granularity to the chart of accounts.* To gain a better knowledge of costs, consider altering the chart of accounts to subdivide expenses by individual department, and then go a step further by adding subcodes that track costs at an additional level of detail. For example, if the existing account code is 5020 for the travel expense

account, and the revised code is 5020-01 to track travel costs for just the engineering department, then consider adding a set of subcodes, such as 5020-01-XX, to track more detailed expenditures within the travel category, such as airfare (code 5020-01-01), hotels (code 5020-01-02), and rental cars (code 5020-01-03). This approach requires careful definition of spending categories and can result in data entry errors if there are too many subcategories of expenses. Also, it will not be of much use if reports cannot be created to properly interpret and present this extra level of expense information.

These suggestions will not result in a seamless in-house spend management system. However, they will yield somewhat greater control over expenses and more visibility into the nature of a company's expenditures.

DEBT

Acquiring Debt Decisions

A CFO should regularly review the need to acquire more debt as part of an overall funding strategy that can include other forms of financing, such as reducing working capital requirements or conducting an equity offering. Consider the following factors as part of the debt decision:

- *Existing loan covenants.* A legal agreement for an existing loan may allow no further debt until the current debt is either paid off or reduced to a specific level. Covenants may also limit the debt/equity ratio (see next item), making it impossible to obtain more debt without first adding equity.
- *Current debt level in relation to equity.* Lenders will look askance at additional requests for debt if there is not a counterbalancing amount of equity. A company with a high debt/equity ratio is likely to be told to find more equity before being granted additional debt.
- *Debt due dates.* Try not to obtain new debt having a due date identical to that of existing debt, so there will be less risk of having to refinance large amounts of debt at the same time.
- *Business cycles.* Some businesses have natural revenue peaks and valleys that will greatly reduce their ability to pay loans during slow periods. This type of business needs a higher proportion of equity in order to avoid the risk of loan defaults.
- *Product cycles.* If a company's product lines are aging and facing cancellation, then it might have little ability to pay off loans that come due after the projected termination date of the products.
- *Net operating loss (NOL) carryforwards.* If a business has large NOLs that it can use to offset its income, it will have no immediate use for the tax deductibility of interest, though using debt can still delay the use of NOLs into later years.
- *Need for a borrowing reserve.* The CFO should always plan to have more debt available through a line of credit than is actually needed, so unforeseen cash requirements can be easily handled.

Realistically, the CFO will be stymied more by the first two bullet points than the remaining ones. If there is too much debt already on the balance sheet, or if legal provisions of existing loans are too restrictive, there will be no way to obtain more debt in the short term. The remaining bullet points are more advisory in nature, where the CFO should take them into account, but in reality may have to take any deal offered if obtaining debt in the short term is a critical priority.

Refinancing Decisions

The CFO should regularly review the cost of all types of company debt to see if it is too expensive and therefore worthy of refinancing. Though this may seem like a simple matter, there are several issues to take into consideration. First, the company may have a very tight relationship with a single lender who has extended all of the company's debt to it—if so, paying off the most expensive loan in the debt portfolio will not endear this critical lender to the company. Under this scenario, it may not even be possible to refinance a single loan within the portfolio, because the lender has cross-collateralized all of the company's assets on the various loan documents. Because no collateral is available to secure a loan with a different lender, the company can only refinance the debt by shifting the entire loan package to a new lender.

Another consideration is that the debt the CFO wishes to replace has a fixed interest rate, but the least expensive replacement debt carries a variable interest rate. The decision to switch from the security of a fixed rate to a situation where the rate could increase substantially should be subject to considerable debate. The CFO can reduce the risk of a rapid rate increase by negotiating an annual cap on any rate increases during the term of the new loan. The decision to adopt a variable loan is frequently driven by the expected loan payoff date, such that maximum interest rate increases would still not exceed the current fixed loan rate by the time the loan should be paid off. For example, The International Pickle Company has a long-term loan that carries a 10 percent interest rate. The CFO expects to pay off this loan in five years. In the meantime, the company has been offered a 6 percent variable-rate loan with an annual rate cap increase of 1.5 percent that would not take effect until the end of each year. He calculates that, even if interest rates skyrocketed over the next five years, the new loan would still be less expensive than the existing loan until the end of the fourth year of the loan, and so agrees to refinance the debt.

Convertible Security Issuance Decisions

A convertible security is a bond that can be converted into common stock. The common stock price at which the bond can be converted is based on the conversion ratio, which is the ratio of the number of shares that can be purchased with each bond. For example, if a $1,000 bond has a conversion ratio of 10, then it can be converted into ten shares, which translates into a share price of $100. This does not mean that the holder of a bond will immediately convert to shares, however—that will only happen when the market price of the stock equals or exceeds the amount indicated by the conversion ratio. If the market price of the common stock exceeds the price indicated by the conversion ratio, the price of the bond will also rise, since its value, based on its convertibility, is now

greater than its price based on the stream of future interest payments from the company in payment for the bond.

A convertible security is worthy of much attention by the CFO if a company does not want to pay back the underlying principal on its bonds. This is most common in a high-growth situation where all cash will be needed for the foreseeable future. Also, by converting debt over to equity, a company can improve its debt/equity ratio, which will improve relations with lenders, while also eliminating the need to pay interest on the bonds that no longer exist. Further, the CFO can make a debt offering look more attractive to investors by giving them some upside potential if the common stock subsequently increases in value, which should result in a reduction in the interest rate on the debt. This is particularly important if market conditions would otherwise necessitate a high interest rate. Finally, a company can convert a group of existing debt holders into a group of shareholders, which means that it has a (presumably) friendly and long-term group of investors now holding its stock. The only downsides of this approach are that the increased number of shares will reduce the earnings per share, and that control will be spread over a larger group of investors, which might weaken the stake of a majority owner.

Disclosure Reporting Decisions

An established company with a mature business model discloses a different set of performance metrics to investors and analysts than does a newer company that is on a more rapid growth path. The CFO must decide at what point the types of disclosures change to match the current or expected business model. For example, a mature company should emphasize the disclosure of such basic financial performance information as gross and net margins and cash flow, as well as such basic operational issues as customer retention, capacity utilization, and revenue per employee. Conversely, a company on a rapid growth path should place more emphasis in its disclosures on the level of expenditures for R&D and marketing, as well as sales from new products, patents granted, and share of market.

EQUITY

One of the most important and far-reaching of all CFO decisions is whether to obtain debt or equity financing, since high debt levels can imperil a firm's existence, and additional equity may reduce the return to existing shareholders. This topic and others are covered below.

Debt versus Equity Funding Decisions

Debt is almost always a less expensive source of funding than equity, because investors expect significant returns on their investments, while the interest cost of debt is tax-deductible, rendering debt less expensive. Furthermore, during the usual periods of inflation, a company pays back its debt with less expensive dollars, making this an even less expensive source of funding. However, there are several other issues

to consider when determining whether to pursue debt or equity as the next source of funding.

The first issue is that the senior management team or the company owners may be uncomfortable with the prospect of obtaining more debt, no matter how available or inexpensive it may be. This happens most frequently in privately owned firms with later-generation owners who are most concerned with maintaining their long-term source of income. It is less common with entrepreneurs who are willing to take more risks, or with public companies where the CFO is allowed to balance the risk of debt default with the reduced cost of using more debt than equity.

Even if the owners and managers are willing to obtain more debt, the lenders might not be willing to do so. This problem arises when a company has poor or highly variable cash flows, is already highly leveraged, or has a history of either not paying off its debts in a timely manner or of violating its loan covenants. If so, the company will probably have to turn to an equity offering with incentive clauses (see the next section).

Even if lenders are ready and willing to issue more debt, there might be no collateral left on the balance sheet to assuage their levels of anxiety about repayment risk. If so, the company might be forced to accept a high interest rate, an early payoff date, or highly restrictive covenants, or might allow the lender to take a junior position on any corporate assets. If these options do not work for the lender, then the company will once again be forced to shift to an equity offering.

It is evident from this discussion that debt is generally the preferred source of funding, with the CFO only seriously considering the procurement of equity when it is either impractical to obtain more debt or if it would put the company at serious risk of defaulting on its loans.

Type of Equity Offering Decisions

The CFO can recommend the issuance of two types of equity—common or preferred stock. The terms of common stock are typically laid down in the articles of incorporation, and include specific terms required by the state in which the company is incorporated. The CFO usually recommends a common stock offering only when several circumstances apply. First, the existing shareholders must not be concerned about a dilution in their ownership interests through this new issuance (unless the new shares are being sold to them, in which case ownership percentages will only change among the existing shareholders). This is a major concern in cases where the bulk of a company's stock is owned by a small number of individuals.

The second circumstance is that the company's lenders are becoming uncomfortable with a high level of debt, and wish to balance it with more equity. This pressure could also come from the board of directors, which may not want to run the risk of default if there are large loans outstanding.

The CFO generally recommends a common stock issuance only when all other sources of less expensive funds have been exhausted, because shareholders typically have a much higher expectation of return on investment than is the case for other fund providers.

A variation on a common stock offering is *preferred stock*. This equity instrument can come in a variety of flavors, including a fixed or variable interest rate that may or

may not be cumulative, a conversion feature to common stock, the ability to be called by the company at any time or at fixed intervals—the range of possible features is endless. The exact terms of a preferred stock issuance should be tailored to the perceived needs of the pool of potential investors. For example, if a company's stock has a history of being highly variable, investors may want the option to convert it to common stock in order to take advantage of a possible increase in the stock price at a later date.

Onerous terms can also be added to a preferred stock issuance in order to ensure that investors will accept the offering at an acceptable price. For example, its terms can state that, in the event of a company sale, the preferred shareholders will receive 100 percent of their investment back before common shareholders receive anything. In order to protect their rights in this regard, the preferred shareholders may also have an override vote on any contemplated mergers, acquisitions, or significant asset sales. These additional terms might seem onerous, but they can ensure a high price for the stock. In the meanwhile, avoiding the need for any collateral improves the debt/equity ratio to the point where lenders may be willing to issue additional credit.

For example, the Xtreme Running Shoe Company's CFO is attempting to obtain additional debt financing, but the company's lenders are concerned about the debt/equity ratio and insist on an additional equity infusion prior to granting any additional loans. Unfortunately, it is also a bear market, and the company's valuation has been driven lower than normal, so any sale of common stock would result in an excessive degree of dilution for the existing shareholders in relation to the amount of equity obtained. Accordingly, the CFO recommends issuing a special class of preferred stock, containing an above-market interest rate on annual dividend payments, as well as a guaranteed conversion at the investors' option to common stock at a favorable rate in five years' time. Thus, potential investors are willing to pay more for the stock, which gives them short-term dividend income, plus a potential equity kicker in the medium term.

Dividend Issuance Decisions

The CFO plays a significant role in convincing the board of directors to issue dividends, and the amount paid out per share. The decision to issue dividends requires consideration of many issues. First, consider that investors prefer to see a *steady and reliable* stream of dividends. Thus, a well-meaning initial dividend issuance could spark calls from investors who expect to keep seeing it. If so, the board might feel obligated to continue the payments, even if the company needs the money for other purposes.

Another issue is the impact of loan restrictions on dividends. Many lenders allow no dividends at all as part of their loan requirements, or at least no increase in the preexisting level of dividends. Their reasoning is obvious, since a company might otherwise take out a loan to pay its shareholders, thereby leaving fewer assets for the lender to attach in the event of a bankruptcy. Thus, the lending situation has a major impact on the decision to issue dividends, and typically precludes an issuance when a company's debt load is so heavy that lenders would begin to restrict dividends in any event.

Another issue is that dividend payments represent a reduction of retained earnings. When dividends are paid, equity is reduced, which will create a higher debt to equity ratio. If a lender has imposed a maximum debt/equity ratio as part of a loan agreement, then it is possible that a dividend issuance will place the company in a state of noncompliance with its loan covenants.

Another concern with the initial declaration of dividends is that it may cause current investors to sell their shares. Some investors prefer to buy the shares of companies that pour all of their excess funds into growth, while others look for a steady source of income from dividends. When a company initially starts paying dividends, it might experience the sudden departure of its growth-oriented investor base in favor of a new group of income-oriented investors.

Another consideration regarding the dividend issuance decision is the company's ability to obtain debt. If it has ready access to credit markets, then corporate management will be more likely to issue dividends, since the company is reasonably assured of obtaining replacement funding. Conversely, if credit sources are scarce, a company will be more inclined to hoard its cash in order to provide a buffer for any future financial problems; this leaves less cash available for a dividend.

A key concern is cash flow. If a company has an extremely unstable cash flow, perhaps shifting from cash drains during some months to major inflows during others, or tied to a major short-term project, then a potentially long-term obligation such as a dividend issuance is a bad idea. Even if there is enough cash on hand to make the payment, the company might need the cash in the short term and thus cannot afford to obligate it.

From the taxation perspective, dividends are not deductible as an expense, as opposed to interest payments on debt. This makes equity a more expensive form of funding than debt by the amount of a corporation's incremental tax rate.

A reason in favor of issuing dividends is that the Internal Revenue Service (IRS) will penalize a company for accumulating an excessive amount of earnings. The IRS considers accumulated earnings of less than $150,000 to be sufficient for the working needs of service businesses, such as accounting, engineering, architecture, and consulting firms. It considers accumulations of anything under $250,000 to be sufficient for most other types of businesses. A company can argue that it needs a substantially larger amount of accumulated earnings if it can prove that it has specific, definite, and feasible plans that will require the use of the funds within the business. Another valid argument is that a company needs a sufficient amount of accumulated earnings to buy back the company's stock that is held by a deceased shareholder's estate. If these conditions are not apparent, then the IRS will declare the accumulated earnings to be taxable at a rate of 39.6 percent. The severity of this tax is designed to encourage organizations to issue dividends on a regular basis to their shareholders, so that the IRS can tax the shareholders for this form of income.

Perhaps the chief reason for avoiding a dividend is a high-growth situation where a company must pour all available funds into its working capital in order to sustain its rate of growth in new customer orders. In such cases, the rapidly increasing value of the firm will be reflected in an increased stock price that should more than compensate investors for any lost dividends. Alternatively, if a company has minimal

growth prospects, it might be a better use of the funds to return them to investors in the form of dividends.

An alternative to a dividend issuance is to buy back shares from investors. By accepting this buyout, investors will (depending on their circumstances) probably claim a long-term capital gain on the transaction, which is taxed at a lower rate than dividend income. This approach is especially good for situations where a company has obtained a temporary increase in its cash flows, but does not necessarily have prospects for future cash flows of a similar size, and so does not want to set investor expectations for a long series of dividend payments.

As an example of how this concept may be used, the Breakout Software Company, maker of prison databases, has two components to its business, which are long-term database subscriptions and software consulting. The database portion of the business generates a steady stream of cash flows that can be predicted with great reliability for the next few years. The consulting business, however, is tied to short-term contracts, and so results in highly variable cash flows. Based on this information, the CFO recommends a dividend that is based on a percentage of the subscription cash flows, while recommending a stock buyback based on the short-term cash flows from the consulting business. This dual approach links the appropriate dividend policy to the nature of the firm's underlying cash flows.

PRODUCTS: PRODUCT ELIMINATION DECISIONS

Pareto analysis holds that 80 percent of the activity in a given situation is caused by 20 percent of the population. This rule is strongly applicable to the profitability of a company's products, where 80 percent of the total profit is generated by 20 percent of the products. Of the remaining 80 percent of the product population, it is reasonable to assume that some make no profit at all. Consequently, financial analysis should encompass the regularly scheduled review of all company product offerings to determine which products should be withdrawn from the marketplace. This is a valuable analysis for the following reasons:

- *Complexity.* In general, too many products lead to an excessive degree of system complexity within a company in order to support those products.
- *Excessive inventory.* Each inventory item usually contains some unique parts, which require additional storage space in the warehouse, as well as a working capital investment in those parts, and the risk of eventual obsolescence. Further, the presence of unique parts in a product may be the sole reason why the purchasing department continues to deal with a supplier; canceling the product allows the company to reduce the number of suppliers it uses, thereby gaining greater volume discounts with the remaining suppliers.
- *Engineering time.* If there are changes to products, the engineering staff must update the bill of material and labor routing records, all of which takes time.
- *Marketing literature.* The marketing department usually maintains a unique set of literature for each product, which requires periodic updating and reprinting.

- *Servicing cost.* The customer support staff must be trained in the unique features of each product, so they can adequately answer customer questions.
- *Warranty cost.* Some products have a considerable warranty cost, possibly due to design flaws or inadequate materials that require sizable warranty reserves.

When conducting a product withdrawal analysis, do not assume that some expenses will be eliminated along with a product. Instead, an expense may have been allocated to a product, but will still remain once the product is gone. For example, the servicing cost of the customer support staff is unlikely to result in the actual elimination of a customer support position just because a single product has been canceled. Instead, customer support overhead will now be assigned to the smaller remaining pool of products. Thus, it is extremely important to only include direct costs in a product withdrawal analysis, and exclude any overhead allocations. To be certain that a product cancellation is not merely shifting overhead costs elsewhere, it is useful to develop before-and-after pro forma financial statements to see if there is really an improvement in profitability resulting from the cancellation.

As noted, only direct costs should be used in calculating the profitability of a product for purposes of the cancellation decision. This results in the following formula:

Standard list price (1)
− Commission (2)
− Buyer discounts (3)
− Material cost (4)
− Scrap cost (5)
− Outsourced processing (6)
− Inventory carrying cost (7)
− Packaging cost (8)
− Unreimbursed shipping cost (9)
− Warranty cost (10)
= Profit (loss)

Comments regarding this formula are as follows, and match the numbers next to each line item in the formula:

1. *Standard list price.* If a product has a number of prices based on volume discounts or other criteria, it may be necessary to create a model using the costs itemized in the model to determine the breakeven price below which no profit is earned. The result could be a decision not necessarily to cancel the product, but rather to not sell it at less than a certain discounted price, below which it makes no profit.
2. *Commission.* Salespeople sometimes earn a commission on product sales. If these commissions are clearly identifiable with a specific product and will not be earned if the product is not sold, then include the commission in the product cost.
3. *Buyer discount.* The inclusion of buyer discounts in the calculation calls for some judgment. It should not be included if discounts are a rare event and make up only a small dollar amount. If discounts are common, then calculate an average discount amount and deduct it from the standard list price.

4. *Material cost.* This is the cost of any materials included in the manufacture of a product.
5. *Scrap cost.* If a standard amount of scrap can be expected as part of the production process that is specifically identifiable with a product, then include this cost in the profitability calculation.
6. *Outsourced processing.* If any production work related to the product is completed by an outside entity, then the cost of this work should be included in the calculation on the grounds that the entire cost of the outsourced processing will be eliminated along with the product.
7. *Inventory carrying cost.* This should only be the incremental inventory carrying cost, which is usually only the interest cost of the company's investment in inventory specifically related to the product. It should not include the cost of warehouse storage space or insurance, since both of these costs are fixed in the short term and are very unlikely to change as a result of the elimination of a single product. For example, if a company leases a warehouse, it is obligated to make monthly lease payments irrespective of the amount of storage space being taken by inventory used for a specific product.
8. *Packaging cost.* Include the cost of any packaging materials used to contain and ship the product, but only if those materials cannot be used for other products.
9. *Unreimbursed shipping cost.* If the company is absorbing the cost of shipments to customers, then include this cost, net of volume discounts from the shipper.
10. *Warranty cost.* Though normally a small expense on a per-unit basis, an improperly designed product or one that includes low-quality parts may have an extremely high average warranty cost. If significant, this cost should be included in the profitability analysis.

In addition, note that production labor costs are *not* included in the above calculation. The reason is that production labor rarely varies directly with the level of production; instead, a fixed number of workers will be in the production area every day, irrespective of the level of work performed. Thus, the cancellation of a product will not impact the number of workers employed. However, if a product cancellation will result in the verifiable and immediate elimination of labor positions, then the incremental cost of the eliminated labor should be included in the above calculation.

A product that is clearly unprofitable might still be needed by a key customer who orders other, more profitable products from the company. If so, combine the profits of all sales made to that customer to ensure that the net combined profit is sufficiently high to warrant the retention of the unprofitable product. If this is not the case, consider canceling the unprofitable product and negotiating with the customer for a price reduction on other products in order to retain the customer.

Another cancellation issue is the presence of dependent products. *Ancillary products* are supplements to the main product, which provide additional profits to the overall product line. For example, the profit margin on a cell phone may be negative, but there may be a sufficiently high profit level on extra cell phone batteries, car chargers, headsets, and phone covers to more than offset the loss on the initial product sale. In these cases, the margins on all ancillary products should be included in the profitability analysis.

Finally, the frequency of product profitability reviews will be greatly dependent on product life cycles. If products have very short life cycles, then sales levels will drop rapidly once products enter the decline phase of their life cycles, potentially leaving the company with large stocks of excess inventory. In these situations, it is critical to conduct frequent reviews in order to keep a company's investment in working capital from becoming excessive.

There are also two nonfinancial reasons for retaining unprofitable products that must be considered before canceling a product. First, a company may want to offer to customers a full range of product offerings so they can purchase anything they need from the company without having to go to a competitor. This may require the retention of a product whose absence would otherwise create a hole in the corporate product line. Second, it may be necessary to offer a product in a specific market niche in order to keep competitors from entering a market that the company considers to be crucial to its ongoing viability.

FIXED EXPENSES: STEP COSTING DECISIONS

A key decision for the CFO is whether to recommend the incurrence of a step cost. This is an incremental fixed cost, such as the creation of a new overhead position, that will permanently increase a company's cost base. Adding such costs may be required if the current staff is simply unable to address the needs of existing sales and production levels, and needs the help. Nonetheless, the CFO must review this decision in light of its impact on profitability. One of the best ways to do so is through breakeven analysis of the step costing decision, which is discussed in Chapter 10, ''Other Financial Analysis Topics.'' This analysis frequently shows that profits are maximized just *prior to* the incurrence of a step cost, since it may require significant additional sales to offset the step cost.

There are several key factors for a CFO to consider when mulling over this decision. One is the sales point at which profits will match the level just before the incurrence of the step cost. For example, a printing plant is experiencing a ramp-up in sales and its CFO decides to invest in a new press to meet the demand. The press is leased, and costs $250,000 per year. Gross margins are 30 percent, so the plant must generate $833,333 per year in additional sales just to cover the step cost represented by the new press.

Another factor leads from the last point, which is to determine the maximum sales level that a facility can possibly support under the best of circumstances. To continue with the last example, if the printing plant's other departments can only support incremental new sales of an additional $500,000 without the incurrence of even more step costs, then it is impossible to achieve the $833,333 sales level required to pay for the printing press.

Yet another factor to consider is the stability of incremental new sales required to pay for a step cost. To continue with the example, the CFO should decline to lease the press if the incremental sales driving the decision are for a short-term deal with a firm expiration date, or with an uncertain future that is not supported by a long-term purchase order. A hard look at the market served by a company, the level of

competition, potential price wars, and related factors should all be carefully considered before making the step costing decision.

The examples shown thus far relate to major step costing decisions. However, most step costs are much more minor, with small jumps in costs that have a minimal incremental impact on the bottom line. Nonetheless, these additions gradually eat away at profits over time. To gain control over them, the CFO should require elaborate approval mechanisms for any step costs incurred outside of the standard budgeting process. For those costs included in the budget, the CFO has more time to conduct an analysis of why each step cost is needed, how improved efficiencies might avoid the cost, whether to outsource rather than incur the cost, and so on. The step costing decision is one of the most crucial to a company on an ongoing operating basis, and therefore deserves a substantial proportion of a CFO's time.

PAYROLL EXPENSES: TEMPORARY LABOR VERSUS PERMANENT STAFFING DECISIONS

In many organizations, particularly those in the service industry, the largest expense by far is for payroll. Consequently, the CFO should become deeply involved in decisions to alter the size of the workforce. This is a particular concern in areas where the business is highly seasonal, requires experienced personnel, operates under a union agreement, or is subject to burdensome state unemployment taxes. Consider these key decision points:

- *Seasonality.* If a business has a highly variable sales season, this is a key indicator in favor of using temporary labor during the peak season, leaving only a small core of seasoned employees for the remainder of the year. A classic example is the amusement park, where temporary staffers know in advance that they will only be employed for a few months. However, this is not such a simple decision when the experience level required of the staff is relatively high, since it may be difficult to obtain new help with the requisite knowledge base when sales ramp up again. In such situations, the CFO should consider level-loading the production facility, balancing this cost against an increase in inventory levels during low sales periods. If this is not an option, then a corporate investment in a significant training program to ramp up new employees quickly may be a reasonable alternative.
- *Turnover rate of existing in-house staff.* There may be no decision to make between the use of temporary versus in-house full-time staff if the full-time staff turns over with great regularity. This is a common problem in low-skill, highly repetitive environments, such as base-level positions on the manufacturing floor.
- *Union agreements.* A labor force represented by a union can greatly restrict a company's ability to lay off the regular workforce. This may tend to lead a CFO to recommend extensive use of temporary employees for short-term requirements, rather than run the risk of hiring more staff into the union who will then be difficult to let go. The union may suggest giving its members high-cost overtime rather than bring in temporary employees, thereby increasing their total pay. However, quality

problems can arise after employees work too many hours, making this a choice of diminishing returns.

- *Unemployment taxes.* If a company constantly hires and fires staff as it experiences rapid changes in its required staffing levels, it will experience increasing state unemployment tax rates. State unemployment agencies annually review the amount of unemployment payments made to a company's former employees and alter the company's prospective tax rate for the next year to make the company foot the bill for these payments. If a company creates a large pool of former employees who are drawing unemployment benefits, it is setting itself up for an increase of potentially several percent in its payroll taxes.
- *Technical skill requirements.* Temporary labor agencies used to specialize in providing low-skill staff to companies. However, these agencies now offer pools of very experienced, technically capable people who can step into almost any position. Nonetheless, a strategically critical position should be brought in house and provided with a proper benefits package, on the grounds that the company wants to retain the person in that position for as long as possible. In this case, cost issues are secondary to retention.
- *Terms of agreements with temporary labor agencies.* A temporary labor agency charges a substantial markup on the hourly fees it charges for a company's use of people provided to it by the agency. This fee covers not only the agency's profit, but also its recruiting costs, payroll taxes, and benefits (if any) that it may offer its temporary workforce. A company using a recruiting agency will usually have to sign a contract with the agency, agreeing not to hire any of its temporary workers without paying a search fee, or else only after a number of months have passed (during which time the agency will have earned a large profit). This type of fee structure frequently leads the CFO to recommend either running an in-house temporary work agency or only using temporary labor agencies for very specific requirements.

For example, the CFO of the SecureTech Consulting Company is faced with the decision whether to bring in temporary labor for a government system security consulting project, or to hire the personnel directly. The company has a long tradition of not laying off personnel, so the CFO wants to be sure that these people will be needed after the current government contract has been completed. Accordingly, she talks to the business development vice president to see if the government contract may be extended past its current one-year term. The response is that the government will make a firm commitment for extended funding after it has reviewed the quality of SecureTech's work for the first three months of the contract. Based on this information, she elects to hire personnel through an IT temporary services agency for the first three months of the contract and then pay a small recruiting fee to hire them full-time if the contract is extended. If the contract is not extended, then she will keep them on temporary status and let them go at the end of the contract.

As another example, the CFO of the Stereo Devices Company must make a recommendation about hiring stereo systems installers for the crucial holiday season. A good stereo installer with above-average customer skills is considered a key employee

worth retaining, but the company can afford to keep only half the installer staff during slower parts of the year. A major consideration is the quality of work provided to customers by the installers, which has proven to be of a lower standard when short-term staff were used in the past. Accordingly, the CFO recommends authorizing a considerable jump in overtime hours allowed during the holiday season by the more experienced staff, while only hiring a minimum number of personnel who act as assistants to the more experienced staff.

In both of the examples, monetary concerns were not the only reasons for the decisions being made. On the contrary, the consulting firm wanted to avoid breaking a long company tradition of avoiding layoffs, while the installation company wanted the best possible customer service. Less expensive alternatives were available, but the CFOs both decided that key company values came first.

ENTITIES: DIVESTITURE DECISIONS

A company will occasionally consider the divestiture of some portion of the business, for a variety of reasons. For example, the CFO may feel that the company will be worth more to investors if it is broken into pieces, though this approach is difficult to prove. Another reason is that the management team is having difficulty allocating capital between various portions of the entity, or that one business segment is using most of the capital, essentially ''starving'' other business segments of funds. The same reasoning can apply to the time of the management team, which may be unreasonably allocated to fix the problems of one business unit; in this case, the management team may be of the opinion that managing a smaller firm will be easier on them, and better for the company as a whole. A divestiture may also seem attractive if the management team decides to steer the company in a different strategic direction, which may call for the divestiture of all business segments that are considered to be unrelated to the new direction. In a few cases, a company may even be forced by the government to divest because of antitrust issues. Whatever the initial reason given, the CFO should explore the issue by focusing on the inherent value of the subject business segment to the company, what kind of effort or funding it would take to more fully achieve the benefits of that segment within the company, and what would happen to the company's competitive position if the segment were divested. By reviewing these issues, the CFO should be able to arrive at a defensible conclusion regarding the best action to be taken.

If the CFO is asked to look into the size and structure of a divestiture, there are several issues to consider. First, is there a clearly identifiable entity that can be broken away from the company? For example, separate facilities and staff should be clearly identifiable as belonging to the business segment to be divested. Second, the business segment must be one that can operate profitably on its own, which means that it must address a clearly identifiable market, have an appropriate infrastructure for that market, and therefore be able to successfully compete in it.

If these conditions apply, then the CFO can consider the type of structure that the divestiture should follow. For example, the business segment can be spun off to existing shareholders. This is an excellent approach from the perspective of the shareholders,

who will avoid an income tax liability by receiving qualified shares in the new entity. A spin-off also allows the management team to avoid the hassle of dealing with a buyer, setting its own terms for the divestiture instead. A variation on the spin-off is a *carve-out*, where the company makes shares in the new entity available through an initial public offering (IPO), rather than as a stock distribution to shareholders. Yet another variation is a sale to the management team of the business segment, which typically structures the deal as a leveraged buyout (LBO), involving little capital and large amounts of debt. Finally, a divestiture can be accomplished through a sale to another company, though this approach can involve a painful amount of negotiation, legal fees, contingent fees, and a lower price than might be achieved by other means.

SYSTEMS: WHEN TO USE THROUGHPUT COSTING

Throughput costing requires an understanding of some new accounting terminology. *Throughput* is the contribution margin that is left after a product's price is reduced by the amount of its totally variable costs. There is no attempt to allocate overhead costs to a product, nor to assign to it any semivariable costs. As a result, the amount of throughput for most products tends to be quite high. *Totally variable costs* are the costs that will only be incurred if a product is created. In many instances, this means that only direct materials are considered to be a totally variable cost. Direct labor is not totally variable unless employees are only paid if a product is produced. A *capacity constraint* is a resource within a company that limits its total output. For example, it may be a machine that can only produce a specified amount of a key component in a given time period, thereby keeping overall sales from expanding beyond the maximum capacity of that machine. *Operating expenses* are the sum total of all company expenses, excluding totally variable expenses.

The primary focus of throughput costing is on how to force as many throughput dollars as possible through a capacity constraint, pure and simple. It does this by first determining the throughput dollars per minute of every production job scheduled to run through the capacity constraint, and then rearranging the order of production priority so that the products with the highest throughput dollars per minute are produced first. The system is based on the supposition that only a certain amount of production can be squeezed through a bottleneck operation, so the production that yields the highest margin must come first in order of manufacturing priority to ensure that profits are maximized. The concept is most easily demonstrated in the example shown in Exhibit 2.2.

In the example, we have four types of products that a company can sell. Each requires some machining time on the company's capacity constraint, which is the circuit board manufacturing process (CBMP). The first item is a 19-inch color television, which requires 10 minutes of the CBMP's time. The television sells for $150, and has associated direct materials of $68.90, which gives it a throughput of $81.10. We then divide the throughput of $81.10 by the ten minutes of processing time per unit on the capacity constraint to arrive at the throughput dollars per minute of $8.11 that is shown in the second column of Exhibit 2.2. We then calculate the throughput per minute for the other three products, and sort them in high-low order, based on which

EXHIBIT 2.2 Throughput Model

	Maximum Constraint Time: 62,200				
Product	**Throughput $/Minute of Constraint**	**Required Constraint Usage (min.)**	**Unit Demand/ Actual Production**	**Cumulative Constraint Utilization**	**Cumulative Throughput/ Product**
19″ Color television	$8.11	10	1,000/1,000	10,000	$ 81,100
100-Watt stereo	7.50	8	2,800/2,800	22,400	168,000
5″ LCD television	6.21	12	500/500	6,000	37,260
50″ High-definition television	5.00	14	3,800/1,700	23,800	119,000
			Throughput total		$405,360
			Operating expense total		375,000
			Profit		30,360
			Profit percentage		7.5%
			Investment		500,000
			Return on investment		6.1%

ones contribute the most throughput per minute. This leaves the 19-inch television at the top of the list. Next, we multiply the unit demand for each item by the time required to move it through the capacity constraint point. We do not care about the total production time for each item, only the time required to push it through the bottleneck. Next, we determine the total amount of time during which the capacity constraint can be operated, which in the example is 62,200 minutes, and which is noted in bold at the top of the example. We then fill in the total number of minutes required to produce each product in the fifth column, which also shows that we will not have enough time available at the capacity constraint to complete the available work for the high-definition television, which was listed as having the lowest priority. Then, by multiplying the throughput per minute by the number of minutes for each product, and then multiplying the result by the total number of units produced, we arrive at the total throughput for the entire production process for the period, which is $405,360. However, we are not done yet. We must still subtract from the total throughput the sum of all operating expenses for the facility. After they are subtracted from the total throughput, we find that we have achieved a profit of 7.5 percent and a return on investment of 6.1 percent. This is the basic throughput accounting model.

So far, this looks like an ordinary analysis of how much money a company can earn from the production of a specific set of products. However, there is more here than is at first apparent. The issue is best explained with another example. Let us say that the CFO arrives on the scene, does a thorough costing analysis of all four products in the preceding exhibit, and determines that, after all overhead costs are properly allocated,

EXHIBIT 2.3 Fully Absorbed Product Costs

Product Description	Price	Totally Variable Cost	Overhead Allocation	Gross Margin
19″ Color television	$150.00	$68.90	$49.20	$31.90
100-Watt stereo	125.50	65.50	18.00	38.00
5″ LCD television	180.00	105.48	41.52	33.00
50″ High-definition television	900.00	830.00	20.00	50.00

the high-definition television actually has the highest gross margin, and the 19-inch television has the least. The relative positions of the other two products do not change. The CFO's summary of the product costs appears in Exhibit 2.3.

According to the cost accounting scenario, we should actually be producing as many high-definition television sets as possible. To test this theory, we will duplicate the throughput analysis shown earlier in Exhibit 2.2, but this time we will move the high-definition television to the top of the list and produce all 3,800 units that are on order, while dropping the 19-inch television to the bottom of the list, and only producing as many units as will still be available after all other production has been completed. All other variables will stay the same. This analysis is shown in Exhibit 2.4.

EXHIBIT 2.4 Throughput Analysis Using Priorities Based on Overhead Costs

	Maximum Constraint Time: 62,200				
Product	Throughput $/Minute of Constraint	Required Constraint Usage (min.)	Unit Demand/ Actual Production	Cumulative Constraint Utilization	Cumulative Throughput/ Product
50″ High-definition television	$5.00	14	3,800/3,800	53,200	$266,000
100-Watt stereo	7.50	8	2,800/1,125	9,000	67,500
5″ LCD television	6.21	12	500/0	0	0
19″ Color television	8.11	10	1,000/0	0	0
		Throughput total			$333,500
		Operating expense total			375,000
		Profit			−41,500
		Profit percentage			−12.4%
		Investment			500,000
		Return on investment			−8.3%

According to this analysis, which is based on the best cost allocation principles, where we have carefully used activity-based costing to ensure that overhead is closely matched to actual activities, we have altered the mix of products and realized a net *reduction* in profits of $53,360! How can this be possible?

This issue is caused by three major problems with the traditional cost accounting methodology, all of which are corrected through the use of throughput accounting. All three of these issues contributed to the problem just noted in Exhibit 2.4. The first is that you cannot really allocate overhead costs to products and expect to use the resulting information in any meaningful way for incremental decisions of any kind. To do so would be to make the erroneous assumption that overhead costs vary directly with every unit of a product that is produced or sold. In reality, the only cost that varies directly with a product is the cost of its direct material. That is all. Even direct labor is no longer so direct. In how many companies can one find a situation where the staff immediately goes home when the last product is completed? Instead, the staff is employed on various projects during downtime periods, to ensure that the same experienced staff is available for work the next day. There is an even less tenuous linkage between machine costs and products. Will a company immediately sell a machine if there is one less unit of production running through it? Of course not. The machine will sit on the factory floor and accumulate depreciation and preventive maintenance costs until some other job comes along that requires its services. In short, nearly all of the costs of any company can be lumped into a general category called ''operating expenses'' or some similar category. These are simply the costs that a company incurs to maintain a given level of capacity, rather than a disaggregated group of costs that are closely tied to specific products. The reason why this concept has such a large bearing on Exhibit 2.4 is that the high-definition television was assumed to have a much higher margin than the 19-inch television on the basis of allocated costs. However, for the purposes of the production runs used in the throughput example, the overhead cost pools that were assigned to these two products will still become valid expenses, whether either of the products is produced at all. Consequently, it is detrimental to use overhead as a factor in the determination of product throughput, no matter what traditional cost accounting principles may state.

The second major problem with traditional cost accounting is that it completely ignores the concept of limited production capacity. Instead, the primary goal of a costing analysis is to determine which products have the highest gross margins and which have the least. This information is then used to pursue two goals—to sell oodles of the high-margin products while either dumping or improving the margins on the low-margin products. Unfortunately, the real world states that there is a limited production capacity available, so there is a choice between the best set of customer orders that are available at the moment, only some of which can be run through the capacity constraint—and possibly none of which may be the highest-margin products that the company is capable of producing. Therefore, a simple categorization of which products are the ''best'' or ''worst'' has no meaning on a day-to-day basis. The real world forces a choice between a set of possible product sales, which requires a continual reevaluation of a mix of product orders for different products and quantities in relation to one another. In Exhibit 2.4, ignoring the capacity constraint would have led to the much higher profit of $177,360

(assuming that all production is completed for all four products), but of course this was rendered impossible by the capacity constraint.

The final problem, and the one that is clearly the largest inherent flaw in traditional cost accounting, is that it ignores the fact that a company is one large, interactive system, and instead strives to achieve lots of local improvements in efficiency. The flaw that we just saw in Exhibit 2.4 was that the CFO determined the fully absorbed cost of each product on its own, not realizing that, to a significant degree, each of those products shares in the use of many overhead costs. Any type of allocation system will result in locally optimized profitability levels for individual products, but does not address the fact that the overhead cost pool really services the capacity of the company as a whole, not an individual product. For example, the cost of a production scheduler's salary may be allocated to a product based on the amount of scheduling time required to insert it into the production schedule. However, does this added cost really "belong" to the product? If the product were not to be produced at all, the scheduler would still be there, being paid a salary, so it is evident that, for the purposes of the throughput model, there is no point in assigning such overhead costs to products. This means that, because so many costs are not assignable to products, it is valid to only charge totally variable costs to a specific product; all other costs must be paid for by the combined throughput of *all* products produced, since the overhead applies to all of them. In short, we cannot look at the individual profitability levels of products; but rather at how the throughput of all possible product sales, when combined, can be used to offset the total pool of overhead costs.

What we have just seen is that traditional cost accounting methodologies make the multiple mistakes of applying overhead to products for incremental decision-making purposes, ignoring the role of capacity constraints, and not thinking of the entire set of products and related operating expenses as a complete system, for which various combinations of products must be considered in order to determine the highest possible level of profitability. However, we are still dealing with throughput accounting at an abstract level. We will now work through a few examples to clarify the concepts presented thus far.

HIGH-VOLUME, LOW-PRICE SALE DECISIONS USING THROUGHPUT COSTING

The sales manager of the electronics company in our previous example runs into the corporate headquarters, flush from a meeting with the company's largest account, Electro-Geek Stores (EGS). He has just agreed to a deal that drops the price of the 100-watt stereo system by 20 percent, but which guarantees a doubling in the quantity of EGS orders for this product for the upcoming year. The sales manager points out that the company may have to hold off on a few of the smaller-volume production runs of other products, but no problem—the company is bound to earn more money on the extra volume. To test this assumption, the CFO pulls up the throughput model on his computer, shifts the stereo to the top of the priority list, adjusts the throughput to reflect the lower price, and obtains the results shown in Exhibit 2.5.

EXHIBIT 2.5 Throughput Model with Volume Discounts

	Maximum Constraint Time: 62,200				
Product	**Throughput $/Minute of Constraint**	**Required Constraint Usage (min.)**	**Unit Demand/ Actual Production**	**Cumulative Constraint Utilization**	**Cumulative Throughput/ Product**
100-Watt stereo	$4.36	8	5,600/5,600	44,800	$195,328
19″ Color television	8.11	10	1,000/1,000	10,000	81,100
5″ LCD television	6.21	12	500/500	6,000	37,260
50″ High-definition television	5.00	14	3,800/100	1,400	7,000
		Throughput total			$320,688
		Operating expense total			375,000
		Profit			−54,312
		Profit percentage			−16.9%
		Investment			500,000
		Return on investment			−10.9%

To be brief, the sales manager just skewered the company. By dropping the price of the stereo by 20 percent, much of the product's throughput was eliminated, while so much of the capacity constraint was used up that there was little room for the production of any other products that might generate enough added throughput to save the company. This example clearly shows that you must carefully consider the impact on the capacity constraint when debating whether to accept a high-volume sales deal. This is a particularly dangerous area in which to ignore throughput accounting, for the acceptance of a really large-volume deal can hog all of the time of the capacity constraint, eliminating any chance for the company to manufacture other products, and thereby eliminating any chance of offering a wide product mix to the general marketplace.

CAPITAL BUDGETING DECISIONS USING THROUGHPUT COSTING

The production and cost accounting managers have been reviewing a number of workstations in the production area, and find that they can speed up the production capacity of the circuit board insertion machine, which is the next workstation in line *after* the capacity constraint operation. They can double the speed of the insertion machine if the company is willing to invest an extra $28,500. To see if this is a good

EXHIBIT 2.6 Throughput Model and Investment Analysis

	Maximum Constraint Time: 62,200				
Product	**Throughput $/Minute of Constraint**	**Required Constraint Usage (min.)**	**Unit Demand/ Actual Production**	**Cumulative Constraint Utilization**	**Cumulative Throughput/ Product**
19″ Color television	$8.11	10	1,000/1,000	10,000	$ 81,100
100-Watt stereo	7.50	8	2,800/2,800	22,400	168,000
5″ LCD television	6.21	12	500/500	6,000	37,260
50″ High-definition television	5.00	14	3,800/1,700	23,800	119,000
		Throughput total			$405,360
		Operating expense total			375,000
		Profit			30,360
		Profit percentage			7.5%
		Investment			528,500
		Return on investment			5.7%

idea, we once again look at the throughput model. In this instance, the only number we change is the investment amount. The results are shown in Exhibit 2.6.

By making the extra investment, the only change in the company's situation is that its return on investment has dropped by four-tenths of a percent. The reason is that any investment used to improve any operation besides the capacity constraint is a waste of money. *The only thing that a company achieves by making such an investment is improving the efficiency of an operation that will still be controlled by the speed of the capacity constraint*. In reality, the situation is even worse, for any newly upgraded subsidiary operation will now have greater efficiency, and can therefore produce in even greater quantities—all of which will turn into WIP that will pile up somewhere in front of the bottleneck operation, which increases the amount of a company's WIP investment. Thus, an investment in a nonbottleneck operation may actually worsen the overall financial results of the company, because its inventory investment will increase.

This is an important concept for investment analysis, for the typical CFO is trained to examine each investment proposal strictly on its own merits, with no consideration of how the investment fits into the entire production system. If the impact of the capacity constraint were also to be factored into investment analyses, very few of them would ever be approved, because they do not have a positive impact on the capacity constraint.

MAKE VERSUS BUY DECISIONS USING THROUGHPUT COSTING

One of the company's key suppliers has offered to take over the entire production of the 5-inch LCD television, package it in the company's boxes, and drop ship the completed goods directly to the company's customers. The catch is that the company's cost will increase from its current fully burdened rate of $147 (as noted in Exhibit 2.3) to $165, which only leaves a profit of $15. A traditional cost accounting review would state that the company will experience reduced profits of $18 if this outsourcing deal is completed (the difference between the current and prospective costs of $147 and $165. To see if this is a good deal, we turn once again to the throughput model, which is reproduced in Exhibit 2.7. In this exhibit, we have removed the number from the "Cumulative Constraint Utilization" column for the LCD television, since it can now be produced without the use of the capacity constraint. However, we are still able to put a cumulative throughput dollar figure into the final column for this product, since there is some margin to be made by outsourcing it through the supplier. By removing the LCD television's usage of the capacity constraint, we are now able to produce more of the next product in line, which is the high-definition television set. This additional production allows the company to increase the amount of throughput dollars, thereby creating $270 more in profits than was the case before the outsourcing deal.

EXHIBIT 2.7 Throughput Model With an Outsourcing Option

	Maximum Constraint Time: 62,200				
Product	**Throughput $/Minute of Constraint**	**Required Constraint Usage (min.)**	**Unit Demand/ Actual Production**	**Cumulative Constraint Utilization**	**Cumulative Throughput/ Product**
19″ Color television	$8.11	10	1,000/1,000	10,000	$ 81,100
100-Watt stereo	7.50	8	2,800/2,800	22,400	168,000
5″ LCD television	6.21	12	500/500	N/A	7,500
50″ High-definition television	5.00	14	3,800/2,129	29,806	149,030
		Throughput total			$405,630
		Operating expense total			375,000
		Profit			30,630
		Profit percentage			7.5%
		Investment			500,000
		Return on investment			6.1%

Once again, the traditional cost accounting approach would have stated that profits would be lowered by accepting an outsourcing deal that clearly costs more than the product's internal cost. However, by using this deal to release some capacity at the bottleneck, the company is able to earn more money on the production of other products.

SUMMARY

This chapter presented a multitude of financial strategy decisions that a CFO is likely to encounter. It may at first appear that some of these decisions need to be addressed only after long intervals, when there is an immediate need. For example, the decision to offer a particular type of equity is only needed when a new offering is anticipated—right? Not at all. On the contrary, a forward-thinking CFO should review this chapter at regular intervals as part of his or her ongoing strategic planning process, perhaps as much as on a quarterly basis. By doing so, the CFO can constantly review the background information used to make earlier decisions, test them in light of new information, and incrementally (or substantially) revise the decisions. To use the previous example, the CFO can continually evaluate the types of equity being offered, even if there is no immediate need for new equity, in order to see if the firm's capital structure requires revision. Similarly, a regular review of the inventory liquidation decision is needed to test inventory levels in light of any new manufacturing systems or customer service goals, while the early payment discount decision must be reviewed in light of any changes in the corporate cost of capital or short-term cash flow requirements. Similar reasons apply to the regular review of all other decisions noted in this chapter. In short, the CFO must continually test all assumptions used to make key financial decisions, and revise those decisions as needed.

CHAPTER THREE

3 Tax Strategy

THE OBVIOUS OBJECTIVE OF tax strategy is to minimize the amount of cash paid out for taxes. However, this directly conflicts with the general desire to report as much income as possible to shareholders, since more reported income results in more taxes. Only in the case of privately owned firms do these conflicting problems go away, since the owners have no need to impress anyone with their reported level of earnings, and would simply prefer to retain as much cash in the company as possible by avoiding the payment of taxes.

For those CFOs who are intent on reducing their corporation's tax burdens, there are five primary goals to include in their tax strategies, all of which involve increasing the number of differences between the book and tax records, so that reportable income for tax purposes is reduced. The five items are:

1. *Accelerate deductions.* By recognizing expenses sooner, one can force expenses into the current reporting year that would otherwise be deferred. The primary deduction acceleration involves depreciation, for which a company typically uses the modified accelerated cost recovery system (MACRS), an accelerated depreciation methodology acceptable for tax reporting purposes, and straight-line depreciation, which results in a higher level of reported earnings for other purposes.
2. *Take all available tax credits.* A credit results in a permanent reduction in taxes, and so is highly desirable. Unfortunately, credits are increasingly difficult to find, though an entity might qualify for the research and experimental tax credit, which is available to those companies that have increased their research activities over the previous year. The only type of expense that qualifies for this credit is that which is undertaken to discover information that is technical in nature, and its application must be intended for use in developing a new or improved business component for the taxpayer. Also, all of the research activities must be elements

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of a process of experimentation relating to a new or improved function, or which enhance the current level of performance, reliability, or quality. A credit cannot be taken for research conducted after the beginning of commercial production, for the customization of a product for a specific customer, the duplication of an existing process or product, or for research required for some types of software to be used internally.

There are more tax credits available at the local level, where they are offered to those businesses willing to operate in economic development zones, or as part of specialized relocation deals (normally only available to larger companies).

3. *Avoid nonallowable expenses.* There are a few expenses, most notably meals and entertainment, that are completely or at least partially not allowed for purposes of computing taxable income. A key company strategy is to reduce these types of expenses to the bare minimum, thereby avoiding any lost benefits from nonallowable expenses.
4. *Increase tax deferrals.* There are a number of situations in which taxes can be deferred, such as when payments for acquisitions are made in stock or when revenue is deferred until all related services have been performed. This can shift a large part of the tax liability into the future, where the time value of money results in a smaller present value of the tax liability than would otherwise be the case.
5. *Obtain tax-exempt income.* The CFO should consider investing excess funds in municipal bonds, which are exempt from both federal income taxes and the income taxes of the state in which they were issued. The downside of this approach is that the return on municipal bonds is less than the return on other forms of investment, due to their inherent tax savings.

There is no single tax strategy that will be applicable to every company, since the tax laws are so complex that the CFO must construct a strategy that is tailored to the specific circumstances in which the company finds itself. Nonetheless, there are a number of taxation areas that a CFO must be aware of when creating a tax strategy using the preceding five goals. Those areas are listed in alphabetical order through the remainder of this chapter, ranging from the accumulated earnings tax to unemployment taxes. The CFO should carefully peruse these topics to see if they should be incorporated into the company's overall tax strategy.

ACCUMULATED EARNINGS TAX

There is a double tax associated with a company's payment of dividends to investors, because it must first pay an income tax from which dividends *cannot* be deducted as an expense, and then investors must pay income tax on the dividends received. Understandably, closely held companies prefer not to issue dividends in order to avoid the double taxation issue. However, this can result in a large amount of capital accumulating within a company. The Internal Revenue Service (IRS) addresses this issue by imposing an accumulated earnings tax on what it considers to be an excessive amount of earnings that have not been distributed to shareholders.

The IRS considers accumulated earnings of less than $150,000 to be sufficient for the working needs of service businesses, such as accounting, engineering, architecture, and consulting firms. It considers accumulations of anything under $250,000 to be sufficient for most other types of businesses. A company can argue that it needs a substantially larger amount of accumulated earnings if it can prove that it has specific, definite, and feasible plans that will require the use of the funds within the business. Another valid argument is that a company needs a sufficient amount of accumulated earnings to buy back the company's stock that is held by a deceased shareholder's estate.

If these conditions are not apparent, then the IRS will declare the accumulated earnings to be taxable at a rate of 39.6 percent. Also, interest payments to the IRS will be due from the date when the corporation's annual return was originally due. The severity of this tax is designed to encourage organizations to issue dividends on a regular basis to their shareholders, so that the IRS can tax the shareholders for this form of income.

CASH METHOD OF ACCOUNTING

The normal method for reporting a company's financial results is the accrual basis of accounting, under which expenses are matched to revenues within a reporting period. However, for tax purposes, it is sometimes possible to report income under the cash method of accounting. Under this approach, revenue is not recognized until payment for invoices is received, while expenses are not recognized until paid.

The cash basis of accounting can result in a great deal of manipulation from the perspective of the IRS, which discourages its use, but does not prohibit it. As an example of income manipulation, a company might realize that it will have a large amount of income to report in the current year, and will probably have less in the following year. Accordingly, it prepays a number of supplier invoices at the end of the year, so that it recognizes them at once under the cash method of accounting as expenses in the current year. The IRS prohibits this type of behavior under the rule that cash payments recognized in the current period can only relate to current-year expenses. Nonetheless, it is a difficult issue for the IRS to police. The same degree of manipulation can be applied to the recognition of revenue, simply by delaying billings to customers near the end of the tax year. Also, in situations where there is a sudden surge of business at the end of the tax year, possibly due to seasonality, the cash method of accounting will not reveal the sales until the following year, since payment on the invoices from customers will not arrive until the next year. Consequently, the cash method tends to underreport taxable income.

In order to limit the use of this method, the IRS prohibits it if a company has any inventories on hand at the end of the year. The reason for this is that expenditures for inventory can be so large and subject to manipulation at year-end that a company could theoretically alter its reported level of taxable income to an enormous extent. The cash basis is also not allowable for any C corporation, partnership that has a C corporation for a partner, or a tax shelter. However, within these restrictions, it is allowable for an entity with average annual gross receipts of $5 million or less for the three tax years ending

with the prior tax year, as well as for any personal service corporation that provides at least 95 percent of its activities in the services arena.

The IRS imposes some accrual accounting concepts on a cash-basis organization in order to avoid some of the more blatant forms of income avoidance. For example, if a cash-basis company receives a check at the end of its tax year, it might be tempted not to cash the check until the beginning of the next tax year, since this would push the revenue associated with that check into the next year. To avoid this problem, the IRS uses the concept of *constructive receipt*, which requires one to record the receipt when it is made available to one without restriction (whether or not it is actually recorded on the company's books at that time). Besides the just-noted example, this would also require a company to record the interest on a bond that comes due prior to the end of the tax year, even if the associated coupon is not sent to the issuer until the next year.

INVENTORY VALUATION

It is allowable to value a company's inventory using one method for book purposes and another for tax purposes, except in the case of the last-in first-out (LIFO) inventory valuation method. In this case, the tax advantages to be gained from the use of LIFO are so significant that the IRS requires a user to employ it for both book and tax purposes. Furthermore, if LIFO is used in any one of a group of financially related companies, the entire group is assumed to be a single entity for tax reporting purposes, which means that they must all use the LIFO valuation approach for both book and tax reporting. This rule was engendered in order to stop the practice of having LIFO-valuation companies roll their results into a parent company that used some other method of reporting, thereby giving astute companies high levels of reportable income and lower levels of taxable income at the same time.

MERGERS AND ACQUISITIONS

A key factor to consider in corporate acquisitions is the determination of what size taxable gain will be incurred by the seller (if any), as well as how the buyer can reduce the tax impact of the transaction in the current and future years. In this section, we will briefly discuss the various types of transactions involved in an acquisition, the tax implications of each transaction, and whose interests are best served by the use of each one.

There are two ways in which an acquisition can be made, each with different tax implications. First, the acquirer can purchase the acquiree's stock, which might trigger a taxable gain to the seller. Second, the acquirer can purchase the acquiree's assets, which triggers a gain on sale of the assets, as well as another tax to the shareholders of the selling company, who must recognize a gain when the proceeds from liquidation of the business are distributed to them. Because of the additional taxation, a seller will generally want to sell a corporation's stock rather than its assets.

When stock is sold to the buyer in exchange for cash or property, the buyer establishes a tax basis in the stock that equals the amount of the cash paid or fair market value of the property transferred to the seller. Meanwhile, the seller recognizes a gain or

loss on the eventual sale of the stock that is based on its original tax basis in the stock, which is subtracted from the ultimate sale price of the stock.

It is also possible for the seller to recognize no taxable gain on sale of a business if it takes some of the acquiring company's stock as full compensation for the sale. However, there will be no tax only if *continuity of interest* in the business can be proven by giving the sellers a sufficient amount of the buyer's stock to prove that they have a continuing financial interest in the buying company. A variation on this approach is to make an acquisition over a period of months, using nothing but voting stock as compensation to the seller's shareholders, but for which a clear plan of ultimate control over the acquiree can be proven. Another variation is to purchase at least 80 percent of the fair market value of the acquiree's assets solely in exchange for stock.

When only the assets are sold to the buyer, the buyer can apportion the total price among the assets purchased, up to their fair market value (with any excess portion of the price being apportioned to goodwill). This is highly favorable from a taxation perspective, since the buyer has now adjusted its basis in the assets substantially higher; it can now claim a much larger accelerated depreciation expense in the upcoming years, thereby reducing both its reported level of taxable income and tax burden. From the seller's perspective, the sale price is allocated to each asset sold for the purposes of determining a gain or loss; as much of this as possible should be characterized as a capital gain (since the related tax is lower) or as an ordinary loss (since it can offset ordinary income, which has a higher tax rate).

The structuring of an acquisition transaction so that no income taxes are paid must have a reasonable business purpose besides the avoidance of taxes. Otherwise, the IRS has been known to require tax payments on the grounds that the structure of the transaction has no reasonable business purpose besides tax avoidance. Its review of the substance of a transaction over its form leads the CFO to consider such transactions in the same manner, and to restructure acquisition deals accordingly.

There is a specialized tax reduction available for the holders of stock in a small business, on which they experience a gain when the business is sold. Specifically, they are entitled to a 50 percent reduction in their reportable gain on sale of that stock, though it is limited to the greater of a $10 million gain or 10 times the stockholder's basis in the stock. This exclusion is reserved for C corporations, and only applies to stock that was acquired at its original issuance. There are a number of other exclusions, such as its inapplicability to personal service corporations, real estate investment trusts, domestic international sales corporations, and mutual funds. This type of stock is called *qualified small business stock*. The unique set of conditions surrounding this stock make it clear that it is intended to be a tax break specifically for the owners of small businesses.

The exact forms of various types of acquisitions are noted in greater detail in the ''Types of Acquisitions'' section of Chapter 22, ''Mergers and Acquisitions.''

NET OPERATING LOSS CARRYFORWARDS

Since income taxes can be the largest single expense on the income statement, the CFO should carefully track the use and applicability of net operating loss (NOL) carryforwards

that were created as the result of reported losses in prior years. An NOL may be carried back and applied against profits recorded in the 2 preceding years, with any remaining amount being carried forward for the next 20 years, when it can be offset against any reported income. If there is still an NOL left after the 20 years have expired, then the remaining amount can no longer be used. One can also irrevocably choose to ignore the carryback option and only use it for carryforward purposes. The standard procedure is to apply all of the NOL against the income reported in the earliest year, with the remainder carrying forward to each subsequent year in succession until the remaining NOL has been exhausted. If an NOL has been incurred in each of multiple years, then they should be applied against reported income (in either prior or later years) in order of the first NOL incurred. This rule is used because of the 20-year limitation on an NOL, so that an NOL incurred in an earlier year can be used before it expires.

The NOL is a valuable asset, since it can be used for many years to offset future earnings. A company buying another entity that has an NOL will certainly place a high value on the NOL, and may even buy the entity strictly in order to use its NOL. To curtail this type of behavior, the IRS has created the Section 382 limitation, under which there is a limitation on its use if there is at least a 50 percent change in the ownership of an entity that has an unused NOL. The limitation is derived through a complex formula that essentially multiplies the acquired corporation's stock times the long-term tax-exempt bond rate. To avoid this problem, a company with an unused NOL that is seeking to expand its equity should consider issuing straight preferred stock (no voting rights, no conversion privileges, and no participation in future earnings) in order to avoid any chance that the extra equity will be construed as a change in ownership.

If a company has incurred an NOL in a short tax year, it must deduct the NOL over a period of six years, starting with the first tax year after the short tax year. This limitation does not apply if the NOL is for $10,000 or less, or if the NOL is the result of a short tax year that is at least 9 months long and is less than the NOL for a full 12-month tax year beginning with the first day of the short tax year. This special NOL rule was designed to keep companies from deliberately changing their tax years in order to create an NOL within a short tax year. This situation is quite possible in a seasonal business where there are losses in all but a few months. Under such a scenario, a company would otherwise be able to declare an NOL during its short tax year, carry back the NOL to apply it against the previous two years of operations, and receive a rebate from the IRS.

NEXUS

A company might have to complete many more tax forms than it would like, as well as remit taxes to more government entities, if it can be established that it has nexus within a government's area of jurisdiction. Consequently, it is very important to understand how nexus is established.

The rules vary by state, but nexus is generally considered to have occurred if a company maintains a facility of any kind within a state, or if it pays the wages of someone within that state. In some locales, the definition is expanded to include the transport of goods to customers within the state on company-owned vehicles (though

nexus is not considered to have occurred if the shipment is made by a third-party freight carrier). A more liberal interpretation of the nexus rule is that a company has nexus if it sends sales personnel into the state on sales calls or training personnel there to educate customers, even though they are not permanently based there. To gain a precise understanding of how the nexus rules are interpreted by each state, it is best to contact the department of revenue at each state government.

A recent issue that is still being debated in the courts is that Internet sales may be considered to have occurred within a state if the server used to process orders or store data is kept within that state, even if the server is only rented from an Internet hosting service.

If nexus has been established, a company must file to do business within the state, which requires a small fee and a refiling once every few years. In addition, it must withhold sales taxes on all sales within the state. This is the most laborious issue related to nexus, since sales taxes may be different for every city and county within each state, necessitating a company to keep track of potentially thousands of different sales tax rates. Also, some states may require the remittance of sales taxes every month, though this can be reduced to as little as once a year if the company predicts that it will have minimal sales taxes to remit, as noted on its initial application for a sales tax license.

Some states or local governments will also subject a company to property or personal property taxes on all assets based within their jurisdictions, which necessitates even more paperwork.

Though the amount of additional taxes paid might not be that great, the key issue related to the nexus concept is that the additional time required to track tax liabilities and file forms with the various governments might very well require additional personnel in the accounting department. This can be a major problem for those organizations in multiple states, and should be a key planning issue when determining the capacity of the accounting department to process tax-related transactions. Some organizations with a number of subsidiaries will avoid a portion of the tax filing work by only accepting the nexus concept for those subsidiaries that are clearly established within each governmental jurisdiction, thereby avoiding the tax-filing problems for all other legal entities controlled by the parent corporation.

PROJECT COSTING

A company that regularly develops large infrastructure systems, such as enterprise resource planning (ERP) systems, for its own use will usually cluster all costs related to that project into a single account and then capitalize its full cost, with amortization occurring over a number of years. Though this approach will certainly increase reported income over the short term, it also increases income taxes. If the avoidance of income taxes is a higher priority for the CFO than reported profits, then it would be useful to separate the various components of each project into different accounts, and expense those that more closely relate to ongoing operational activities. For example, a strong case can be made for expensing all training associated with a major system installation, on the grounds that training is an ongoing activity.

Another approach is to charge subsidiaries for the cost of a development project, especially if the charging entity is located in a low-tax region and the subsidiaries are in high-tax regions. This transfer pricing approach would reduce the reported income in high-tax areas, effectively shifting that income to a location where the tax rate is lower. However, these cost-shifting strategies must be carefully documented with proof that the systems are really being used by subsidiaries and that the fees charged are reasonable.

A variation on the last approach is to create a data center in a tax haven that stores and analyzes company data, and then issues reports back to other corporate divisions for a substantial fee. This approach has to involve more than simply locating a file server in a low-tax location, since the IRS will claim that there is no business purpose for the arrangement. Instead, a small business must be set up around the data center that provides some added value to the information being collected and disseminated. This approach is especially attractive if a company acquires another entity with a data center in a low-tax location and simply shifts its own facilities to the preestablished location.

S CORPORATION

The S corporation is of considerable interest to the CFO, because it generally does not pay taxes. Instead, it passes reported earnings through to its shareholders, who report the income on their tax returns. This avoids the double taxation that arises in a C corporation, where a company's income is taxed, and then the dividends it issues to its shareholders are taxed as income to them a second time. The amount of income is allocated to each shareholder on a simple per-share basis. If a shareholder has held stock in the corporation for less than a full year, then the allocation is on a per-share, per-day basis. The per-day part of this calculation assumes that a shareholder still holds the stock through and including the day when the stock is disposed of, while a deceased shareholder will be assumed to retain ownership through and including the day that he or she dies.

An S corporation has unique taxation and legal protection aspects that make it an ideal way to structure a business if there are a small number of shareholders. Specifically, it can only be created if there are no more than 75 shareholders, if only one class of stock is issued, and if all shareholders agree to the S corporation status. All of its shareholders must be either citizens or residents of the United States. Shareholders are also limited to individuals, estates, and some types of trusts and charities. Conversely, this means that C corporations and partnerships cannot be shareholders in an S corporation. Because S corporations are required to issue only a single class of stock, some organizations will choose not to organize in this manner, for it does not allow for preferential returns or special voting rights by some shareholders.

There are a few cases where an S corporation can owe taxes. For example, it can be taxed if it has accumulated earnings and profits from an earlier existence as a C corporation and its passive income is more than 25 percent of total gross receipts. It can also be liable for taxes on a few types of capital gains, recapture of the old investment tax credit, and LIFO recapture. If any of these taxes apply, then the S corporation must make

quarterly estimated income tax payments. By contrast, an S corporation is not subject to the alternative minimum tax.

If the management team of an S corporation wants to terminate its S status, the written consent of more than 50 percent of the shareholders is required, as well as a statement from the corporation to that effect. If the corporation wants to become an S corporation at a later date, there is a five-year waiting period from the last time before it can do so again, unless it obtains special permission from the IRS.

SALES AND USE TAXES

Sales taxes are imposed at the state, county, and city level—frequently by all three at once. It is also possible for a special tax to be added to the sales tax and applied to a unique region, such as for the construction of a baseball stadium or to support a regional mass transit system. The sales tax is multiplied by the price paid on goods and services on transactions occurring within the taxing area. However, the definition of goods and services that are required to be taxed will vary by state (not usually at the county or city level), and so must be researched at the local level to determine the precise basis of calculation. For example, some states do not tax food sales, on the grounds that this is a necessity whose cost should be reduced as much as possible, while other states include it in their required list of items to be taxed.

A company is required to charge sales taxes to its customers and remit the resulting receipts to the local state government, which will split out the portions due to the local county and city governments and remit these taxes on the company's behalf to those entities. If the company does not charge its customers for these taxes, it is still liable for them, and must pay the unbilled amounts to the state government, though it has the right to attempt to bill its customers after the fact for the missing sales taxes. This can be a difficult collection chore, especially if sales are primarily over the counter, where there are few transaction records that identify the customer. Also, a company is obligated to keep abreast of all changes in sales tax rates and charge its customers for the correct amount; if it does not do so, then it is liable to the government for the difference between what it actually charged and the statutory rate. If a company overcharges its customers, the excess must also be remitted to the government.

The state in which a company is collecting sales taxes can decide how frequently it wants the company to remit taxes. If there are only modest sales, the state may decide that the cost of paperwork exceeds the value of the remittances, and will only require an annual remittance. It is more common to have quarterly or monthly remittances. The state will review the dollar amount of remittances from time to time, and adjust the required remittance frequency based on this information.

All government entities have the right to audit a company's books to see if the proper sales taxes are being charged, and so a company can theoretically be subject to three sales tax audits per year—one each from the city, county, and state revenue departments. Also, since these audits can come from any taxing jurisdiction in which a company does business, there could literally be thousands of potential audits.

The obligation to collect sales taxes is based on the concept of nexus, which was covered earlier in this chapter. If nexus exists, then sales taxes must be collected by the seller. If not, the recipient of purchased goods instead has an obligation to compile a list of items purchased and remit a use tax to the appropriate authority. The use tax is in the same amount as the sales tax. The only difference is that the remitting party is the buyer instead of the seller. Use taxes are also subject to audits by all taxing jurisdictions.

If the buyer of a company's products is including them in its own products for resale to another entity, then the buyer does not have to pay a sales tax to the seller. Instead, the buyer will charge a sales tax to the buyer of *its* final product. This approach is used under the theory that a sales tax should only be charged one time on the sale of a product. However, it can be a difficult chore to explain the lack of sales tax billings during an audit, so sales taxes should only be halted if a buyer sends a sales tax exemption form to the company, which should then be kept on file. The sales tax exemption certificate can be named a resale certificate instead, depending on the issuing authority. It can also be issued to government entities, which are generally exempt from sales and use taxes. As a general rule, sales taxes should always be charged unless there is a sales tax exemption certificate on file—otherwise, the company will still be liable for the remittance of sales taxes in the event of an audit.

TRANSFER PRICING

Transfer pricing is a key tax consideration, because it can result in the permanent reduction of an organization's tax liability. The permanent reduction is caused by the recognition of income in different taxing jurisdictions that have different tax rates.

The basic concept behind the use of transfer pricing to reduce one's overall taxes is that a company transfers its products to a division in another country at the lowest possible price if the income tax rate is lower in the other country, or at the highest possible price if the tax rate is higher. By selling to the division at a low price, the company will report a very high profit on the final sale of products in the other country, which is where that income will be taxed at a presumably lower income tax rate.

For example, Exhibit 3.1 shows a situation in which a company with a location in countries Alpha and Beta has the choice of selling goods either in Alpha or transferring them to Beta and selling them there. The company is faced with a corporate income tax rate of 40 percent in country Alpha. To permanently avoid some of this income tax, the company sells its products to another subsidiary in country Beta, where the corporate income tax rate is only 25 percent. By doing so, the company still earns a profit ($60,000) in country Alpha, but the bulk of the profit ($125,000) now appears in country Beta. The net result is a consolidated income tax rate of just 28 percent.

The IRS is well aware of this tax avoidance strategy, and has developed tax rules that do not eliminate it, but that will reduce the leeway that a CFO has in altering reportable income. Under Section 482 of the IRS Code, the IRS's preferred approach for developing transfer prices is to use the market rate as its basis. However, very few products can be reliably and consistently compared to the market rate, with the exception of commodities, because there are costing differences between them. Also,

EXHIBIT 3.1 Income Tax Savings from Transfer Pricing

	Country Alpha Location	Country Beta Location
Sales to subsidiary:		
Revenue	$1,000,000	
Cost of goods sold	$ 850,000	
Profit	$ 150,000	
Profit percentage	15%	
Sales outside of company:		
Revenue		$1,500,000
Cost of goods sold		$1,000,000
Profit		$ 500,000
Profit percentage		33%
Income tax percentage	40%	25%
Income tax	$ 60,000	$ 125,000
Consolidated income tax	$ 185,000	
Consolidated income tax percentage	28%	

in many cases, products are so specialized (especially components that are custom-designed to fit into a larger product) that there is no market rate against which they can be compared. Even if there is some basis of comparison between a product and the average market prices for similar products, the CFO still has some leeway in which to alter transfer prices, because the IRS will allow one to add special charges that are based on the cost of transferring the products, or extra fees, such as royalty or licensing fees that are imposed for the subsidiary's use of the parent company's patents or trademarks, or for administrative charges related to the preparation of any documentation required to move products between countries. It is also possible to slightly alter the interest rates charged to subsidiaries (though not too far from market rates) for the use of funds sent to them from the parent organization.

If there is no basis on which to create prices based on market rates, then the IRS's next most favored approach is to calculate the prices based on the *work-back method*. Under this approach, begin at the end of the sales cycle by determining the price at which a product is sold to an outside customer, and then subtract the subsidiary's standard markup percentage and its added cost of materials, labor, and overhead, which results in the theoretical transfer price. The work-back method can result in a wide array of transfer prices, since a number of different costs can be subtracted from the final sale price, such as standard costs, actual costs, overhead costs based on different allocation measures, and overhead costs based on cost pools that contain different types of costs.

If that approach does not work, then the IRS's third most favored approach is the *cost-plus method*. As the name implies, this approach begins at the other end of the production process and compiles costs from a product's initiation point. After all costs

are added before the point of transfer, add a profit margin to the product, thereby arriving at a transfer cost that is acceptable to the IRS. However, once again, the costs that are included in a product are subject to the same points of variation that were noted for the work-back method. In addition, the profit margin added should be the standard margin added for any other company customer, but can be quite difficult to determine if there are a multitude of volume discounts, seasonal discounts, and so on. Consequently, the profit margin added to a product's initial costs can be subject to a great deal of negotiation.

An overriding issue to consider, no matter what approach is used to derive transfer prices, is that taxing authorities can become highly irritated if a company continually pushes the outer limits of acceptable transfer pricing rules in order to maximize its tax savings. When this happens, a company can expect continual audits and penalties on disputed items, as well as less favorable judgments related to any taxation issues. Consequently, it makes a great deal of sense to consistently adopt pricing policies that result in reasonable tax savings, are fully justifiable to the taxing authorities of all involved countries, and that do not push the boundaries of acceptable pricing behavior.

Another transfer pricing issue that can modify a company's pricing strategy is the presence of any restrictions on cash flows out of a country in which it has a subsidiary. In these instances, it might be necessary to report the minimum possible amount of taxable income at the subsidiary, irrespective of the local tax rate. The reason is that the only way for a company to retrieve funds from the country is through the medium of an account receivable, which must be maximized by billing the subsidiary the highest possible amount for transferred goods. In this case, tax planning takes a back seat to cash-flow planning.

Yet another issue that might drive a company to set pricing levels that do not result in reduced income taxes is that a subsidiary might have to report high levels of income in order to qualify for a loan from a local credit institution. This is especially important if the country in which the subsidiary is located has restrictions on the movement of cash, so that the parent company would be unable to withdraw loans that it makes to the subsidiary. As was the case for the last item, cash-flow planning is likely to be more important than income tax reduction.

A final transfer pricing issue to be aware of is that the method for calculating taxable income varies, depending on which country the income is earned. This may falsely lead you to believe that another country has a lower tax rate. A closer examination of how taxable income is calculated might reveal that some expenses are restricted or not allowed at all, resulting in an actual tax rate that is much higher than originally expected. Consultation with a tax expert for the country in question prior to setting up any transfer pricing arrangements is the best way to avoid this problem.

UNEMPLOYMENT TAXES

Both the state and federal governments will charge a company a fixed percentage of its payroll each year for the expense of unemployment funds that are used to pay former employees who have been released from employment. The state governments administer

the distribution of these funds and will compile an experience rating on each company, based on the number of employees it has laid off in the recent past. Based on this experience rating, it can require a company to submit larger or smaller amounts to the state unemployment fund in future years. This can become a considerable burden if a company has a long history of layoffs. Consequently, consider the use of temporary employees or outsourcing if this will give a firm the ability to retain a small number of key employees and avoid layoffs while still handling seasonal changes in workloads. Also, if a company is planning to acquire another entity, but plans to lay off a large number of the acquiree's staff once the acquisition is completed, it might make more sense to only acquire the acquiree's assets and selectively hire a few of its employees, thereby retaining a pristine unemployment experience rating with the local state government.

The federal unemployment tax is imposed on a company if it has paid employees at least $1,500 in any calendar quarter, or had at least one employee for some portion of a day within at least 20 weeks of the year. In short, nearly all companies will be required to remit federal unemployment taxes. For the 2010 calendar year, the tax rate is 6.2 percent of the first $7,000 paid to each employee. This tends to concentrate most federal unemployment tax remittances into the first quarter of the calendar year. In many states, you take a credit against the federal unemployment tax for up to 5.4 percent of taxable wages, which results in a net federal unemployment tax of only 0.8 percent.

If a company is shifting to a new legal entity, perhaps because of a shift from a partnership to a corporation, or from an S corporation to a C corporation, it will have to apply for a new unemployment tax identification number with the local state authorities. This is a problem if the organization being closed down had an unusually good experience rating, since the company will be assigned a poorer one until a new experience rating can be built up over time, which will result in higher unemployment taxes in the short term. To avoid this problem, contact the local unemployment taxation office to request that the old company's experience rating be shifted to the new tax ID number.

SUMMARY

This chapter presented a set of general tax-planning goals, and then proceeded directly into a series of specific tax topics that should be considered when creating and updating a tax strategy. For example, the presence of an accumulated earnings tax might force a CFO to recommend the issuance of enough dividends to avoid the tax, while the "Mergers and Acquisitions" section shows how the CFO must structure an acquisition in order to minimize the incurrence of income taxes for all parties. From a tax-processing perspective, a firm understanding of the "Nexus" and "Sales and Use Taxes" sections is crucial for maximizing the efficiency with which tax forms are filed, while the CFO should thoroughly understand the transfer pricing topic in order to realize permanent reductions in federal income taxes. Thus, the CFO must have a broad-based knowledge of a variety of taxation topics, which, in turn, allows her to construct a tax strategy that considers all aspects of company operations, financing methods, locations, and corporate structure.

CHAPTER FOUR

4 Information Technology Strategy

THE CFO IS SOMETIMES assigned to supervise the information technology (IT) function. Even if she is not, the CFO should have a strong interest in this area, since it can require a great deal of capital investment. Companies tend to invest too much money in IT, or at least spend it on the wrong projects, because they do not invest the time up front to determine how IT can most effectively dovetail into the overall business strategy. In this chapter, we will look at why IT strategy is important to the CFO, how to properly develop an IT strategy, and what specific IT projects are likely to be of value, depending on the general type of business strategy that a company intends to follow.

REASONS FOR DEVISING AN INFORMATION TECHNOLOGY STRATEGY

The standard corporate approach to the development of an IT strategy is to continue the funding of existing projects, and to approve funding for additional projects as presented by the IT manager until a predetermined cap on expenditures is reached. This approach completely avoids any linkage of IT investments to a company's overall business strategy, likely resulting in lost opportunities to improve the business. However, there are several IT decision points at which a CFO could insert the need for a complete evaluation of the IT strategy, thereby creating a closer fit between IT projects and the general business direction:

- *When merging entities.* When a company acquires another company, there will be questions about whose systems will be used for various functions, or whether systems should be kept separate. This is an excellent time to conduct a thorough review of the reasons why either company's systems should be used, allowing for the ''best of breed'' to be retained.

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- *When major cost reductions are needed.* When a company finds itself losing so much money that it must conduct a detailed review of all costs companywide, this is a good excuse for an IT strategy review, though the review will be heavily skewed in the direction of cost reductions rather than toward how strategy can be used to enhance the business.
- *When there is an IT project request overload.* This is one of the most common reasons for creating an IT strategy. The IT manager is completely overwhelmed by the number of requests being dropped on his department, and complains to senior management for assistance in sorting through the requests; this results in an IT strategy that is primarily used as a sorting device for picking the most necessary projects.
- *When current IT systems are failing.* When in-house legacy systems are beginning to fail for any number of reasons—loss of key programmers, excessive transaction volume, and so on—the CFO can push for the development of an IT strategy to use as a framework for the creation of replacement systems. The only problem is that the systems may be failing so rapidly that the strategy development process is rushed.
- *When the company's organizational structure is being changed.* From time to time, senior management might decide to reorganize a company based on geographical locations, new managers running different functions, and so on. The existing IT systems might be overburdened by the information requirements of the new structure, which is an ideal time for an IT strategy review.
- *When existing systems interfere with functional efficiency.* This problem arises most frequently in companies whose main target is to continually reduce costs in order to be the low-cost producer. They will eventually reduce costs to the point where the procedures surrounding the existing IT systems are interfering with further cost improvements, resulting in a strategy review just to see how the systems can be altered from a cost-reduction standpoint.
- *When new management is hired.* When a new CEO is installed and brings in her own staff to run a company, she may conduct a complete "spring cleaning" of the entire company, which may include existing IT systems. This is an excellent opportunity for an IT strategy review, since new directions can be determined without any interference from the old management team.

No matter which of these circumstances is used as an excuse to create an IT strategy, the CFO must be sure to incorporate it into an ongoing schedule of IT strategy reviews, so that incremental adjustments can be made to the plan over time as the overall business strategy changes.

DEVELOPING THE INFORMATION TECHNOLOGY STRATEGY

The first step in the development of an IT strategy is the formation of an IT steering committee that is given responsibility for creating the strategy. It is essential that this group comprise people from all key functional areas of the company, so that its decisions

have a better chance of being accepted by the entire company. The CFO should attend these meetings, as should the manager of the IT function. However, there should be no additional IT representatives, unless required for special information, since a heavy IT-weighting will tend to skew decisions in the direction of what is technically needed, rather than what the entire business needs.

The committee is responsible for creating IT strategies and prioritizing IT projects based on those strategies, but must forward this work to the executive committee for final approval. It is also responsible for the review and approval of new IT projects that are submitted from around the company. In order to avoid having the committee be bogged down by the review of *all* requested IT projects, it should limit its scope to reviews of only the largest and most expensive projects, letting the IT manager handle all smaller issues.

Once assembled, the steering committee should first spend considerable time learning about the overall corporate strategies, which it will use to formulate the IT strategy. This initial learning stage can take as little as one day if a formal strategy document has already been created. However, it is more likely that the company operates without one, in which case the committee must interview members of senior management to gather information that they can then assemble into a strategy.

The process of learning about the business strategy will likely require a considerable amount of education about the general operating framework of the company. For example, the committee members should know if the company uses make-to-order or make-to-stock production, whether it uses single or multiple warehouses, back flushes its production records, processes transactions in multiple currencies, has special government reporting requirements, outsources various functions, swaps product designs with its suppliers, and so on. This level of detailed knowledge about operations is crucial for later determining the types of IT projects that can be implemented to most effectively assist the company's overall strategy.

With a general business strategy in hand, the committee can then create an IT strategy that supports the business strategy by shoring up weak areas that are considered important to the business, as well as by increasing the capabilities of areas where the company wishes to maintain a strong competitive posture. To this end, the strategy should include a detailed list of corporate strengths and weaknesses, and how the IT strategy will impact them. In addition, it should anticipate the need to compete with the IT projects currently under development at competing firms, to the extent that this information can be ascertained. Another approach for developing possible strategies is to conduct a benchmarking review of other companies' IT projects, possibly of organizations located completely outside the company's industry. For ideas about what types of strategies can be implemented, see the later ''Specific Applications'' section. This step is an ongoing process that is constantly updated in light of changes to the general strategy, and so tends to require incremental adjustments to the priorities assigned to various projects.

With an IT strategy in place, the steering committee must next determine what specific IT projects need to be completed in order to implement the strategy. This requires a detailed knowledge of precisely what IT functionality is already present, as well as the types of projects required to bridge the gap between current and desired

capabilities. The analysis should also consider the technical ability of the in-house IT department in order to understand how much outside assistance might be required for certain projects. This review of in-house talent must break down the capabilities of personnel into such categories as subject matter experts, process experts, application development experts, and systems maintenance personnel. By doing so, the committee can spot those areas in which a lack of personnel skills could make it exceedingly difficult to implement a new project. The committee should also determine the proportion of IT staff time currently being used to maintain existing IT systems, since this tends to absorb most staff time, leaving little for new development efforts of any kind. This problem can sometimes be overcome by the judicious replacement of custom-developed software with packaged software that is supported by an outside party, thereby reducing the maintenance efforts of the IT department.

Further, the committee should include a detailed examination of the projects currently under development and the amount of resources and time required to complete them. In many cases, it makes sense to complete projects that are already under development, even if they fall well outside the requirements of the IT strategy, simply because they require minimal effort to finish.

This detailed level of review can be a massive effort, especially if the company has many product lines, locations, or divisions. In order to complete at least some portion of the work as soon as possible, the committee can limit its scope by focusing on only specific areas. The limitation criterion can be whether the resulting information will be critical to business operations, if it will be used by more than one functional area, or if it results in information sharing with other business partners. Of course, the overriding criterion will be if the business strategy states that a specific target area is considered the primary opportunity for the business as a whole. If the IT plan's scope is limited in this manner, the committee should prioritize the value of the remaining parts of the business and add them to the IT strategy as time allows.

Even with an IT strategy in place that clearly defines what types of projects should be approved, it will still be difficult for the committee to assign exact priorities to different IT projects, due to the wide variety of possible projects. Any or all of the following techniques can be used to accomplish this prioritization:

- *Building-block approach.* Assign high priorities to those projects needed as building blocks for later projects that cannot be completed until the first projects are implemented. For example, a companywide network must be completed before an enterprise resource planning (ERP) system can be installed throughout a company.
- *Portfolio approach.* When cash resources are reduced, a company tends to cancel all high-risk IT projects and focus its efforts on just those with a clear and likely payoff. However, this approach runs the risk of never achieving a breakthrough technical advantage. A better approach is to identify those projects with potentially high payoffs and assign a small proportion of the IT budget to them, even if there is a strong risk of failure.
- *Competing standards approach.* If a project requires the use of one of a set of competing industry standards, it might be worthwhile to delay the implementation until it becomes more clear as to which of the standards will emerge as the

dominant one. Otherwise, a company might find itself having invested funds in a technology for which there is a shrinking base of support expertise.

- *Forced ranking.* Sequentially compare the value of each project to every other proposed project in order to create a ranking. For example, Project A is compared to all other proposed projects. If the committee considers it to be the top priority, it is assigned that ranking. Then the committee individually compares all remaining projects to determine the next most critical project. Once priorities have been assigned using this approach, the committee takes another pass at the list and compares each project on it to the one immediately below, and reiterates this process until it is satisfied with the ranking.
- *Payoff approach.* Every project proposal should be accompanied by a cost-benefit proposal. Though the committee can choose to ignore this information in the interests of long-term strategy, the ability of an IT project to generate a profit, especially when prioritizing among short-term projects, should not be ignored.

Of the prioritization methods just described, give consideration to the forced ranking approach, but within the larger framework of specific business strategies. For example, if a massive jump in sales through the use of a more efficient, wireless-enabled sales force is considered the primary business strategy, then rank all key projects related to this strategy higher than those of the next most important strategy. Then use the building-block prioritization approach to determine the initial prioritization of projects within each group of projects, and then conduct a forced ranking on the remaining projects.

Throughout the process of defining the IT strategy, conducting a gap analysis, and assigning priorities to specific projects, the steering committee must be mindful of the need for in-depth communication of its activities with the executive committee, the IT department, and the company as a whole. This is necessary to ensure the highest level of support and cooperation by all parties when it comes time to implement the set of projects that the steering committee recommends to the executive committee.

TECHNICAL STRATEGIES

The primary point of this chapter is the development of a list of IT projects that will support a company's overall business strategy. Nonetheless, the IT department itself is likely to have a few thoughts about the underlying structure of IT systems to be used. These are technical issues that a CFO is not likely to be conversant with, so keep the following few points in mind when discussing technical strategies with the IT staff:

- *Use scaleable components.* If a company has any prospects of expanding, it will eventually run the risk of outgrowing its existing computer infrastructure. Thus, the CFO should ask about the scalability of any new systems that the IT staff wants to install. A truly scaleable system should easily handle substantially more transaction volume, or at least do so through a logical upgrade path.
- *Use open standards.* The CFO should avoid the use of proprietary systems whenever possible, since these systems are linked to the fortunes of their suppliers. They also

tend to be more expensive than open systems, and attract fewer independent developers who provide add-on applications. This tends to be a long-term and sometimes expensive goal, and so must be reviewed in light of other targets and how this goal will impact them.

- *Use the same architecture for as long as possible.* Despite the preceding recommendation to switch to open standards, the CFO also faces the problem of keeping the IT investment as low as is prudent. One approach for doing so is to force the IT department to prolong the use of existing standards for as long as possible. Once the architecture changes, a slew of related expenses will arise, such as training, software, and hardware, so the CFO should force the IT staff to carefully consider the likely longevity of any IT architecture it wants to adopt.
- *Use packaged software.* Many companies suffer from the ''not invented here'' syndrome, and prefer to sink large amounts of cash into the development of IT systems that could have been purchased from a supplier. The advantage of using a packaged system is its lower cost, support by the supplier, and relative absence of bugs (since many customers are testing it and feeding back their comments to the supplier). Packaged software should only be avoided when a prospective application is so company-specific that no packaged solutions are available.
- *Use an enterprise resources planning (ERP) system.* Even if a company installs packaged software, as just described, it might install different packages in each part of the company. Each of these packages might be written in a different software language, operate on a different hardware platform, require special maintenance skills, or not have an interface with other systems within the company. The result is silos of information for which manual or customized interfaces must be used. An alternative is to install a single ERP system that addresses the computing needs of all functions within the company. Though highly complex to install and operate, an ERP system uses a single underlying database so that information can be more easily exchanged throughout the company.
- *Use object-oriented programming.* When in-house programming must be used, the CFO should emphasize object-oriented programming, which allows programmers to easily move blocks of code into different applications and link them together again. This approach greatly reduces the amount of programming required on an ongoing basis.
- *Use few suppliers.* IT suppliers love to pin the blame for a system failure on other suppliers. The obvious solution is to concentrate IT purchases with the smallest possible number of suppliers. Another reason for using few suppliers is that volume purchases can result in purchase discounts. If there is no way to avoid hiring many suppliers, then the CFO should at least designate a lead supplier, to whom other suppliers act as subcontractors and who is responsible for fixing system problems.
- *Use relational databases.* The most efficient method for storing data is the relational database, which is a set of separate tables linked by indexing fields, so that information can be easily cross-referenced and extracted without storing the same data in multiple locations. Using a relational database allows a company to store a specific data item only once, which makes it much easier to update and maintain.

- *Use dashboards.* The management team is most likely receiving the bulk of its operational and financial information at lengthy intervals from the accounting department, probably no more frequently than once a week, if not once a month. A better approach is to push selected operational information out from the corporate databases to managers' computers with dashboards. A dashboard is a computer display that summarizes key operational and financial information that is as current as the underlying database information. Thus, a dashboard can present real-time information. The more comprehensive dashboards also include a drill-down capability, so that managers can view more detailed information.
- *Centralize only the most important information.* Data warehouses are touted as a wonderful way to centralize and organize all of a company's key information, but they are also expensive and labor-intensive to create and maintain. Consequently, examine the need to store various types of information in this repository, as well as the incremental cost of doing so, and only include those data items for which a clear value can be seen.

There are many more considerations in the development of a technical strategy that supports the overall IT strategy, but they are well beyond the scope of this book. The bullet points noted here are most useful to the CFO as general guidelines to consider when discussing technical strategy issues with the IT department.

SPECIFIC APPLICATIONS

Thus far, we have looked at the general structure that a CFO should pursue when developing an IT strategy. However, the question remains: What specific IT activities are most worthwhile for a company that is pursuing a specific type of strategy? Circumstances will vary widely by individual company, but the following list of activities will generally be most useful when conducted under the indicated strategies:

- *Explosive sales growth strategy.* In this instance, a company has chosen to increase sales at the highest possible rate, ignoring cost efficiencies, product improvements, or other internal efficiencies in the short term. It should consider installing computer systems for its dealers and sales representatives that give them direct access to the company's quote and order status database. It may wish to provide wireless access to its sales representatives, so they can access information more easily from the field. It can also create a quoting system for the sales staff that tracks which quotes are under development, which have been submitted, and which have been won, as well as the reasons for lost quotes. Senior management will want daily access to sales information, especially for new sales regions. Also, the strategy could include a complete standardization of systems installed at all new company locations, in order to reduce the maintenance workload of the IT staff. In general, the company should consider installing packaged customer relationship management (CRM) software for use by its sales staff in order to have a centralized database of customer information.

- *Great customer service strategy.* In this case, a company chooses to expend extra effort to ensure top-level service to its customers, probably combined with higher product costs that customers are willing to pay in exchange for the service. It should consider giving its customers electronic access to information about their orders, perhaps through an Internet connection. It should also allow them to place electronic orders. In addition, there should be in-house databases to track the status of customer complaints, as well as product or service quality issues and the status of all field service orders. These systems can also be integrated with global positioning systems, so that customers can see exactly where their shipments are located around the world. Company management should have immediate access to these databases to see where problems are arising; this approach could be advanced to ''push'' technology, where management is notified automatically by the system when a problem arises. The company should also have a product recall system in place, perhaps including tracking by production lots, so that product problems can be dealt with rapidly and efficiently. The system should also have a linkage between the order entry and part ordering or manufacturing systems, so that delivery commitments can be made automatically and online, with access to this information to customers.
- *Product improvement strategy.* In this instance, a company elects to constantly upgrade its products and develop new ones, on the assumption that customers will pay a premium for them. It should consider installing systems that allow it to easily swap drawings and other product documents electronically with its business partners. It can also implement project management systems that allow for concurrent product development by multiple departments. Further, systems should allow the management team to track time to market on all product development projects, as well as development problems. There should also be a database of product component costs for a variety of product configurations and purchasing or production volumes, which is useful for meeting target costing goals. In addition, there should be advanced cost accounting systems for accumulating product costs at any stage of the development process. Also, a prototyping system should allow for rapid product designs and modeling applications. Finally, systems might be needed for tracking all stages of product patent applications, as well as for product licensing agreements with other companies.
- *Low-cost strategy.* In this case, a company chooses to limit its service level and range of product offerings, concentrating instead on selling products at the absolute lowest cost possible. One possible application under this strategy is the acquisition of a manufacturing resources planning (MRP II) package, which creates an orderly flow of resources through a manufacturing facility, resulting in much better use of materials, equipment, and personnel. Another option is the installation of a just-in-time (JIT) manufacturing system, though this involves fewer computer systems, with a greater emphasis on the reconfiguration of the shop floor, reducing the size of production runs, and altering the size and timing of supplier deliveries. Another possibility is the use of supply chain management (SCM) software, which gives suppliers a transparent view of what customer orders have reached the company and when they must send in parts in order for the company to meet its product

schedule. A mandatory system to have in place is a comprehensive bill of materials database that is maintained with the highest degree of accuracy, since this information is needed to drive a variety of parts ordering systems. Also, if IT is considered a less strategic capability, some portions of it can be outsourced overseas to take advantage of lower labor costs.

In addition to the basic strategies just noted, there are general types of operations or situations where certain types of IT projects are more likely to be found. For example, a publicly held company may be interested in a rapid closing of its financial transactions at the end of each quarter, and so may be more interested in advanced software systems that will allow it to do so. A public company may also want fast access to key metrics in order to be able to pass this information along to its investors, so it may be more inclined to invest in an executive information system. For the same reason, other projects high on its list may be a data warehouse, a CRM system containing up-to-date forecasting capabilities, and an accurate backlog tracking system.

Another type of company operation is the international corporation. This entity requires accounting software with multicurrency capabilities and a treasury workstation, as well as worldwide electronic meeting capabilities that can be provided through instant messaging, a wide-area network, and videoconferencing. Also, if company management wishes to centralize selected worldwide transactions, it can invest in an ERP system, or at a lower level, just the customer service and purchasing functions.

A company type requiring significantly different IT systems is the service business. In this case, taking care of key employees and tracking who has key knowledge are critical to corporate success. Consequently, IT systems should track employee training, benefits, hiring, rewards, performance reviews, and turnover, as well as applicants for specific positions. If the people in this business are knowledge-intensive, such as consultants, they should also be supplied with wireless communications to other employees, so they can quickly obtain information relevant to their clients.

Finally, the classic manufacturing operation requires many of the systems previously noted under the low-cost strategy. The previously noted MRP or JIT systems can also be integrated into a companywide ERP system in order to share information across all departments that may be of the most use to the manufacturing function. Further, IT systems should allow the manufacturing operation to create products in a make-to-order mode, which is the least inventory-intensive form of production. There can also be supplier certification systems that allow the receiving department to cancel incoming inspections for prequalified goods, while a cost estimation system is critical for the design of new products. There should also be an engineering changes tracking database that notes the times when product modifications will be swapped into the existing production process.

Clearly, the types of systems installed will vary widely, depending on the type of business strategy that the management team chooses to pursue. Even when the range of choices are narrowed down into any of the preceding strategic directions, there could still be too many possible projects from which to pick. If so, the selection criteria noted earlier in the ''Developing the Information Technology Strategy'' section should be used to locate those few projects with the greatest potential to give the company's strategy a boost.

SUMMARY

As may have become evident in this chapter, a company with a proper IT strategy is well on its way to devising an extremely successful overall business strategy. The selection of the proper set of IT project priorities requires considerable time and the involvement of all parts of the company, but results in excellent use of limited capital to support the most important business activities. When these strategies are created in light of what is being done at competing firms, a company has a good chance of establishing a strong competitive position from which it can only be dislodged with great difficulty.

PART TWO

Accounting

The New CFO Financial Leadership Manual, Third Edition
by Steven M. Bragg

CHAPTER FIVE

Performance Measurement Systems

THIS CHAPTER CONTAINS THE 28 most important performance measurement ratios for a CFO to use, covering asset utilization, operating performance, cash flow, liquidity, solvency, return on investment (ROI), and market performance. Each measurement description includes an overview, notes on how to derive the calculation, and how it is used in an example.

CREATING A PERFORMANCE MEASUREMENT SYSTEM

If a CFO were in favor of using all 28 of the measurements listed in this chapter, he or she might spend a great deal of time compiling the calculations, which is not a good use of time. Instead, see if the accounting software currently in use can automatically calculate this information. If not, then hand off the task to a financial analyst to calculate on an electronic spreadsheet.

Another issue for a performance measurement system is consistency of calculations. It is a simple matter to show enhanced performance measurements simply by deleting a few elements from a calculation; to avoid this, spend a considerable amount of time formally laying out the precise definition and calculation methodology for each performance measurement. If there is some perceived risk that the measurements will be altered even with these instructions in place, then ask the internal audit team to review the measurements from time to time. If there is a good reason for altering a calculation at some point in the future, then use the new calculation to modify the same measurement for all previous periods for which the measure is reported, so there is reporting consistency across all periods.

The CFO should be prepared to handle criticism from other department managers if the performance measurement system shows them to have subpar performance. A common reaction is that the measurements are being made incorrectly, with the

"correct" version undoubtedly yielding improved results for the department in question. The CFO can avoid this problem to some extent by spending time at the front end of the performance measurement system implementation, working with the department managers to derive the best measurements possible. By giving department managers a voice in the calculation methodology in advance, they are less likely to complain later on.

ASSET UTILIZATION MEASUREMENTS

The six ratios noted in this section primarily focus on the level of a company's sales in relation to other key operating variables of a company, such as working capital, head count, and total expenses. They are designed to give the CFO a quick overview of the sufficiency of sales being generated.

Sales to Working Capital Ratio

It is exceedingly important to keep the amount of cash used by an organization at a minimum, so that its financing needs are reduced. One of the best ways to determine changes in the overall usage of cash over time is the ratio of sales to working capital. This ratio shows the amount of cash required to maintain a certain level of sales. It is most effective when tracked on a trend line, so that management can see if there is a long-term change in the amount of cash required by the business in order to generate the same amount of sales. For instance, if a company has elected to increase its sales to less creditworthy customers, it is likely that they will pay more slowly than regular customers, thereby increasing the company's investment in accounts receivable. Similarly, if the management team decides to increase the speed of order fulfillment by increasing the amount of inventory for certain items, then the inventory investment will increase. In both cases, the ratio of sales to working capital will worsen due to specific management decisions. An alternative usage for this ratio is for budgeting purposes, since budgeted working capital levels can be compared to the historical amount of this ratio to see if the budgeted working capital level is sufficient.

The formula is to compare sales to working capital, which is accounts receivable, plus inventory, minus accounts payable. Do not use annualized *gross* sales in the calculation, since this would include in the sales figure the amount of any sales that have already been returned, and are therefore already included in the inventory figure. The formula is:

$$\frac{\text{Annualized net sales}}{(\text{Accounts receivable} + \text{Inventory} \pm \text{Accounts payable})}$$

As an example, the Jolt Power Supply Company has elected to reduce the amount of inventory it carries for some of its least-ordered stock items, with a goal of increasing inventory turnover from twice a year to four times a year. It achieves its inventory goal quite rapidly by selling back some of its inventory to its suppliers in exchange for credits

EXHIBIT 5.1 Sample Sales and Working Capital Data

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Revenue	$320,000	$310,000	$290,000	$280,000
Accounts receivable	107,000	103,000	97,000	93,000
Inventory	640,000	320,000	320,000	320,000
Accounts payable	53,000	52,000	48,000	47,000
Total working capital	694,000	371,000	369,000	366,000
Sales: Working capital ratio	1:0.54	1:0.30	1:0.32	1:0.33

against future purchases. Exhibit 5.1 shows portions of its operating results for the first four quarters after this decision was made.

The accounts receivable turn over at a rate of once every 30 days, which does not change through the term of the analysis. Inventory dropped in the second quarter to arrive at the new inventory turnover goal, while the amount of accounts payable stays at one-half of the revenue level, reflecting a typical distributor's gross margin of 50 percent throughout all four periods. The resulting ratio shows that the company has indeed improved its ratio of sales to working capital, but at the price of some lost sales to customers who were apparently coming to the company because of its broad inventory selection.

Days of Working Capital

A company can use a very large amount of working capital to generate a small volume of sales, which represents a poor use of assets. The inefficient asset use can lie in any part of working capital—excessive quantities of accounts receivable or inventory in relation to sales, or very small amounts of accounts payable. The *days of working capital* measure, when tracked on a trend line, is a good indicator of changes in the efficient use of working capital. A low number of days of working capital indicates a highly efficient use of working capital. However, working capital levels will vary throughout the year, depending on a company's business cycle, which will alter the days of working capital figure, depending on the month of the year. For example, if a firm has a Christmas selling season, then it will build inventory until its prime selling season, resulting in a gradual increase in the days of working capital measure for most of the year.

The formula is to add together the current balance of accounts receivable and inventory, and subtract accounts payable. Then divide the result by sales per day (annual sales divided by 365):

$$\frac{(\text{Accounts receivable} + \text{Inventory} - \text{Accounts payable})}{\text{Net sales}/365}$$

As an example, the Electro-Therm Company, maker of electronic thermometers, has altered its customer service policy to guarantee a 99 percent fulfillment rate within one day of a customer's order. To do that, it has increased inventory levels for many

stockkeeping units. Electro-Therm's CFO is concerned about the company's use of capital to sustain this new policy; she has collected the information in the following table to prove her point to the company president:

Capital Use by Category	Year before Policy Change	Year after Policy Change
Accounts receivable	$602,000	$723,000
Inventory	1,825,000	2,760,000
Accounts payable	$493,000	$591,000
Working capital	$2,920,000	$4,074,000
Net sales	$5,475,000	$6,570,000
Sales per day	$15,000	$18,000
Days of working capital	195	226

The table reveals that Electro-Therm's management has acquired an additional $1,095,000 of revenue (assuming that incremental sales are solely driven by the customer service policy change) at the cost of a nearly equivalent amount of investment in inventory. Depending on the firm's cost of capital, inventory obsolescence rate, and changes in customer retention rates, the new customer service policy may or may not be considered a reasonable decision.

Sales per Person

Sales per person is one of the most closely watched of all performance measures. It is based on the assumption that employees are at the core of a company's profitability, and so high degrees of efficiency in this area are bound to result in strong profitability. It is also a standard benchmark in many industries.

The formula is to divide revenue for a full year by the total number of full-time equivalents (FTEs) in the company. An FTE is the combination of staffing that equals a 40-hour week. For example, two half-time employees would be counted as one FTE. The formula is:

$$\frac{\text{Annualized revenue}}{\text{Total full-time equivalents}}$$

As an example, the operations manager of the Twirling Washing Machine Company wants to determine the sales per person for his company. The company has annual revenues of $4,200,000. Its head count is as follows:

Department	Head Count
Direct labor department	22
Direct labor part-time staff	6
Production supervisors	2
Materials handling department	4
Sales, general, & administrative	10
Administrative part-time staff	2
Engineering department	8

In total, the company has 54 employees. However, if we assume that the part-time staff all work half time, then the eight part-time positions can be reduced to four FTEs, which decreases the total head count to 50 personnel. The calculation results in overall sales per employee of $84,000, which is $4,200,000 in revenues divided by 50 employees.

Sales Backlog Ratio

This ratio is an extremely useful tool for determining a company's ability to maintain its current level of production. If the ratio is dropping rapidly over several consecutive months, then it is likely that the company will shortly experience a reduction in sales volume, as well as overcapacity in its production and related overhead areas, resulting in imminent losses. Conversely, a rapid jump in the ratio indicates that a company cannot keep up with demand and may soon experience both customer relations problems from delayed orders and a need for additional capital expenditures and staff hirings to increase its productive capacity.

The formula is to divide the most current total backlog of sales orders by sales. It is generally best not to use annualized sales in the denominator, since sales might vary considerably over that period, due to the influence of seasonality. A better denominator is sales over just the preceding quarter. The formula is:

$$\frac{\text{Backlog of orders received}}{\text{Sales}}$$

A variation on this formula is to determine the number of days of sales contained within the backlog, which is achieved by comparing the backlog to the average daily sales volume that a company typically produces. This formula is:

$$\frac{\text{Total backlog}}{\text{Annual sales}/360\text{ days}}$$

As an example, Exhibit 5.2 shows the sales and backlog data for the Jabber Phone Company. The data reveal that the company's sales are continuing to increase over time, while its backlog is decreasing. The change was caused by an increase in the company's productive capacity for additional cell phones. As a result, the company is gradually clearing out its backlog and converting it into sales. However, the management team must be aware that, if the trend continues, the company will eventually clear out its entire backlog and find itself with a sudden reduction in sales unless it greatly increases its sales and marketing efforts to build the backlog back up to a higher level.

EXHIBIT 5.2 Sample Sales and Backlog Data

	January	February	March
Rolling three-month sales	$4,500,000	$4,750,000	$4,800,000
Month-end backlog	2,500,000	2,000,000	1,750,000
Sales backlog ratio	0.55:1	0.42:1	0.36:1

Breakeven Point

This measurement determines the sales level at which a company exactly breaks even. This figure is useful for determining how much extra productive capacity is available after breakeven sales have been manufactured, which tells the management team how much profit can theoretically be generated at maximum capacity levels. It is also good for determining changes in the breakeven point resulting from decisions to add fixed costs (especially when replacing variable production costs with fixed automation costs). It can also be used to determine changes in profits when the sales staff is contemplating making changes in product prices.

The formula is to divide the average gross margin percentage into total operating costs. Be sure to include all operating costs outside of the cost of goods sold in this calculation—only extraordinary items that are in no way related to ongoing operations should be excluded from this formula:

$$\frac{\text{Total operating expenses}}{\text{Average gross margin percentage}}$$

As an example, the Reef Shark Acquisition Company is looking into the purchase of a sewing thread company. Its two key concerns are the breakeven point of the acquiree and the presence of any overhead costs that it can eliminate by centralizing functions at its corporate headquarters. Its due diligence team constructs the table of information in Exhibit 5.3.

This exhibit clearly shows that the acquiree currently has a breakeven point so high that it is essentially incapable of ever turning a profit, since the breakeven level is the same as its maximum productive capacity. However, the removal of some key overhead costs reduces the breakeven point to such an extent that the acquirer will be able to generate a significant return from the existing sales level. The revised breakeven level is determined by subtracting the operating expense reductions of $750,000 from the existing operating expenses of $3,500,000, and then dividing the remaining $2,750,000 in operating expenses by the gross margin of 35 percent to arrive at a new breakeven point of $7,857,000. The maximum potential profit figure of $750,050

EXHIBIT 5.3 Sample Breakeven Data

	Before Acquisition
Maximum sales capacity	$10,000,000
Current average sales	9,500,000
Gross margin percentage	35%
Total operating expenses	3,500,000
Breakeven point	$10,000,000
Operating expense reductions	750,000
Revised breakeven level	$ 7,857,000
Maximum profits with revised breakeven point	$ 750,050

EXHIBIT 5.4 Sample Margin of Safety Data

	Before Truck Purchase	After Truck Purchase
Sales	$2,300,000	$2,700,000
Gross margin percentage	55%	55%
Fixed expenses	$1,000,000	$1,200,000
Breakeven point	$1,818,000	$2,182,000
Profits	$ 265,000	$ 285,000
Margin of safety	21%	19%

is derived by subtracting the revised breakeven point from the maximum possible sales capacity level of $10,000,000 and then multiplying the result by the gross profit percentage.

Margin of Safety

This is the amount by which sales can drop before a company reaches its breakeven point. It is particularly useful in situations where large portions of a company's sales are at risk, such as when they are tied up in a single customer contract that can be canceled. Knowing the margin of safety gives a good idea of the probability that a company will find itself in difficult financial circumstances caused by sales fluctuations.

The formula is to subtract the breakeven point from the current sales level, and then divide the result by the current sales level. To calculate the breakeven point, divide the gross margin percentage into total fixed costs. This formula can be broken down into individual product lines for a better view of risk levels within business units:

$$\frac{\text{Current sales level} - \text{Breakeven point}}{\text{Current sales level}}$$

As an example, the Fat Tire Publishing House, Inc., is contemplating the purchase of several delivery trucks to assist in the delivery of its *Fat Tire Weekly* mountain biking magazine to a new sales region. The addition of these trucks will add $200,000 to the operating costs of the company. Key information related to this decision is noted in Exhibit 5.4.

This exhibit shows that the margin of safety is reduced from 21 to 19 percent as a result of the truck acquisition. However, profits are expected to increase by $20,000, so the management team must weigh the risk of adding expenses to the benefit of increased profitability.

OPERATING PERFORMANCE MEASUREMENTS

The four measurements noted in this section focus on the margins derived when certain types of expenses are included. The most highly recommended one is the operating profit percentage, especially when tracked on a trend line, since it shows operating results

before any special adjustments are added that might otherwise cloud the picture of a company's true underlying performance.

Gross Profit Percentage

This measurement reveals the profit left over from operations after all variable costs have been subtracted from revenues. In essence, it shows the efficiency of the production process in relation to the prices and unit volumes at which products are sold.

There are two ways to measure the gross margin. The most common approach is to add together the costs of overhead, direct materials, and direct labor, subtract them from revenue, and then divide the result by revenue. This approach takes into account all costs that can be reasonably associated with the production process. The formula is:

$$\frac{\text{Revenue} - (\text{Overhead} + \text{Direct materials} + \text{Direct labor})}{\text{Revenue}}$$

The trouble with this approach is that many of the production costs are not truly variable. Under a much more strictly defined view of variable costs, only direct materials should be included in the formula, since this is the only cost that truly changes in lockstep with changes in revenue. All other production costs are then shifted into other operational and administrative costs, which typically yields a very high gross margin percentage. The formula is:

$$\frac{\text{Revenue} - \text{Direct materials}}{\text{Revenue}}$$

As an example, the Spanish Tile Company bases its sales quoting system on the gross margin assigned to its products—prices quoted must have a gross margin of at least 25 percent in order to cover administrative costs and create a modest profit. Recently, the Iberian Tile Company has been taking business away from the Spanish Tile Company through more aggressive pricing. Investigation of its competitor's quoting practices reveals that it uses an alternative gross margin model that uses only direct material costs as a deduction from revenues. This means that its competitor is always in a position to offer lower prices, since it does not incorporate direct labor and overhead costs into its pricing model. The Iberian Tile Company is in danger of quoting excessively low prices if it continues to use its gross margin model, so it focuses on how prospective sales will impact its bottleneck operation, which is the tile kiln. If a prospective sale requires a great deal of kiln time, then it is charged a much higher price than other quotes that do not use as much of this valuable resource. As a result of this survey, the Spanish Tile Company realizes that its competitor has a more precise and aggressive quoting model that will likely result in more lost sales for Spanish Tile in the future.

Operating Profit Percentage

The operating profit percentage reveals the return from standard operations, excluding the impact of extraordinary items and other comprehensive income. Use of this percentage reveals the extent to which a company is earning a profit from standard operations, as opposed to resorting to asset sales or unique transactions to post a profit.

EXHIBIT 5.5 Sample Operating Profit Data

Revenue	$1,428,000
Cost of goods sold	−571,000
Gross margin	857,000
Operating costs	−849,000
Interest expense	−23,000
Operating profit/loss	−$ 15,000
Operating profit percentage	−1%

The formula is to subtract the cost of goods sold, as well as all sales, general, and administrative expenses, from sales. In order to obtain a percentage that is strictly related to operational results, be sure to exclude interest income and expense from the calculation, since these items are related to a company's financing decisions rather than its operational characteristics. Expense totals used in the ratio should exclude all extraordinary transactions, as well as asset dispositions, since they do not relate to continuing operations:

$$\frac{\text{Sales} \pm (\text{Cost of goods sold} + \text{Sales, general, and administrative expenses})}{\text{Sales}}$$

As an example, the Swiss Mountain Chocolate Company has a loan with the local bank whose covenants include the stipulation that the loan will be immediately callable if the company's operating profit percentage drops below zero. In the current month, it will incur an operating loss of $15,000, which will allow the bank to call its loan. The calculation it is using to derive the operating loss is shown in Exhibit 5.5.

Since there is no specification in the loan agreement of the operating loss calculation, the CFO defines it as excluding financing activities, removes the interest expense from the calculation, and achieves an operating profit of $8,000. To be ethically correct, the CFO also specifies the exact contents of the calculation in her next report to the bank.

Net Profit Percentage

This percentage is used to determine the proportion of income derived from all operating, financing, and other activities that an entity has engaged in during an accounting period. It is the one most commonly used as a benchmark for determining a company's performance, even though it does not necessarily reflect a company's cash flows, which may be negative even when net profits are reported.

The formula is to divide net income by revenue:

$$\frac{\text{Net income}}{\text{Revenue}}$$

If this percentage is being tracked on a trend line, it may be useful to eliminate from the calculation any extraordinary income items, such as losses from disasters, since they do not yield comparable period-to-period information.

EXHIBIT 5.6 Sample Net Profit Data

	Per-Store Results
Sales	$350,000
Wages	260,000
Supplies	75,000
Assets < $1,000	42,000
Net income	$15,000
Net income percentage	4%

As an example, the Quick Cuts Hair Salon is a franchise operation that pays for the initial fixed assets required by each franchisee. This involves an investment of about $200,000 per hair salon. The management team is determined to grow the operation as fast as possible while still reporting healthy profits. To do so, it sets the capitalization limit very low, at just $250, so that nearly everything it purchases is capitalized. Because it uses a ten-year depreciation period for all fixed assets, this results in the recognition of costs over many future periods that would normally be recognized at once if a higher capitalization limit were used. Its operating results for a typical store are shown in Exhibit 5.6.

The key line item in the exhibit is the assets costing less than $1,000; if the company had set a higher capitalization limit, these costs would have been recognized as expenses at once, which would have yielded a loss on operations of $27,000 per store. As a result, the company's accounting policy is creating false profits. When combined with the high initial setup cost of each store, it is apparent that this seemingly healthy franchise operation is actually burning through its cash reserves at a prodigious rate.

CASH FLOW MEASUREMENTS

The three measurements noted in this section focus on a company's cash sufficiency in order to sustain operations. If a CFO does not pay attention to these measures, it is possible for an organization to quite suddenly find itself in need of outside funding. Consequently, cash flow measures should be parked near the top of a CFO's list of "must have" measurements.

Cash Flow from Operations

Under generally accepted accounting principles (GAAP), a company can quite easily report a large income figure, even while its cash reserves are draining away. The cash flow from operations ratio can be used to determine the extent to which cash flow differs from the reported level of either operating income or net income. Any difference in the ratio that varies significantly from one is indicative of substantial noncash expenses or sales in the reported income figures. Cash flow problems are likely if the ratio is substantially less than one.

The formula can be generated in two formats. One is to divide operational cash flow by income from operations, while the second format is to divide cash flow from all transactions (including extraordinary items) by net income. The first format yields a more accurate view of the proportion of cash being spun off from ongoing operations, while the second version shows the impact of any transactions that are unrelated to operations. Both formulas are shown here:

$$\frac{\text{Income from operations} + \text{Noncash expenses} \pm \text{Noncash sales}}{\text{Income from operations}}$$

$$\frac{\text{Net income} + \text{Noncash expenses} \pm \text{Noncash sales}}{\text{Net income}}$$

As an example, the Bargain Basement Insurance Company (BBIC) is opening new stores at a rapid clip, trying to gain premium locations before its key competitor, Super Low Premiums, Inc., grabs the same spots. The company is reporting net income of 20 percent from its operations, which is considered reasonable in the insurance business. However, it cannot understand why its bank continues to refuse additional loans to fund ongoing operational needs. The bank is concerned about BBIC's cash flow from operations ratio. The company's relevant projections are shown in Exhibit 5.7.

The exhibit reveals the key problem for BBIC, which is that the company is recognizing insurance as revenue prior to the receipt of cash from policyholders in some cases. Consequently, its rapid growth is only resulting in modest positive cash flow, which translates into a poor cash flow from operations ratio of 20 percent. The bank correctly finds this ratio to be probably indicative of BBIC's future inability to pay back a loan, and so refuses to extend one.

Cash Flow Return on Assets

This calculation is used to determine the amount of cash that a company is generating in proportion to its asset level. This can be used as a substitute for the popular return on assets measure, since the net income figure used in the return on assets calculation is subject to greater manipulation through the use of noncash accounting entries.

The formula is to add together net income and any noncash expenses, such as depreciation and amortization. Then subtract from this amount any noncash sales, such as revenue that has been recognized but is unbilled. Then divide the result by the *net*

EXHIBIT 5.7 Sample Cash Flow from Operations Data

	Current Year	Next Year	Following Year
Sales	$5,000,000	$10,000,000	$15,000,000
Net income	1,000,000	2,000,000	3,000,000
Revenue recognition of future insurance payments	800,000	1,600,000	2,400,000
Annual cash flow	200,000	400,000	600,000
Cash flow from operations ratio	20%	20%	20%

EXHIBIT 5.8 Sample Cash Flow Return on Assets Data

	Return on Assets	Cash-Flow Return on Assets
Net income	$1,000,000	$ 1,000,000
Depreciation		+$ 105,000
Pension fund gains		−$45,000
Bill and hold revenue		−$ 132,000
Percentage of completion revenue		−$ 154,000
Total assets	$3,250,000	$3,250,000
Measurement	30.8%	23.8%

value of all assets; this should include accounts receivable net of a bad debt reserve, inventory net of an obsolescence reserve, and fixed assets net of depreciation. The formula is:

$$\frac{\text{Net income} + \text{Noncash expenses} \pm \text{Noncash sales}}{\text{Total assets}}$$

As an example, the CFO of the Glowering Taillight Company, resellers of 1950s-era taillights, has been told by his controller for several years that the company has a sterling return on assets. He would like to verify this by comparing the measure to the cash flow return on assets. He collects the information shown in Exhibit 5.8.

The return on assets figure listed at the bottom of the exhibit is derived by dividing net income of $1,000,000 by total assets of $3,250,000. To arrive at the cash flow return on assets, the CFO must add back the noncash depreciation expense and then subtract a series of noncash accounting entries that have artificially increased the revenue level. The result is:

$$\frac{\$1,000,000 \text{ net income} + \$105,000 \text{ noncash expenses} \pm \$331,000 \text{ noncash sales}}{\$3,250,000 \text{ total assets}}$$
$$= \frac{\$774,000 \text{ cash flow}}{\$3,250,000 \text{ total assets}} = \underline{\underline{23.8\%}} \text{ Cash flow return on assets}$$

Though the cash flow return on assets percentage is quite acceptable, it is also considerably less than the reported return on assets.

Cash to Working Capital Ratio

This ratio is useful for determining the proportion of working capital that is made up of either cash or investments that can be readily converted into cash. If this ratio is low, then this can be an indication that a company might have trouble meeting its short-term commitments, due to a potential lack of cash. If this is the case, the next formula to calculate would be the number of expense coverage days (see earlier measurement in this chapter) in order to determine exactly how many days of operations can be covered by existing cash levels.

EXHIBIT 5.9 Sample Cash to Working Capital Data

Fund Type	Amount	Liquidity
Cash	$ 55,000	Immediately available
Money market funds	180,000	Available in one day
Officer loan	200,000	Due in 90 days
Accounts receivable	450,000	Due in 45 days
Inventory	850,000	Turnover every 4 months
Current liabilities	450,000	Due in 30 days

The formula is to add together the current cash balance, as well as any marketable securities that can be liquidated in the short term, and divide it by current assets, less current liabilities. The key issue is which investments to include in the measurement—since this is intended to be a measure of short-term cash availability, any investments that cannot be liquidated in one month or less should be excluded from the calculation. The formula follows:

$$\frac{\text{Cash} + \text{Short-term marketable securities}}{\text{Current assets} \pm \text{Current liabilities}} = \text{Cash to working capital}$$

As an example, the Arbor Valley Tree Company has a large inventory of potted plants and trees on hand, which is a large proportion of its inventory, and is recorded as part of current assets. However, they turn over only three times per year, which does not make them very liquid for the purposes of generating short-term cash. The CFO wants to know what proportion of the current ratio is really composed of cash or cash equivalents, since it appears that a large part of working capital is skewed in the direction of this slow-moving inventory. She has the information shown in Exhibit 5.9.

Based on this information, she calculates the cash to working capital ratio:

$$\begin{aligned}
&\frac{\text{Cash} + \text{Short-term marketable securities}}{\text{Current assets} \pm \text{Current liabilities}} \\
&= \frac{\$55,000 + \$180,000}{(\$55,000 + \$180,000 + \$200,000 + \$450,000 + \$850,000) - (\$450,000)} \\
&= \frac{\$235,000}{\$1,285,000} = \underline{\underline{18.3\%}}
\end{aligned}$$

She did not include the note receivable from the company officer, since it would be available for 90 days. This nearly halved the amount of the ratio to 18.3 percent, which reveals that the company should be extremely careful in its use of cash until more of the accounts receivable or inventory balances can be liquidated.

LIQUIDITY MEASUREMENTS

The five measurements noted in this section are critical to a CFO's short-term reporting on the liquidity of assets. Review the days of accounts receivable measure no less than

once a week to verify that the credit and collections function is working properly. The collection effectiveness index provides a good overview of the efficiency of the collections function. Inventory turnover is worthy of a monthly review, preferably on a trend-line basis, to ensure that a company is not investing too much in its on-hand inventories. Similarly, a weekly review of accounts payable days will inform the CFO if bills are being paid either too early or too late. The quick ratio is more useful as a summary-level review of the four other liquidity measures, of which they are key components.

Average Receivable Collection Period

The speed with which a company can obtain payment from customers for outstanding receivable balances is crucial for the reduction of cash requirements. A very long accounts receivable collection period indicates that a company's credit and collections function is very good at avoiding potentially delinquent customers, as well as collecting overdue funds. This format is particularly useful when it is compared to the standard number of days of credit granted to customers. For example, if the average collection period is 60 days and the standard days of credit is 30, then customers are taking much too long to pay their invoices. A sign of good performance is when the average receivable collection period is only a few days longer than the standard days of credit.

The formula is to divide annual credit sales by 365 days, and divide the result into average accounts receivable:

$$\frac{\text{Average accounts receivable}}{\text{Annual sales}/365}$$

As an example, the new CFO of the Flexo Paneling Company, makers of modularized office equipment, wants to determine the company's accounts receivable collection period. In the June accounting period, the beginning accounts receivable balance was $318,000 and the ending balance was $383,000. Sales for May and June totaled $625,000. Based on this information, the CFO calculates the average receivable collection period as follows:

$$\frac{(\$318,000 \text{ beginning receivables} + \$383,000 \text{ ending receivables})/2}{(\$625,000 \times 6)/365}$$

$$= \frac{\$350,500 \text{ average accounts receivable}}{\$10,274 \text{ sales per day}} = 34.1 \text{ days}$$

Note that the CFO derived the annual sales figure used in the denominator by multiplying the two-month sales period in May and June by six. Since the company has a stated due date of 30 days after the billing date, the 34.1-day collection period appears reasonable.

Collection Effectiveness Index

Most liquidity measurements for receivables, such as accounts receivable turnover or the days of delinquent sales outstanding, are easily impacted by spikes or declines in sales, so they are not valid measures of collection performance. Instead, use the

collection effectiveness index (CEI), which more precisely determines the effectiveness of the credit and collections staff. This measure compares what was collected in a given period to what was available to collect. A score close to 100 percent indicates a high degree of collection effectiveness.

The formula is to add together the beginning receivables for the measurement period, plus credit sales during the period, and subtract ending total receivables. Then divide this number by the sum of beginning receivables and credit sales and subtract ending current receivables. Finally, multiply the result by 100 to obtain a percentage:

$$\frac{\text{Beginning receivables} + \text{Credit sales} \pm \text{Ending total receivables}}{\text{Beginning receivables} + \text{Credit sales} \pm \text{Ending current receivables}} \times 100$$

As an example, the sales and receivable data for Moonlight Productions are as follows:

Beginning receivables	$4,500,000
Credit sales	3,200,000
Ending current receivables	2,800,000
Ending total receivables	5,000,000

Based on this information, Moonlight's CEI is as follows:

$$\frac{\$4,500,000 + \$3,200,000 - \$5,000,000}{\$4,500,000 + \$3,200,000 - \$2,800,000} \times 100 = 55\% \text{ CEI}$$

The credit sales in this calculation are assumed to be generated over a one-month period. If the calculation were to cover a longer period, then divide the credit sales figure by the number of months being measured. For example, to measure the CEI for a quarter, divide the credit sales for the quarter by three before using it in the formula.

Inventory Turnover

Inventory is frequently the largest component of a company's working capital; in such situations, if inventory is not being used up by operations at a reasonable pace, then a company has invested a large part of its cash in an asset that might be difficult to liquidate in short order. Accordingly, keeping close track of the rate of inventory turnover is a significant function of management. This section describes several variations on the inventory turnover measurement, which may be combined to yield the most complete turnover reporting for management to peruse. In all cases, these measurements should be tracked on a trend line in order to see if there are gradual reductions in the rate of turnover, which can indicate to management that corrective action is required in order to eliminate excess inventory stocks.

The most simple turnover calculation is to divide the period-end inventory into the annualized cost of sales. One can also use an *average* inventory figure in the

EXHIBIT 5.10 Sample Inventory Turnover Data

Balance Sheet Line Item	Amount
Cost of goods sold	$4,075,000
Direct materials expense	$1,550,000
Raw materials inventory	$ 388,000
Total inventory	$ 815,000

denominator, which avoids sudden changes in the inventory level that are likely to occur on any specific period-end date. The formula is:

$$\frac{\text{Cost of goods sold}}{\text{Inventory}}$$

A variation on the preceding formula is to divide it into 365 days, which yields the number of days of inventory on hand. This may be more understandable to the layman; for example, 43 days of inventory is more clear than 8.5 inventory turns, even though they represent the same situation. The formula is:

$$\frac{365}{\text{Cost of goods sold/Inventory}}$$

As an example, the Rotary Mower Company, maker of the only lawn mower driven by a Wankel rotary engine, is going through its annual management review of inventory. Its CFO has the information shown in Exhibit 5.10.

To calculate total inventory turnover, the CFO creates the following calculation:

$$\frac{\$4,075,000 \text{ cost of goods sold}}{\$815,000 \text{ inventory}} = 5 \text{ turns per year}$$

To determine the number of days of inventory on hand, the CFO divides the number of turns per year into 365 days:

$$365 / \frac{\$4,075,000 \text{ cost of goods sold}}{\$815,000 \text{ inventory}} = 73 \text{ days of inventory}$$

Accounts Payable Days

A calculation of the days of accounts payable gives an outside observer a fair indication of a company's ability to pay its bills on time. If the accounts payable days are inordinately long, this is probably a sign that the company does not have sufficient cash flow to pay its bills, and may find itself out of business in short order. Alternatively, a small amount of accounts payable days indicates that a company is either taking advantage of early payment discounts or is simply paying its bills earlier than it has to.

The formula is to divide total annualized purchases by 360 days, and then divide the result into the ending accounts payable balance. An alternative approach is to use the *average* accounts payable for the reporting period, since the ending figure might be disproportionately high or low. The amount of purchases should be derived from all

nonpayroll expenses incurred during the year; payroll is not included, because it is not a part of the accounts payable listed in the numerator. Also, depreciation and amortization should be excluded from the purchases figure, since they do not involve cash payments. The formula is:

$$\frac{\text{Accounts payable}}{\text{Purchases}/360}$$

As an example, the Drain-Away Toilet Company has beginning accounts payable of $145,000 and ending accounts payable of $157,000. On an annualized basis, its total expenses are $2,400,000, of which $600,000 is payroll and $50,000 is depreciation. To determine its accounts payable days, we plug this information into the following formula:

$$\frac{(\text{Beginning accounts payable} + \text{Ending accounts payable})/2}{(\text{Total expenses} - \text{Payroll} - \text{Depreciation})/360}$$

$$= \frac{(\$145,000 \text{ beginning payables} + \$157,000 \text{ ending payables})/2}{(\$2,400,000 \text{ total expenses} \pm \$600,000 \text{ payroll} \pm \$50,000 \text{ depreciation})/360}$$

$$= \frac{\$151,000 \text{ average accounts payable}}{\$1,750,000 \text{ purchases}/360} = \underline{\underline{31}} \text{ days}$$

Quick Ratio

This ratio excludes inventory from the current assets portion of the current ratio. By doing so, you can gain a better understanding of a company's very short-term ability to generate cash from more liquid assets such as accounts receivable and marketable securities.

The formula is to add together cash, marketable securities, and accounts receivable, and divide the result by current liabilities. Be sure to only include those marketable securities that can be liquidated in the short term, and those receivables that are not significantly overdue. The formula is:

$$\frac{\text{Cash} + \text{Marketable securities} + \text{Accounts receivable}}{\text{Current liabilities}}$$

As an example, the Huff-Puff Shed Company, makers of sheds that are guaranteed not to blow down in any wind under 100 miles per hour, appears to have a comfortably high current ratio of 2.5:1. The components of that ratio are broken down in Exhibit 5.11.

EXHIBIT 5.11 Sample Quick Ratio Data

Account	Amount
Cash	$ 120,000
Marketable securities	$ 53,000
Accounts receivable	$ 418,000
Inventory	$2,364,000
Current liabilities	$ 985,000
Current ratio	3:1
Quick ratio	0.6:1

This more detailed analysis reveals that the presence of an excessive amount of inventory is making the company's liquidity look too high with the current ratio. Only by switching to the quick ratio is this problem revealed.

SOLVENCY MEASUREMENTS

The two measures noted in this section address the ability of a firm to pay off its debts. This is applicable not only to high-debt situations but also to prospective ones where the CFO must model the level of corporate solvency that will result from some major financing activity, such as an acquisition that is paid for with debt.

Times Interest Earned

The times interest earned ratio reveals the amount of excess funding that a company still has available after it has paid off its interest expense. If this ratio is close to one, then the company runs a high risk of defaulting on its debt, while any higher ratio shows that it is operating with a comfortable amount of extra cash flow that can cushion it if its business falters.

The formula is to divide the average interest expense by the average cash flow. Cash flow is a company's net income, to which all noncash expenses (such as depreciation and amortization) have been added back. This ratio should be run on a monthly basis, rather than annually, since short-term changes in the amount of debt carried or cash flow realized can have a sudden and dramatic impact on it. The formula is:

$$\frac{\text{Average cash flow}}{\text{Average interest expense}}$$

As an example, the Cautious Bankers Corporation (CBC) is investigating the possibility of lending money to the Grasp & Sons Door Handle Corporation (GSR). It collects the information in Exhibit 5.12 for the last few months of GSR's operations.

The exhibit reveals that, though GSR's interest expense is dropping, its cash flow is dropping so much faster that the company will soon have difficulty meeting its interest payment obligations. The CBC examiner elects to pass on providing the company with any additional debt.

EXHIBIT 5.12 Sample Interest Earned Data

	January	February	March
Interest expense	$45,000	$43,000	$41,000
Net income	83,500	65,000	47,000
Depreciation	17,000	17,250	17,500
Amortization	2,500	2,500	2,500
Net cash flow	103,000	84,750	67,000
Times interest earned	2.3	2.0	1.6

Debt Coverage Ratio

A key solvency issue is the ability of a company to pay its debts. This can be measured with the debt coverage ratio, which compares reported earnings to the amount of scheduled after-tax interest and principal payments to see if there is enough income available to cover the payments. If the ratio is less than one, this indicates that a company will probably be unable to make its debt payments. The measure is of particular interest to lenders, who are concerned about a company's ability to repay them for issued loans.

The formula is to divide the scheduled amount of principal payments by the inverse of the corporate tax rate. This yields the amount of after-tax income required by a company to pay back the principal. Then add the interest expense to be paid, and divide the sum into the net amount of earnings before interest and taxes. An alternative treatment of the numerator is to use earnings before interest, taxes, depreciation, and amortization, since this yields a closer approximation of available cash flow. The formula is:

$$\frac{\text{Earnings before interest and taxes}}{\text{Interest} + \dfrac{\text{Scheduled principal payments}}{(1 - \text{Tax rate})}}$$

As an example, the Egyptian Antiques Company's CFO wants to be sure that earnings will be sufficient to pay upcoming debt requirements, before implementing the owner's suggested round of Christmas bonuses. The expected operating income for the year, prior to bonuses, is $135,000. The interest expense is expected to be $18,500. The tax rate is 34 percent. Upcoming principal payments will be $59,000. The CFO uses the following debt coverage calculation to see if Christmas bonuses can still be paid:

$$\frac{\$135,000 \text{ operating income}}{\$18,500 \text{ interest} + \dfrac{\$59,000 \text{ principal payments}}{(1 \pm 34\% \text{ tax rate})}}$$

$$= \frac{\$135,000 \text{ operating income}}{\$107,894 \text{ debt payments}} = \underline{\underline{125\%}} \text{ debt coverage ratio}$$

The ratio indicates that extra funds will be available for Christmas bonuses since operating income exceeds the amount of scheduled debt payments.

RETURN ON INVESTMENT MEASUREMENTS

Investors want to know what kind of return they are getting on their investment in a company, and the CFO must be prepared to tell them. This section contains four measures that address the same issue in different ways. The return on assets employed, as well as the return on equity, are the two most commonly used measurements for return on investment, both of which the CFO should be thoroughly familiar with. The economic value-added measure is a more recent attempt at defining the value added to underlying assets by a company, while the dividend payout ratio addresses the needs of those investors who are only interested in the amount of cash paid directly to them by the company.

Return on Assets Employed

A company is deemed efficient by investors if it can generate an adequate return while using the minimum amount of assets to do so. This also keeps investors from having to put more cash into the company, and allows the entity to shift its excess cash to investments in new endeavors. Consequently, the return on assets employed measure is considered a critical one for determining a company's overall level of operating efficiency.

The formula is to divide net profits by total assets. Though the assets figure is sometimes restricted to just fixed assets, it should include accounts receivable and inventory, since both these areas can be major users of cash. The amount of fixed assets included in the denominator is typically net of depreciation; it can also be recorded at its gross value, as long as the formula derivation is used consistently over multiple time periods, thereby ensuring consistent long-term reporting.

$$\text{Return on assets employed} = \frac{\text{Net profit}}{\text{Total assets}}$$

As an example, Mr. Willston is the new CFO of Southern Sheet Metal, a metal stamping company. He purchased the company for $3 million, and wants to retrieve as much of these funds as possible by increasing the company's return on assets. He creates the table of information shown in Exhibit 5.13 about company income and assets. Based on the exhibit, the calculation of net assets employed is:

$$\frac{\text{Net profit}}{\text{Total assets}} = \frac{\$215,000}{\$2,923,000} = \underline{\underline{7.4\%}}$$

Mr. Willston is not certain which of the fixed assets can be safely eliminated while maintaining productive capacity. However, he is quite sure that the days of accounts receivable and inventory, as noted in the table, are much too high. Accordingly, he improves collection activities and early payment discounts, and drops the outstanding accounts receivable balance from 60 days to 45, reducing this asset to $384,000. He also installs an improved inventory management system, reducing the on-hand inventory balance from 90 to 60 days and this asset to $309,000. By taking these actions, he has eliminated $280,000 of assets, which he can take out of the business. He

EXHIBIT 5.13 Sample Return on Assets Data

	Year-End Results	Days on Hand
Sales	$3,070,000	
Net profit	215,000	—
Accounts receivable	512,000	60
Inventory	461,000	90
Fixed assets	1,950,000	—
Total assets	$2,923,000	—

has also improved the net assets employed measurement to 8.1 percent:

$$\frac{\text{Net profit}}{\text{Total assets}} = \frac{\$215,000}{(\$2,923,000 - \$280,000)} = \underline{\underline{8.1\%}}$$

Return on Equity Percentage

This calculation is used to determine the amount of return investors are receiving from their investment in a company. The measure can be misleading, because a management team that is eager to increase a company's return on equity can do so easily by incurring new debt and using these funds to buy back stock. Though the amount of equity is thereby reduced, making the ratio more favorable, this also means that the company has an obligation to pay back the debt and related interest. An overly zealous pursuit of this approach can result in such a large debt load that a small downturn in sales will not allow it to pay off the debt, possibly ending in bankruptcy.

The formula is to divide net income by total equity. To obtain a better picture of the ability of a company to generate a return from operating activities only, the measure can be modified to be net income *from operations*, divided by total equity. The basic formula is:

$$\text{Return on equity} = \frac{\text{Net income}}{\text{Total equity}}$$

As an example, Mr. Mo Funds, CFO of the Lounger Chairs Furniture Company, has been provided with a bonus plan that is largely based on his ability to increase the return on equity for the shareholders. There is $1,000,000 of equity on the books, of which $400,000 is closely held and the other $600,000 is held by a variety of small investors. He estimates that he can buy back $300,000 of the stock from small investors by obtaining a loan, which has an after-tax interest rate of 8 percent. He compiles the information in Exhibit 5.14 to see if the stratagem makes sense.

The strategy appears to be a good one. Though expenses will be driven up by the interest cost of the debt, the amount of equity will be reduced to such an extent that the return on equity will increase by 3 percent. However, before implementing this strategy, the CFO should investigate the company's ability to generate enough cash flow to pay off or at least maintain the debt.

EXHIBIT 5.14 Sample of Return on Equity Data

	Before Stock Buyback	After Stock Buyback
Sales	$5,000,000	$5,000,000
Expenses	4,850,000	4,850,000
Debt interest expense	—	24,000
Profits	150,000	126,000
Equity	1,000,000	700,000
Return on equity	15%	18%

Economic Value Added

Economic value added shows the incremental rate of return in excess of a firm's total cost of capital. Stated differently, this is the surplus value created on an initial investment. It is *not* just the difference between a firm's percentage cost of capital and its actual rate of return percentage, since it is designed to yield a *dollar* surplus value. If the measurement is negative, then a company is not generating a return in excess of its capital costs. It is extremely important to break down the drivers of the measurement in order to determine what parts of a company are keeping the measure from reaching its maximum potential.

Economic value added has become the most fashionable measurement for determining the ability of a company to generate an appropriate rate of return, thanks in part to the efforts of several consulting firms that specialize in installing the systems that roll up into this measurement. Some studies have shown that a favorable economic value-added measurement correlates closely with the market price achieved by a company's stock, so it can become the cornerstone of a company's efforts to increase its market value. It can also be linked to a company's compensation system, so that managers are paid (or not) based on their ability to combine efficient asset utilization with profitable operating results.

The formula is to multiply the net investment by the difference between the actual rate of return on assets and the percentage cost of capital. The three elements of the calculation are as follows:

1. *Net investment.* The net investment figure used in the formula is subject to a great deal of variation. In its most limited form, one can use the net valuation for all fixed assets. However, some assets might be subject to accelerated depreciation calculations, which greatly reduce the amount of investment used in the calculation; a better approach is to use the straight-line depreciation methodology for all assets, with only the depreciation *period* varying by type of asset. A variation on this approach is to also add research and development (R&D), as well as training costs, back into the net investment, on the grounds that these expenditures are made to enhance the company's value over the long term. Also, if assets are leased rather than owned, they should be itemized as assets at their fair market value and included in the net investment figure, so that managers cannot use financing tricks to enhance their return on investment.
2. *Actual return on investment.* When calculating the return on investment, shift R&D, as well as training expenses, out of operating expenses and into net investment (as noted in the last point). In addition, eliminate any unusual adjustments to net income that do not involve ongoing operations. This results in an income figure related to just those costs that can be legitimately expensed within the current period.
3. *Cost of capital.* The formulation of the cost of capital is complex; rather than repeat what has been covered elsewhere see Chapter 8, ''Cost of Capital.''

The formula is:

$$(\text{Net investment}) \times (\text{Actual return on investment} - \text{Percentage cost of capital})$$

EXHIBIT 5.15 Sample Cost of Capital Data

Type of Funding	Amount of Funding	Cost of Funding
Debt	$ 2,500,000	8.5%
Preferred stock	$ 4,250,000	12.5%
Common stock	$ 8,000,000	16.0%
Total	$14,750,000	**13.7%**

As an example, the CFO of the Miraflores Manufacturing Company wants to see if the company has a positive economic value added. Based on her calculation of outstanding debt, preferred stock, and common stock, as noted in Exhibit 5.15, she estimates that the firm's cost of capital is 13.7 percent.

She then takes the balance sheet and income statement, and redistributes some of the accounts in them in accordance with Exhibit 5.16 so that some items that are usually expensed under GAAP are shifted into the investment category.

The return on investment, as based on the net income and investment figures in the preceding table, is 13.5 percent (net income divided by the total net investment). Using this information, she derives the following calculation to determine the amount of economic value added:

$$\begin{aligned}&(\text{Net investment}) \times (\text{Actual return on assets} - \text{Percentage cost of capital})\\&= (\$3,115,000\,\text{net investment}) \times (13.5\%\,\text{actual return} - 13.7\%\,\text{cost of capital})\\&= \$3,115,000\,\text{net investment} \times -0.2\% = \underline{\underline{-\$6,230}}\,\text{economic value added}\end{aligned}$$

In short, the company is destroying its capital base by creating actual returns that are slightly less than its cost of capital.

EXHIBIT 5.16 Sample Net Investment Data

Account Description	Performance	Net Investment
Revenue	$8,250,000	
Cost of goods sold	5,950,000	
General and administrative	825,000	
Sales department	675,000	
Training department		$ 100,000
Research and development		585,000
Marketing department	380,000	
Net income	**$ 420,000**	
Fixed assets		2,080,000
Cost of patent protection		125,000
Cost of trademark protection		225,000
Total net investment		**$3,115,000**

Dividend Payout Ratio

The dividend payout ratio tells an investor what proportion of earnings are being paid back in the form of dividends. This is particularly important when the ratio is greater than one, since it indicates that a company is dipping into its cash reserves in order to pay dividends, which is not a sustainable trend. Alternatively, if only a small proportion of earnings are being paid back as dividends, you can assume that the remaining cash is being plowed back into operations, which should result in an increase in the stock price. If the stock price is stagnant or declining, then investors have a valid concern regarding the proper use of corporate earnings.

The formula is to divide the dividend per share by the earnings per share. It is allowable to include the cash flow from nonoperating items in the earnings per share figure, since they will impact the amount of cash available for distribution as dividends. However, if nonoperating items having no immediate cash flow impact, such as restructuring reserves, are included in the earnings per share figure, then remove them; such items do not properly reflect a company's ability to pay dividends. Also, it is sometimes necessary to add expected capital expenditures to the earnings per share figure, if this is expected to require a significant proportion of the cash provided by earnings. The formula is:

$$\text{Dividend payout ratio} = \frac{\text{Dividend per share}}{\text{Earnings per share}}$$

As an example, Mr. Jones has invested a large part of his savings in the stock of Illinois Gas Distribution Company, operator of a nationwide gas pipeline. He wants to see if the company can continue to issue its semiannual dividend of $4.00 per share, based on its most recent earnings report. The report contains the information shown in Exhibit 5.17.

Mr. Jones adjusts the $15,430,000 by adding back $7,000,000 in goodwill amortization, depreciation of $3,500,000, and a restructuring reserve of $4,500,000, since none of them involves cash flows (though the restructuring reserve may require a cash outflow at some point in the future). He also adds back $3,750,000 of capital expenditures. The net income after all of these adjustments is $34,180,000. He then calculates the dividend payout ratio using the following formula:

$$\text{Earnings per share} = \frac{\$34,180,000 \text{ adjusted net income}}{5,450,000 \text{ shares}} = \$6.27/\text{share}$$

$$\frac{\$4.00 \text{ dividend per share}}{\$6.27/\text{share}} = 64\% \text{ dividend payout ratio}$$

EXHIBIT 5.17 Sample Dividend Payment Data

Net income	$15,430,000
Goodwill amortization	$ 7,000,000
Depreciation	$ 3,500,000
Capital expenditures	$ 3,750,000
Restructuring reserve	$ 4,500,000
Number of shares outstanding	5,450,000

The ratio reveals that the company is capable of paying out dividends from its earnings per share. However, nearly all of the funds acquired through earnings are being paid out, so there is some danger of a cutback in dividends in the future if the company's profit level drops by a small amount, or if it needs to use its earnings to fund an increase in its rate of growth.

MARKET PERFORMANCE MEASUREMENTS

The CFO of a publicly held company must be aware of the organization's key market performance measurements on a daily basis, in order to field calls from analysts about them. The sales to stock price ratio reveals the expectations of investors about an organization's ability to increase its sales volume, the price/earnings ratio reveals investors' same expectations regarding corporate profits, and the quality of earnings ratio provides some indication of the level of artificial bolstering of reported results.

Sales to Stock Price Ratio

This ratio indicates the opinion of investors regarding a company's ability to increase its sales volume. If sales increase and there is no change in the stock price, then the rate of growth in sales falls within the expectations of investors. If there is an increase in the stock price, then sales have exceeded their expectations; a drop in the stock price is indicative of sales levels that do not meet their expectations.

The formula is to divide annualized net sales by the average common stock price for the reporting period. The annualized net sales figure used in this calculation should be the prospective sales figure for the current reporting year, since this represents the announced sales figure that company management has released to investors, and is the number on which they are basing their decisions to buy or hold the stock. Use the average common stock price instead of the ending stock price, since this removes some fluctuation from the price:

$$\frac{\text{Annual net sales}}{\text{Average common stock price}}$$

As an example, the CFO of the Gonging Clock Company has been given a stock compensation package that will reward him richly if he can double the stock price within one year. He elects to do so by focusing solely on increases in sales. The display clocks that the company produces are sold almost entirely within the Christmas selling season. To increase sales, he allows customers to pay for their clocks within 180 days, instead of the usual 30 days, and also offers discounts for bulk purchases. As a result, the company experiences a massive increase in sales, investors bid up the stock price, and the CFO retires with a large stock bonus. Unfortunately, the CFO's actions so thoroughly clog the company's distribution pipeline with product that its sales volume in the following year dives down to less than one-quarter of the sales level in the preceding year. The board of directors learns its lesson from this experience, and subsequently revises its senior management incentive plan to focus on more long-term-value objectives.

Price/Earnings Ratio

By comparing earnings to the current market price of the stock, you can obtain a general idea of the perception of investors of the quality of corporate earnings. For example, if this ratio is substantially lower than the average rate for the industry, it can indicate an expectation among investors that a company's future earnings are expected to trend lower. Alternatively, a high ratio could indicate the excitement of investors over a new patent that a company has just been granted, or the expected favorable results of a lawsuit—the possible explanations are legion. The key point when using this ratio is that a result that varies from the industry average probably indicates a change in investor perceptions from the rest of the industry in regard to a company's ability to continue to generate income.

The formula is to divide the average common stock price by the net income per share. The net income per share figure is typically used on a fully diluted basis, accounting for the impact of options, warrants, and conversions from debt that may increase the number of shares outstanding. The formula for the price/earnings (P/E) ratio is:

$$\text{P/E ratio} = \frac{\text{Average common stock price}}{\text{Net income per share}}$$

As an example, an investment analyst wants to determine the price/earnings ratio for the Mile-High Dirigible Company. The industry average price/earnings ratio for lighter-than-air transport manufacturers is 18:1. She accumulates the information shown in Exhibit 5.18.

If she chooses to leave the extraordinary income in the total net income figure, then she uses the following calculation to derive the price/earnings ratio:

$$\frac{\$32.87 \text{ stock price}}{(\$8{,}500{,}000 \text{ net income}/3{,}875{,}000 \text{ shares outstanding})} = \underline{\underline{15:1}} \text{ P/E}$$

So far, the price/earnings ratio appears to compare favorably to the industry average. However, if she excludes the extraordinary gain from net income, the earnings per share figure drops to $1.61 per share. When incorporated into the price/earnings formula, this change increases the ratio to 20:1, which is higher than the industry average. Accordingly, she considers the stock to be overpriced relative to the industry, and forbears from recommending it to her clients.

Quality of Earnings Ratio

It can be extremely difficult for an outsider such as a stock analyst, bank officer, or investor to determine if the earnings reported by a company are based on a foundation of

EXHIBIT 5.18 Sample Price/Earnings Data

Most recent stock price	$ 32.87
Number of shares outstanding	3,875,000
Net income	$8,500,000
Extraordinary income	$2,250,000

solid operational earnings, or if the company is taking advantage of a broad array of accounting tricks that are allowable under generally accepted accounting principles in order to artificially bolster its earnings. A simple ratio for determining the quality of reported earnings is the quality of earnings ratio. This measurement essentially compares the reported earnings level to reported cash flow from operations; if the numbers are close, then the reported earnings number probably fairly reflects actual results. Even if the ratio appears to indicate that there is considerable divergence between cash flow and earnings, there might be a good reason for the change. However, if cash flow from operations is persistently well below the level of reported earnings, then some degree of accounting trickery is likely to be occurring.

The formula is to subtract cash from operations from net earnings, and divide the result by average total assets. The formula follows:

$$\text{Quality of earnings} = \frac{\text{Earnings} - \text{Cash from operations}}{(\text{Beginning assets}) + (\text{Ending assets})/2}$$

The percentage resulting from this formula should be very low, with a number close to zero indicating a high quality of earnings. Any number higher than 6 percent indicates a low quality of earnings.

As an example, Bonzo Pranks Company, operator of a chain of publicly held joke shops, has issued annual financial statements showing earnings of $20 million and cash flow from operations of $4 million. The total assets it reports at the beginning of the year are $94 million, and $106 million at the end of the year. Its quality of earnings ratio is:

$$\frac{\$20\text{ million earnings} \pm \$4\text{ million cash from operations}}{(\$94\text{ million beginning assets} + \$106\text{ ending assets})/2} = 16\%$$

Bonzo appears to be playing a prank on its investors! Bonzo's earnings are much higher than its cash from operations, resulting in an inordinately high quality of earnings ratio.

SUMMARY

The 28 ratios covered in this chapter should be on a CFO's short list of potential measurements. However, other ratios make more sense under certain circumstances, such as the type of industry, the presence (or not) of manufacturing versus service operations, or whether a company is privately or publicly held. For a more complete list of ratios from which to choose, refer to Appendix B, which contains more than 120 ratios.

CHAPTER SIX

6 Control Systems

ONE OF THE CHIEF roles of the CFO is to examine each process that involves financial transactions to see where there is a risk of losing assets, and installing control points that will prevent those losses from occurring. For example, it would be a major potential weakness in the billing process if the shipping department never informs the accounting staff of a shipment, resulting in no invoice being sent to a customer. In this chapter, we review the need for control systems, the types of fraudulent activities that make the use of controls particularly important, and describe over 85 controls that can be added to the typical accounting system.

Since controls frequently have a cost associated with them, it is also possible to take them *out of* an accounting system in order to save money; we will discuss the process of spotting these controls and evaluating their usefulness before removing them.

NEED FOR CONTROL SYSTEMS

The most common situation in which a control point is needed is when an innocent error is made in the processing of a transaction. For example, an accounts payable clerk neglects to compare the price on a supplier's invoice with the price listed on the authorizing purchase order, which results in the company paying more than it should. Similarly, the warehouse staff decides to accept a supplier shipment, despite a lack of approving purchasing documentation, resulting in the company being obligated to pay for something that it does not need. These types of actions could occur based on poor employee training, inattention, or the combination of a special set of circumstances that were unforeseen when the accounting processes were originally constructed. There can be an extraordinary number of reasons why a transactional error arises, which can result in errors that are not caught, and which, in turn, lead to the loss of corporate assets.

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Controls act as review points at those places in a process where these types of errors have a habit of arising. The potential for some errors will be evident when a process-flow expert reviews a flowchart that describes a process, simply based on his or her knowledge of where errors in similar processes have a habit of arising. Other errors will be specific to a certain industry—for example, the casino industry deals with enormous quantities of cash, and so has a potential for much higher monetary loss through its cash-handling processes than do similar processes in other industries. Also, highly specific circumstances within a company might generate errors in unlikely places. For example, a manufacturing company that employs mostly foreign workers who do not speak English will experience extra errors in any processes where these workers are required to fill out paperwork, simply due to a reduced level of comprehension of what they are writing. Consequently, the typical process can be laced with areas in which a company has the potential for loss of assets.

Many potential areas of asset loss will involve such minor or infrequent errors that accountants can safely ignore them and avoid the construction of any offsetting controls. Others have the potential for very high risk of loss, and so are shored up with not only one control point, but a whole series of multilayered cross-checks that are designed to keep all but the most unusual problems from arising or being spotted at once.

The need for controls is also driven by the impact of their cost and interference in the smooth functioning of a process. If a control requires the hiring of an extra person, then a careful analysis of the resulting risk mitigation is likely to occur. Similarly, if a highly efficient process is about to have a large and labor-intensive control point plunked down into the middle of it, it is quite logical that an alternative approach should be found that provides a similar level of control, but from outside the process.

The controls installed can be of the preventive variety, which are designed to spot problems as they are occurring (such as online pricing verification for the customer order data entry staff), or of the detective variety, which spot problems after they occur, so that the accounting staff can research the associated problems and fix them after the fact (such as a bank reconciliation). The former type of control is the best, since it prevents errors from ever being completed, whereas the second type results in much more labor by the accounting staff to research each error and correct it. Consequently, evaluate the type of control point installed based on its cost of subsequent error correction.

All of these factors—perceived risk, cost, and efficiency—will have an impact on a company's need for control systems, as well as the preventive or detective type of each control that is contemplated.

TYPES OF FRAUD

The vast majority of transactional problems that controls guard against are innocent errors that are caused by employees. These tend to be easy to spot and correct when the proper control points are in place. However, the most feared potential loss of assets is not through these mistakes, but through deliberate fraud on the part of employees, since

these transactions are deliberately masked, making it much more difficult to spot them. The most common types of fraud that are perpetrated are as follows:

- *Cash and investment theft.* The theft of cash is the most publicized type of fraud, and yet the amount stolen is usually quite small, when compared to the byzantine layers of controls that are typically installed to prevent such an occurrence. The real problem in this area is the theft of investments, when someone sidesteps existing controls to empty a company's entire investment account. Accordingly, the CFO should spend the most time designing controls over the movement of invested funds.
- *Expense account abuse.* Employees can use fake expense receipts, apply for reimbursement of unapproved items, or apply multiple times for reimbursement through their expense reports. Many of these items are so small that they are barely worth the cost of detecting, while others, such as the duplicate billing to the company of airline tickets, can add up to very large amounts. Controls in this area tend to be costly and time consuming.
- *Financial reporting misrepresentation.* Though no assets appear to be stolen, the deliberate falsification of financial information is still fraud, because it impacts a company's stock price by misleading investors about financial results. Controls in this area should involve internal audits to ensure that processes are set up correctly, as well as full audits (not reviews or compilations) by external auditors.
- *Fixed assets theft.* Though the fixed assets name implies that every asset is big enough to be immovable, many items—particularly computers—can be easily stolen and then resold by employees. In many instances, there is simply no way to prevent the loss of assets without the use of security guards and surveillance equipment. Given that many organizations do not want to go that far, the most common control is the purchase of insurance with a minimal deductible, so that losses can be readily reimbursed.
- *Inventory and supplies theft.* The easiest theft for an employee is to remove inventory or supplies from a storage shelf and walk away with them. Inventory controls can be enhanced through the use of fencing and limited access to the warehouse, but employees can still hand inventory out through the shipping and receiving gates. The level of controls installed in this area will depend on the existing level of pilferage, and the value of inventory and supplies.
- *Nonpayment of advances.* The employees who need advances, either on their pay or for travel, are typically those who have few financial resources. Consequently, they may not pay back advances unless specifically requested to do so. This requires detailed tracking of all outstanding advances.
- *Purchases for personal use.* Employees with access to company credit cards can make purchases of items that are diverted to their homes. Controls are needed that require detailed records of all credit card purchases, rather than relying on a cursory scan and approval of an incoming credit card statement.
- *Supplier kickbacks.* Members of the purchasing staff can arrange with suppliers to source purchases through them in exchange for kickback payments directly to the purchasing staff. This usually results in a company paying more than the market rate for those items. This is a difficult type of fraud to detect, since it requires an ongoing review of prices paid as compared to a survey of market rates.

Fraud problems are heightened in some organizations, because the environment is such that fraud is easier to commit. For example, a rigorous emphasis on increasing profits by top management may lead to false financial reporting in order to ''make the numbers.'' Problems can also arise if the management team is unwilling to pay for controls or for a sufficient number of supervisory personnel, if it is dominated by one or two people who can override existing controls, or if it has high turnover, so that new managers have a poor grasp of existing controls. Fraud is also common when the organizational structure is very complex or the company is growing rapidly, since both situations tend to result in fewer controls, which create opportunities to remove assets. Consequently, fraud is much more likely if there are unrealistic growth objectives, there are problems within the management ranks, or if controls are not keeping pace with changes in the organizational structure.

KEY CONTROLS

There are thousands of possible controls that can be used to ensure that a company maintains proper control over its assets. The following list represents the 14 most common controls found in the majority of organizations. These can be supplemented by additional controls in cases where the potential for loss of assets is considered to be exceptionally high, with the reverse being true in other instances.

1. *Cash.* The handling of cash is considered to be rife with control issues, resulting in perhaps an excessive use of controls. Though many potential controls are available, the CFO should attempt to create a mix of controls that balances the controls' costs against incremental gains. Here are some of the more common available controls:
   - *Compare check register to actual check number sequence.* The computer's list of checks printed should exactly match the checks that have actually been used. If not, this can be evidence that someone has removed a check from the check stock in hopes that it will not be noticed. This irregularity is most common for laser check stock, since these checks are stored as separate sheets, rather than as a continuous roll of check stock, and so can be more easily pilfered.
   - *Conduct spot audits of petty cash.* It is possible to misrepresent the contents of a petty cash box through the use of miscellaneous receipts and IOU vouchers. By making unscheduled audits, you can sometimes spot these irregularities.
   - *Control check stock.* The check stock cannot be stored in the supply closet along with the pencils and paper, because anyone can remove a check from the stack, and then is only a forged signature away from stealing funds from the company. Instead, the check stock should be locked in a secure cabinet, to which only authorized personnel have access.
   - *Control signature plates.* If anyone can access the company's signature plates, then it is not only possible to forge checks but also to stamp authorized signatures on all sorts of legal documents. Accordingly, these plates should always be kept in the company safe.

- *Create a checklist in the mail room.* If there is any chance that someone in the accounting department is removing customer checks before they are included in the daily deposit records, then the mail room staff can be asked to create a separate list, which can later be compared to the deposit slip list to see if there are any differences.
- *Review restrictive endorsements before cashing checks.* A customer could insert a restrictive clause on a check payment that limits a company's ability to legally collect additional funds. Restrictive endorsements are rare, so most organizations do not conduct this review. However, if there is a reasonable probability of losses, then train the cashier to examine checks for restrictive endorsements and withhold them from the daily deposit until the company lawyer can review them.
- *Deposit all checks daily.* If checks are kept on hand for several days, there is an increased likelihood that someone will gain access to them and cash them into his or her own account. Consequently, bank deposits should be made every day.
- *Transport cash in a locked cash pouch.* To reduce the risk of unauthorized access to any cash being transported for deposit, always store it in a locked cash pouch. The most elaborate extension of this concept is to hire an armored truck to transport the cash, which is mandatory for larger quantities of cash.
- *Reconcile the validated deposit slip to the original bank deposit ticket.* Once deposited, the bank will issue a validated receipt for the cash. Someone other than the person who made the deposit should compare the original deposit ticket to the validated receipt and investigate any differences. This control is needed to ensure that the person making the deposit does not remove cash during delivery to the bank.
- *Divert incoming cash to a lockbox.* If cash or checks from customers never reach a company, then a host of control problems related to the potential misuse of that cash goes away. To do this, a lockbox can be set up that is controlled by the company's bank, and customers can be asked to send their payments to the lockbox address.
- *Fill in empty spaces on checks.* If the line on a check that lists the amount of cash to be paid is left partially blank, a forger can insert extra numbers or words that will result in a much larger check payment. This can be avoided by having the software that prints checks insert a line or series of characters in the spaces.
- *Fill out petty cash vouchers in ink.* Petty cash receipts can be modified to make it appear that they are larger than was really the case, with the perpetrator removing the difference from the cash box. This issue can be resolved by requiring that all vouchers be filled out in ink.
- *Limit petty cash reserves.* If there is little money in a petty cash box, then there is less incentive for anyone to steal the box. If there is a large amount of cash volume flowing through the box, then a useful alternative is procurement cards.
- *Install a petty cash contact alarm.* A simple battery-powered contact alarm can be installed on a petty cash drawer that triggers a buzzer or flashing light. If the petty cash box is located in a relatively public location, this may act as a deterrent to anyone attempting to access petty cash.

- *Require supervisory approval of cash refunds.* One way to steal cash is to take money from the cash register and record a refund on the cash register tape. By requiring a supervisory password or key entry every time a refund is issued, the cash register operator has no opportunity to steal cash by this method. If there is a minimum level above which supervisory approval is needed for a refund, then review the cash register tape for an unusually large number of cash refunds just below the approval limit.
- *Mutilate voided checks.* A voided check can be retrieved and cashed. To keep this from happening, use a stamping device that cuts the word ''void'' into the surface of the check, thereby sufficiently mutilating it so that it cannot be used again.
- *Perform bank reconciliations.* This is one of the most important controls anywhere in a company, for it reveals all possible cash inflows and outflows. Carefully compare the bank statement's list of checks cashed to the company's internal records to ensure that checks have not been altered once they leave the company or that the books have not been altered to disguise the amount of the checks. It is also necessary to compare the bank's deposit records to the books to see if there are discrepancies that could be caused by someone taking checks or cash out of the batched bank deposits. Further, compare the records of all company bank accounts to see if any check kiting is taking place. In addition, it is absolutely fundamental that the bank reconciliation be completed by someone who is entirely unassociated with the accounts payable, accounts receivable, or cash receipts functions, so that there is no way for anyone to conceal their wrongdoings by altering the bank reconciliation. Finally, call up online bank records through the Internet in order to conduct a reconciliation every day. This is a useful approach, since irregularities can be spotted and corrected much more quickly.
- *Use metrics analysis to detect skimming.* Skimming is the removal of cash prior to its entry into the accounting system, usually involving the removal of cash from a sale transaction and then destroying all evidence of the sale. If there is a significant amount of skimming, its presence can be indicated through several metrics: decreasing cash to total current assets, decreasing ratio of cash to credit card sales, and flat or declining sales with an increasing cost of sales.
- *Review uncashed checks.* If checks have not been cashed, it is possible that they were created through some flaw in the accounts payable system that sent a check to a nonexistent supplier. An attempt should be made to contact these suppliers to see if there is a problem.
- *Update signature cards.* A company's bank will have on file a list of check signatories that it has authorized to sign checks. If one of these people leaves the company for any reason, he or she still has the ability to sign company checks. To avoid this control problem, update the bank's signature card as soon as a check signer leaves the company.
- *Stamp incoming checks with ''deposit to account number xxx.''* It is possible that employees with access to customer checks will try to cash them, as might anyone with access to the mail once it has left the company. This can be made more difficult by stamping the back of the check with ''deposit to account

number xxx,'' so that they would have to deface this stamp in order to cash the check.

- *Require cash application staff to take vacations.* Lapping involves taking money paid by customer A, then using cash from customer B to pay customer A's account, and so on. This type of fraud tends to be difficult to maintain, requiring constant attention by the person perpetrating the fraud. Requiring employees to take their designated vacations will frequently bring lapping situations to light while they are absent.

2. *Investments.* The shifting of investment funds is the area in which a person has the best chance for stealing large quantities of company funds, or of placing them in inappropriate investments that have a high risk of loss. The following controls are designed to contain these risks:
   - *Impose investment limits.* When investing its excess funds, a company should have a policy that requires it to only invest certain amounts in particular investment categories or vehicles. For example, only the first $100,000 of funds are insured through a bank account, so excess funding beyond this amount can be shifted elsewhere. As another example, if the board of directors thinks that there is too much risk in junk bond investments, it will place a general prohibition on this type of investment. These sorts of policies can be programmed into a treasury workstation, so that the system will automatically flag investments that fall outside a company's preset investment parameters.
   - *Obtain and document quotes for each investment.* An investment officer might have a favorite bank and will continue to invest with it, even if its rates are not competitive. It is also common for the investment staff to not want to go through the effort of obtaining multiple quotes on a regular basis. By requiring them to complete a quotation sheet, this control ensures that the best investment rate is obtained.
   - *Require authorizations to shift funds among accounts.* A person who is attempting to fraudulently shift funds out of a company's accounts must have approval authorization on file with one of the company's investment banks to transfer money out to a noncompany account. This type of authorization can be strictly controlled through signatory agreements with the banks. It is also possible to impose strict controls over the transfer of funds *between* company accounts, since a fraudulent person might uncover a loophole in the control system whereby a particular bank has not been warned *not* to allow fund transfers outside of a preset range of company accounts, and then shifts all funds to that account and thence to an outside account.
3. *Accounts receivable.* Controls are needed in the accounts receivable area to ensure that employees do not take payments from customers and then hide the malfeasance by altering customer receivable records. The most common controls are as follows:
   - *Compare checks received to applications made against accounts receivable.* It is possible for an accounts receivable clerk with the dual responsibility of cash application to cash a check to his or her personal account, and then hide evidence of the stolen funds by continually applying subsequent cash received against the oldest accounts receivable. This can be spotted by conducting an occasional comparison of checks listed on the deposit slip for a given day to the accounts against which the funds were credited.

- *Confirm receivables balances.* If an employee is falsely applying cash from customers to different accounts in order to hide the loss of some cash that he or she has extracted from the company, it is possible to detect this problem by periodically sending out a confirmation form to customers to verify what they have paid to the company.
- *Require approval of bad debt expenses.* A manager should approve any bad debt write-offs from the accounts receivable listing. Otherwise, it is possible for someone to receive a check from a customer, cash it into their own account, and write off the corresponding account receivable as a bad debt. This control can be greatly enhanced by splitting the cash receipts function away from the collections function, so that it would require collusion to make this type of fraud work.
- *Require approval of credits.* It is possible for someone in the accounts receivable area to grant a credit to a customer in exchange for a kickback from the customer. This can be prevented through the use of approval forms for all credits granted, as well as a periodic comparison of credits granted to related approval forms. It is acceptable to allow the accounting staff to grant very small credits in order to clean up miscellaneous amounts on the accounts receivable listing, but these should be watched periodically to see if particular customers are accumulating large numbers of small credits.
- *Audit credit memos and supporting documentation.* The internal audit staff should periodically schedule an examination of a sample of all issued credit memos, as well as the supporting documentation for each one, and the security of any unused prenumbered credit memo forms. Audit tasks should include a review for the presence of an authorized approval signature, as well as for a received item that matches the quantity indicated on the credit memo.

4. *Inventory.* A company's inventory can be so large and complex that extensive controls are needed simply to give it any degree of accuracy at all. Consequently, virtually all of the following controls are recommended to achieve a high level of inventory record accuracy:
   - *Conduct inventory audits.* If no one ever checks the accuracy of the inventory, it will gradually vary from the book inventory, as an accumulation of errors builds up over time. To counteract this problem, either schedule a complete recount of the inventory from time to time or else an ongoing cycle count of small portions of the inventory each day. Whichever method is used, it is important to conduct research in regard to why errors are occurring, and attempt to fix the underlying problems.
   - *Investigate negative-balance perpetual records.* A record in the perpetual inventory database contains a running balance of the current on-hand inventory quantity. If this number ever reaches a negative balance, always investigate to determine what transaction or counting error caused the problem, and take steps to ensure that it does not happen again.
   - *Control access to bill of material and inventory records.* The security levels assigned to the files containing bill of material and inventory records should allow access to only a very small number of well-trained employees. By doing so, the risk of inadvertent or deliberate changes to these valuable records will be minimized. The security system should also store the keystrokes and user access codes for

anyone who has accessed these records, in case evidence is needed to prove that fraudulent activities have occurred.

- *Keep bill of material accuracy levels at a minimum of 98 percent.* The bills of material are critical for determining the value of inventory as it moves through the work-in-process stages of production and eventually arrives in the finished goods area, since they itemize every possible component of each product. Regularly compare these records to actual product components to verify that they are correct, and track their accuracy.
- *Conduct receiving inspections with a receiving checklist.* The receiving staff is responsible for inspecting all delivered items. If they perform only a perfunctory inspection, then the company is at risk of having accepted goods with a variety of problems. To ensure that a complete inspection is made, create a receiving checklist describing specific inspection points, such as timeliness of the delivery, quality, quantity, and the presence of an authorizing purchase order number. Require the receiving staff to initial each item on the receiving checklist and then file it with the daily receiving report.
- *Require approval to sign out inventory beyond amounts on pick list.* If there is a standard pick list used to take raw materials from the warehouse for production purposes, then this should be the standard authorization for inventory removal. If members of the production staff require any additional inventory, they should go to the warehouse gate and request it, and the resulting distribution should be logged out of the warehouse. Furthermore, any inventory that is left over after production is completed should be sent back to the warehouse and logged in. By using this approach, the CFO can tell if there are errors in the bills of material that are used to create pick lists, since any extra inventory requisitions or warehouse returns probably represent errors in the bills.
- *Require transaction forms for scrap and rework transactions.* A startling amount of materials and associated direct labor can be lost through the scrapping of production or its occasional rework. This tends to be a difficult item to control, since scrap and rework can occur at many points in the production process. Nonetheless, the manufacturing staff should be well trained in the use of transaction forms that record these actions, so that the inventory records will remain accurate.
- *Restrict warehouse access to designated personnel.* Without access restrictions, the company warehouse is like a large store with no prices—just take all you want. This does not necessarily mean that employees are taking items from stock for personal use—they could be removing excessive inventory quantities for production purposes, which leads to a cluttered production floor. Also, this leaves the purchasing staff with the almost impossible chore of trying to determine what is in stock and what needs to be bought for immediate manufacturing needs. Consequently, a mandatory control over inventory is to fence it in and closely restrict access to it.
- *Segregate customer-owned inventory.* If customers supply a company with some parts that are used when constructing products for them, it becomes very easy for this inventory to be mingled with the company's own inventory, resulting in

a false increase in its inventory valuation. Though it is certainly possible to assign customer-specific inventory codes to these inventory items in order to clearly identify them, a more easily discernible control is to physically segregate these goods in a different part of the warehouse.

- *Review inventory for obsolete items.* The single largest cause of inventory valuation errors is the presence of large amounts of obsolete inventory. To avoid this problem, periodically print a report that lists which inventory items have *not* been used recently, including the extended cost of these items. A more accurate variation is to print a report itemizing all inventory items for which there are no current production requirements (only possible if a material requirements planning system is in place). Alternatively, create a report that compares the amount of inventory on hand to annual historical usage of each item. With this information in hand, schedule regular meetings with the materials manager to determine what inventory items should be scrapped, sold off, or returned to suppliers.
- *Move obsolete inventory to segregated area.* It is much easier to review and disposition obsolete inventory if it is congregated in a single area, rather than scattered throughout the warehouse.

5. *Employee advances.* Employees may ask for advances on their next paycheck, or to cover the cost of their next trip on the company's behalf. In either case, it is easy to lose track of the advance. The following controls are needed to ensure that an advance is eventually paid back:
   - *Continually review all outstanding advances.* When advances are paid to employees, it is necessary to continually review and follow up on the status of these advances. Employees who require advances are sometimes in a precarious financial position, and must be issued constant reminders to ensure that the funds are paid back in a timely manner. A simple control point is to have a policy that requires the company to automatically deduct all advances from the next employee paycheck, thereby greatly reducing the work of tracking advances.
   - *Require approval of all advance payments to employees.* When employees request an advance for any reason—as a draw on the next paycheck or as funding for a company trip—this should always require formal signed approval from their immediate supervisors. The reason is that an advance is essentially a small, short-term loan, which would also require management approval. The accounts payable supervisor or staff should only be allowed to authorize advances for very small amounts.
6. *Fixed assets.* The purchase and sale of fixed assets require special controls to ensure that proper authorization has been obtained to conduct either transaction, and also to ensure that the funds associated with fixed assets are properly accounted for. Implement all of the following controls to ensure that these goals are achieved:
   - *Ensure that fixed asset purchases have appropriate prior authorization.* A company with a capital-intensive infrastructure might find that its most important controls are over the authorization of funds for new or replacement capital projects. Depending on the potential amount of funding involved, these controls may include a complete net present value (NPV) review of the cash flows associated with each prospective investment, as well as multilayered approvals that reach all the way up to the board of directors. A truly comprehensive control

system will also include a post-completion review that compares the original cash flow estimates to those actually achieved, not only to see if a better estimation process can be used in the future, but also to see if any deliberate misrepresentation of estimates was initially made.

- *Conduct a post-completion project analysis.* Managers have been known to make overly optimistic projections in order to make favorable cases for asset acquisitions. This issue can be mitigated by conducting regular reviews of the results of asset acquisitions in comparison to initial predictions, and then tracing these findings back to the initiating managers. This approach can also be used at various milestones during the construction of an asset to ensure that costs incurred match original projections.
- *Assign responsibility for assets.* There is a significant risk that assets will not be carefully tracked through the company once they are acquired. To avoid this, formally assign responsibility for each asset to the department manager whose staff uses the asset, and send all managers a quarterly notification of which assets are under their control. Even better, persuade the human resources manager to include "asset control" as a line item in the formal performance review for all managers.
- *Verify that correct depreciation calculations are being made.* Though there is no potential loss of assets if incorrect depreciation calculations are being made, it can result in an embarrassing adjustment to the previously reported financial results at some point in the future. This control should include a comparison of capitalized items to the official corporate capitalization limit, in order to ensure that items are not being inappropriately capitalized and depreciated. The control should also include a review of the asset categories in which each individual asset has been recorded, in order to ensure that an asset has not been misclassified, and therefore incorrectly depreciated.
- *Verify that fixed asset disposals are properly authorized.* A company does not want to have a fire sale of its assets taking place without any member of the management team knowing about it. Consequently, properly authorize the sale of assets before any sale transaction is initiated, if only to ensure that the eventual price paid by the buyer is verified as being a reasonable one.
- *Verify that cash receipts from asset sales are properly handled.* Employees sometimes sell a company's assets, pocket the proceeds, and report to the company that the asset was actually scrapped. This control issue can be reduced by requiring that a bill of sale or receipt from a scrapping company accompany the file for every asset that has been disposed of.
- *Compare fixed asset serial numbers to the existing serial number database.* There is a possibility that employees are acquiring assets, selling them to the company, then stealing the assets and selling them to the company again. To spot this behavior, always enter the serial number of each acquired asset in the fixed asset master file, and then run a report comparing serial numbers for all assets to see if there are duplicate serial numbers on record.
- *Verify that fixed assets are being utilized.* Many fixed assets are parked in a corner and neglected, with no thought to their being profitably sold off. To see if this problem is occurring, the accounting staff should conduct a periodic review of all

fixed assets, which should include a visual inspection and discussion with employees to see if assets are no longer in use.

- *Test for asset impairment.* There are a variety of circumstances under which the net book value of an asset should be reduced to its fair value, which can result in significant reductions in the recorded value of an asset. This test requires a significant knowledge of the types of markets in which a company operates, the regulations to which it is subject, and the need for its products within those markets. Consequently, only a knowledgeable person who is at least at the level of a controller or CFO should be relied on to detect the presence of assets whose values are likely to have been impaired.

7. *Accounts payable.* This is one of the most common areas in which the misuse of assets will arise, as well as the one where transactional errors are most likely to occur. Nonetheless, an excessive use of controls in this area can result in a significant downgrading in the performance of the accounts payable staff, so use a judiciously applied blend of controls.
   - *Audit credit card statements.* When employees are issued company credit cards, there will be some risk that the cards will be used for noncompany expenses. To avoid this, spot-check a few line items on every credit card statement, if you do not conduct a complete review of every statement received. For those employees who have a history of making inappropriate purchases, but for whom a credit card is still supplied, it is also possible to review their purchases online (depending on what services are offered by the supplying bank) on the same day that purchases are made, and alter credit limits at the same time, thereby keeping tighter control over credit card usage.
   - *Compare payments made to the receiving log.* With the exception of payments for services or recurring payments, all payments made through the accounts payable system should have a corresponding record of receipt in the receiving log. If not, there should be grounds for investigation into why a payment was made. This can be a difficult control to implement if there is not an automated three-way matching system already in place, since a great deal of manual cross-checking will otherwise be needed.
   - *Compare the invoice numbers of supplier invoices received.* When suppliers are not paid promptly, they will probably send another copy of an invoice to the company, on the grounds that the first one must have been lost. If the first invoice is just being processed for payment, there is a good chance that the company will pay for both the original invoice and its copy. Consequently, the accounting software should automatically compare the invoice numbers of all invoices received, to see if there are duplications.
   - *Impose limitations on credit card purchases.* When credit cards are issued to employees, a company has a number of possible restrictions it can place on the cards that will help to keep employee spending within certain predefined limits. For example, if the card is issued by a specific store, then purchases can be limited to that entity. However, since this can result in a large number of credit card types, a more popular alternative is the procurement (or purchasing) card. This is a credit card for which a number of additional limits are imposed. This can

include a maximum dollar amount for individual transactions, or maximum amounts per day, or be restricted to stores that have a certain SIC code. Depending on the level of service offered through the procurement card, the monthly charge statement can also list the general category of product purchased.

- *Require approval of all invoices that lack an associated purchase order.* If the purchasing department has not given its approval to an invoice, then the accounting staff must send it to the supervisor of the department to which it will be charged, so that this person can review and approve it.
- *Require supervisory review and approval of credit card statements.* Even with the restrictions just noted for procurement cards, it is still possible for purchases to be made that are not authorized. If it seems necessary to verify employee spending habits, then copies of credit card statements can be sent to employee supervisors for review. This does not have to be for payment approval, but at least to ensure that supervisors are aware of the types of charges being made.
- *Verify authorizations with a three-way match.* Though extremely labor-intensive, it is important to compare a supplier's invoice to the authorizing purchase order to ensure that the details of each one match, while also matching the billed amount to the receiving documentation to ensure that the company is only paying for the amount received. Some computer systems can automate this matching process. An alternative is to have the receiving staff approve the amounts received from suppliers by comparing them to purchase orders, which then allows the accounting staff to pay suppliers from the authorizing purchase order, rather than the supplier invoice.
- *Separate the supplier record creation and payment approval functions.* A strong risk of fraud arises when the same person can create supplier records in the vendor master file, as well as approve payments to the same suppliers, since this person is capable of creating a fake supplier and approving payments to it. Instead, split these two responsibilities among different employees.
- *Require independent review of additions to the vendor master file.* To reduce the risk of having an employee create a shell company to which payments are made by the company, have a person not associated with the payables process review all additions to the vendor master file, and confirm that they are acceptable before any payments being made. Under this approach, only collusion that involves the reviewer will result in shell company fraud.
- *Use the universal payment identification code (UPIC).* The UPIC is a banking address used to receive electronic credit payments. It is a unique number that is assigned to a company's bank account, and is essentially a mask for the real account number. It is combined with a universal routing/transit (URT) number, which routes all incoming payment information for the associated UPIC to The Clearing House Payments Company, which, in turn, translates this information into the company's actual bank account information for payment purposes. With the UPIC, only ACH credits can be initiated, with all debits blocked. Given this high level of security, a company can print its UPIC on invoices or display it on the Internet with no fear that the information will be

used to extract money from its account. The company keeps the same UPIC even if it changes bank accounts within the same bank, changes banking relationships entirely, or if its bank is involved in a merger. To do so, the company merely links its new bank account number to the existing UPIC. Finally, the UPIC also protects a company from someone using the number to create fraudulent checks or demand drafts, because the UPIC cannot be used to clear a paper item.

8. *Notes payable.* The acquisition of new debt is usually a major event that is closely watched by the CFO, and so requires few controls. Nonetheless, the following control points are recommended as general corporate policies:
   - *Require approval of the terms of all new borrowing agreements.* A senior corporate manager should be assigned the task of reviewing all prospective debt instruments to verify that their interest rate, collateral, and other requirements are not excessively onerous or conflict with the terms of existing debt agreements. It might also be useful from time to time to see if a lending institution has inappropriate ties to the company, such as partial or full ownership in its stock by the person responsible for obtaining debt agreements.
   - *Require supervisory approval of all borrowings and repayments.* As was the case with the preceding control point, high-level supervisory approval is required for all debt instruments—except this time it is for final approval of each debt commitment. If the debt to be acquired is extremely large, it might be useful to have a policy requiring approval by the board of directors, just to be sure that there is full agreement at all levels of the organization regarding the nature of the debt commitment. To be a more useful control, this signing requirement should be communicated to the lender, so that it does not inadvertently accept a debt agreement that has not been signed by the proper person.
9. *Revenues.* The key controls concern related to revenues is that all shipments be invoiced in a timely manner. A controls failure in this area can lead to a major revenue shortfall and threaten overall company liquidity.
   - *Compare all billings to the shipping log.* There should be a continual comparison of billings to the shipment log, not only to ensure that everything shipped is billed but also to guard against illicit shipments that involve collusion between outside parties and the shipping staff. Someone who is handing out products at the shipping dock will rarely be obliging enough to record this transaction in the shipping log, so the additional step of carefully comparing finished goods inventory levels to physical inventory counts and reviewing all transactions for each item must be used to determine where inventory shrinkage appears to be occurring.
   - *Compare discounts taken to return authorizations granted.* Customers will sometimes take deductions when paying company invoices, on the grounds that they have returned some products to the company. The problem is that the company might never have authorized the returns, much less received them. A comparison of the returns authorization log to the list of discounts taken in the cash receipts journal will provide evidence that a customer is not paying for its obligations.
   - *Identify shipments of product samples in the shipping log.* A product that is shipped with no intention of being billed is probably a product sample being sent to a prospective customer or marketing agency. Note them as product samples in the

shipping log, and the internal audit staff should verify that each of them was properly authorized, preferably with a signed document.

10. *Cost of goods sold.* There are many ways in which a company can lose control over its costs in the cost of goods sold area, since it involves many personnel and the largest proportion of company costs. The application of the following suggested controls to a production environment will rely heavily on the perceived gain that will be experienced from using them, versus the extent to which they will interfere with the smooth functioning of the production department.
    - *Compare the cost of all completed jobs to budgeted costs.* A company can suffer from major drops in its gross margin if it does not keep an eagle eye on the costs incurred to complete jobs. To do so, compare a complete list of all costs incurred for a job to the initial budget or quote, and determine exactly which actual costs are higher than expected. This review should result in a list of problems that caused the cost overruns, which, in turn, can be addressed by the management team so that they do not arise again. This process should also be performed while jobs are in process (especially if the jobs are of long duration) so that these problems can be found and fixed before job completion.
    - *Compare projected manning needs to actual direct labor staffing.* The production manager will have a tendency to overstaff the production area if this person is solely responsible for meeting the requirements of the production plan, since an excess of labor will help to ensure that products are completed on time. This tendency can be spotted and quantified by using labor routings to determine the amount of labor that should have been used, and then comparing this standard to the actual labor cost incurred.
    - *Pick from stock based on bills of material.* An excellent control over material costs is to require the use of bills of material for each item manufactured, and then requiring that parts be picked from the raw materials stock for the production of these items based on the quantities listed in the bills of material. By doing so, a reviewer can hone in on those warehouse issuances that were *not* authorized through a bill of material, since there is no objective reason why these issuances should have taken place.
    - *Purchase based on blanket purchase orders and related releases.* The purchasing staff is already doing its job if all purchases are authorized through purchase orders. However, they will be doing this work more efficiently if repeating purchase orders can be summarized into blanket purchase orders, against which releases are authorized from time to time. The internal audit staff should periodically determine if there are opportunities for the use of additional blanket purchase orders, if current ones are being used properly, and if the minimum quantity commitments listed on existing blanket orders are being met, thereby keeping the company from paying penalties for missing minimum order totals.
    - *Reject all purchases that are not preapproved.* A major flaw in the purchasing systems of many companies is that all supplier deliveries are accepted at the receiving dock, irrespective of the presence of authorizing paperwork. Many of these deliveries are verbally authorized orders from employees throughout the company, many of whom are not authorized to make such purchases, or who are

not aware that they are buying items at high prices. This problem can be eliminated by enforcing a rule that all items received must have a corresponding purchase order on file that has been authorized by the purchasing department. By doing so, the purchasing staff can verify that there is a need for each item requisitioned, and that it is bought at a reasonable price from a certified supplier.

11. *Travel and entertainment expenses.* Employee expense reports can involve dozens of line items of requested expense reimbursements, a few of which might conflict with a company's stated reimbursement policies. In order to ensure that these ''gray area'' expense line items are caught, many accountants will apply a disproportionate amount of clerical time to the minute examination of expense reports. The need for this level of control will depend on the CFO's perception of the amount of expenses that will be reduced through its use. In reality, some lesser form of control, such as expense report audits, is generally sufficient to keep expense reports ''honest.''
    - *Audit expense reports at random.* Employees might be more inclined to pass through expense items on their expense reports if they do not think that the company is reviewing their expenses. This issue can be resolved fairly inexpensively by conducting a few random audits of expense reports, and following up with offending employees regarding any unauthorized expense submissions. Word of these activities will get around, resulting in better employee self-monitoring of their expense reports. Also, if there is evidence of repeat offenders, the random audits can be made less random by requiring recurring audits for specific employees.
    - *Issue policies concerning allowable expenses.* Employees might submit inappropriate expenses for reimbursement simply because they have not been told that the expenses are inappropriate. This problem can be resolved by issuing a detailed set of policies and procedures regarding travel. The concept can be made more available to employees by posting the information on a corporate intranet site. Also, if there is an online expense report submission system in place, these rules can be incorporated directly into the underlying software, so that the system will warn employees regarding inappropriate reimbursement submissions.
    - *Require supervisory approval of all expense reports.* If there are continuing problems with expense reimbursement submissions from employees, it may be necessary to require supervisory approval of all expense reports. This has the advantage of involving someone who presumably knows why an employee is submitting a reimbursement form, and who can tell if the company should pay for it. The downside is that expense reports tend to sit on managers' desks for a long time, which increases the time before an employee receives payment.
12. *Payroll expenses.* The controls used for payroll cover two areas—the avoidance of excessive amounts of pay to employees, and the avoidance of fraud related to the creation of paychecks for nonexistent employees. Both types of controls are addressed here:
    - *Require approval of all overtime hours worked by hourly personnel.* One of the simplest forms of fraud is to come back to the company after hours and clock out at a later time, or have another employee do it on one's behalf, thereby creating false overtime hours. This can be resolved by requiring supervisory approval of

all overtime hours worked. A more advanced approach is to use a computerized time clock that categorizes each employee by a specific work period, so that any hours worked after his or her standard time period will be automatically flagged by the computer for supervisory approval. They might not even allow an employee to clock out after a specific time of day without a supervisory code first being entered into the computer.

- *Require approval of all pay changes.* Pay changes can be made quite easily through the payroll system if there is collusion between a payroll clerk and any other employee. This can be spotted through regular comparisons of pay rates *paid* to the approved pay rates *stored* in employee folders. It is best to require the approval of a high-level manager for all pay changes, which should include that person's signature on a standard pay change form. It is also useful to audit the deductions taken from employee paychecks, since these can be altered downward to effectively yield an increased rate of pay. This audit should include a review of the amount and timing of garnishment payments, to ensure that these deductions are being made as required by court orders.
- *Require approval of all negative deductions.* A negative deduction from a paycheck is essentially a cash payment to an employee. Though this type of deduction is needed to offset prior deductions that were too high, it can be abused to artificially increase a person's pay. Consequently, all negative deductions should be reviewed by a manager.
- *Look for paychecks having no tax or other deductions.* A paycheck that has no tax deductions or personal deductions is more likely to be a check issued for a ghost employee, where the perpetrator wants to receive the maximum amount of cash. The easiest way to spot these checks is to create a custom report that runs automatically with each payroll, and which only itemizes checks of this nature.
- *Issue checks directly to recipients.* A common type of fraud is for the payroll staff to either create employees in the payroll system, or to carry on the pay of employees who have left the company, and then pocket the resulting paychecks. This practice can be stopped by ensuring that every paycheck is handed to an employee who can prove his or her identity.
- *Paymaster retains unclaimed paychecks.* The person who physically hands out paychecks to employees is sometimes called the *paymaster*. This person does not prepare the paychecks or sign them, and his sole responsibility in the payroll area is to hand out paychecks. If an employee is not available to accept a paycheck, then the paymaster retains that person's check in a secure location until the employee is personally available to receive it. This approach avoids the risk of giving the paycheck to a friend of the employee who might cash it, and also keeps the payroll staff from preparing a check and cashing it themselves.
- *Issue lists of paychecks issued to department supervisors.* It is useful to give supervisors a list of paychecks issued to everyone in their departments from time to time, because they might be able to spot payments being made to employees who are no longer working there. This is a particular problem in larger companies, where any delay in processing termination paperwork can result in continuing payments to ex-employees. It is also a good control over any

payroll clerk who is trying to defraud the company by delaying termination paperwork and then pocketing the paychecks produced in the interim.

- *Compare the addresses on employee paychecks.* If the payroll staff is creating additional fake employees and having the resulting paychecks mailed to their home addresses, then a simple comparison of addresses for all check recipients will reveal duplicate addresses. (So that employees cannot get around this problem by having checks sent to post office boxes, create a policy to prohibit payments to post office boxes.)
- *Review report showing multiple direct deposit payments to the same bank account.* Under a direct deposit system, a payroll clerk could create ghost employees and then have their payments sent directly to his or her bank account through the direct deposit system. This type of fraud is easily detected by running a custom report in the payroll software that only shows employees for whom more than one direct deposit payment has been made as part of a single payroll cycle. An even more effective control is to run the same report for multiple payroll cycles, in case a canny employee only creates ghost employees who are located in different pay cycles.
- *E-mail employees with change information.* Whenever an employee uses a self-service screen to alter information, the system should send a confirming e-mail message detailing the change. This gives employees the opportunity to spot errors in their entries while also notifying them if someone else has gained access to the payroll system using their access codes and has altered their payroll information.

13. *Occupancy expenses.* Though a relatively minor item, the following control is intended to ensure that employees are prudent in their acquisition of furnishings for company offices:
    - *Compare the cost of employee furnishings to company policy.* Employees sometimes obtain furnishings at a cost that is well beyond what would be obtained by a prudent manager. This issue can be addressed by promulgating a policy that outlines the maximum cost of furnishings per employee, and by enforcing it with occasional internal audits of costs incurred. Another means of enforcement is to authorize a standard set of furnishings for the purchasing staff to procure, with any furnishings outside this list requiring special approval.
14. *General.* A few continuing payments to suppliers are based on long-term contracts. Most of the following controls are associated with having a complete knowledge of the terms of these contracts, so that a company does not make incorrect payment amounts:
    - *Monitor changes in contractual costs.* This is a large source of potential expense reductions. Suppliers might alter the prices charged to the company on their invoices from the rates specified on either purchase orders, blanket purchase orders, or long-term contracts, in hopes that no one at the receiving company will notice the change in prices. Of particular concern should be prices that the supplier can contractually change in accordance with some underlying cost basis, such as the price of oil or the consumer price index. Suppliers will promptly increase prices based on these escalator clauses, but will be much less prompt in reducing prices in accordance with the same underlying factors. The internal audit team can review these prices from time to time, or the accounting

computer system can automatically compare invoice prices to a database of contract terms. Another alternative is to only pay suppliers based on the price listed in the purchase order, which entirely negates the need for this control.

- *Monitor when contracts are due for renewal.* A company may find itself temporarily paying much higher prices to a supplier if it inadvertently lets a long-term contract containing advantageous price terms expire. To avoid this difficulty, a good control is to set up a master file of all contracts that includes the contract expiration date, so that there will be fair warning of when contract renegotiations must be initiated.
- *Require approval for various levels of contractually based monetary commitment.* Create a company policy that itemizes the levels of monetary commitment at which additional levels of management approval are required. Though this might not help the company to disavow signed contracts, it is a useful prevention tool for keeping managers from signing off on contracts that represent large or long-term monetary commitments.
- *Obtain bonds for employees in financially sensitive positions.* If there is some residual risk that, despite all the foregoing controls, corporate assets will still be lost due to the activities of employees, it is useful to obtain bonds on either specific employees or for entire departments, so that the company can be reimbursed in the event of fraudulent activities.

The preceding set of recommended controls only encompasses the most common ones. Supplement them by reviewing the process flows used by a company to see if there is a need for additional (or fewer) controls, depending on how the processes are structured. Controls will vary considerably by industry, as well—for example, the casino industry imposes multilayered controls over cash collection, since it is a cash business. Thus, consider these controls to be only the foundation for a comprehensive set of controls that must be tailored to each company's specific needs.

WHEN TO ELIMINATE CONTROLS

Despite the lengthy list of controls noted in the last section, there are times when it is safe to take controls away. By doing so, you can frequently eliminate extra clerical costs, or at least streamline the various accounting processes. To see if a control is eligible for removal, use the following steps:

1. *Flowchart the process.* The first step is to create a picture of every step in the entire process in which a control fits by creating a flowchart. This is needed in order to determine where other controls are located in the process flow. With a knowledge of redundant control points or evidence that there are no other controls available, you can then make a rational decision regarding the need for a specific control.
2. *Determine the cost of a control point.* Having used a flowchart to find controls that might no longer be needed, we must then determine their cost. This can be a complex calculation, for it might not just involve a certain amount of labor, material, or overhead costs that will be reduced; it is also possible that the control

is situated in the midst of a bottleneck operation, so that the presence of the control is directly decreasing the capacity of the process, thereby resulting in reduced profits. In this instance, add the incremental drop in profits to the incremental cost of operating the control in order to determine its total cost.

3. *Determine the criticality of the control.* If a control point is merely a supporting one that backs up another control, then taking it away might not have a significant impact on the ability of the company to retain control over its assets. However, if its removal can only be counteracted by a number of weaker controls, it might be better to keep it in operation.
4. *Calculate the control's cost benefit.* Compare the preceding two points to see if a control point's cost is outweighed by its criticality, or if the current mix of controls will allow it to be eliminated with no significant change in risk, while stopping the incurrence of its cost.
5. *Verify the use of controls targeted for elimination.* Even when there is a clear-cut case for the elimination of a control point, it is useful to notify everyone who is involved with the process in which it is imbedded, in order to ascertain if there is some other purpose for which it is being used. For example, a control that measures the cycle time of a manufacturing machine may no longer be needed as a control point, but may be an excellent source of information for someone who is tracking the percentage utilization of the equipment. In these cases, it is best to determine the value of the control to the alternate user of the control before eliminating it. It may be necessary to work around the alternate use before the control point can be removed.

Repeat this control evaluation process whenever there is a significant change to a process flow. Even if there has not been a clear change for some time, it is likely that a large number of small changes have been made to a process, whose cumulative impact will necessitate a controls review. The period of time between these reviews will vary by industry, since some have seen little process change in many years, while others are constantly shifting their business models, which inherently requires changes to their supporting processes.

If there are any significant changes to a business model, such as the addition of any kind of technology, entry into new markets, or the addition of new product lines, conduct a complete review of all associated process flows both before and immediately after the changes, so that unneeded controls can be promptly removed or weak controls enhanced.

SUMMARY

The main focus of this chapter has been on the specific control points that can be attached to an accounting system in order to reduce the risk of loss. Selecting these controls should be contingent on an evaluation of the risks to which an accounting system is subject, as well as the cost of each control point and its impact on the overall efficiency of each accounting process. In a larger organization, the continuing

examination, selection, and installation of control points can easily become a full-time job for a highly trained process expert. Smaller organizations that cannot afford the services of such a person will likely call on the in-house accounting staff to provide such control reviews, which should be conducted on a fixed schedule in order to ensure that ongoing incremental changes to processes are adequately supported by the correct controls.

CHAPTER SEVEN

7 Audit Function

THE AUDIT FUNCTION IS crucial for ensuring the integrity of a company's financial systems, which includes not only its financial results but also the control systems and code of ethics that are the cornerstones of an accurate financial reporting system. The CFO plays a major role in the audit function, given the position's ability to allocate resources to or from audits as well as to influence the annual internal audit plan. However, the key player in this area is the audit committee, which is composed of independent directors who report directly to the board of directors. This committee is described in the next section.

COMPOSITION OF THE AUDIT COMMITTEE

The audit committee should be a standing committee of the board of directors, and should be composed primarily of nonofficer directors. These directors should not be involved in the management of the company, nor have previously been its officers. These restrictions are intended to create the most independent overview environment possible for the committee.

The committee is generally composed of between three and five members, not all of whom must have an accounting, auditing, or finance background. It can be more useful to have some directors with a solid operational knowledge of the industry in which the company operates; these people can spot potential control weaknesses, based on their knowledge of how transactions flow in an industry-specific environment. Nonetheless, at least one committee member should have considerable training or experience in the accounting and finance arena. The committee should be expected to meet on at least a quarterly basis.

The CFO is rarely a member of this committee. Instead, the CFO will sometimes be asked to attend its meetings in order to advise committee members on specific issues, or

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to answer questions about problems that the committee has uncovered through its review activities. The CFO should certainly maintain a strong line of communication with committee members, in order to inform them of possible accounting rule changes or prospective policy changes that may impact the reporting of financial information. The CFO should also educate committee members about key financial topics, such as corporate lines of business, accounting policies, legal obligations, regulatory filings, and industry accounting practices.

The director of the internal audit function usually reports to the CFO, but can report instead to the audit committee. The most common reporting relationship is for the internal audit director to be supervised by the CFO, but to have unimpeded access to the audit committee at any time; this reporting system is designed to give committee members direct access to the results of internal audits, while at the same time giving the internal audit director the ability to go around the CFO if that person appears to be obstructing the dissemination of internal audit results.

In short, the audit committee's structure is intended to be as independent of the management team as possible, while still giving it direct access to key accounting and audit personnel within the management team.

ROLE OF THE AUDIT COMMITTEE

The goal of the audit committee is to assist the board of directors by providing oversight of the financial reporting process and related controls. The committee is not empowered to make any decisions—rather, it recommends actions to the full board, which may then vote on its recommendations. The exact range of tasks granted to the audit committee will vary, but are generally confined to the following issues:

Tasks Related to Company Management

- *Review expenses incurred by the management team.* Used to spot any excessive use of corporate funds by managers.
- *Review business transactions between the company and the management team.* Used to ensure that managers are neither enriching themselves at the expense of the company nor holding their personal interests above those of the company.

Tasks Related to External Auditors

- *Recommend the hiring of external auditors.* Used to ensure that a truly independent auditor is used, rather than one having connections with the company in some way that may influence its review of the company's financial statements. The audit committee should also base this recommendation on the auditor's expertise in the industry, the quality of its services, the extent to which it performs other services for the company, and the amount of its quoted fees for the audit.
- *Review auditor recommendations.* Used to ensure that control issues spotted by the auditors are properly dealt with by the management team, resulting in a stronger control environment.

- *Review disputes between the external auditors and management.* Used to determine if the management team is attempting to force the auditors to agree with an alternative accounting treatment for transactions.
- *Review the use of external auditors for other services.* Used to determine if the external auditor has obtained such a significant amount of extra business with the company that it may be less inclined to issue an unfavorable audit opinion, due to the risk of losing the additional business.

Tasks Related to Internal Audits

- *Review the replacement of the internal audit director.* Used to verify that the internal audit director is being replaced for reasonable cause, rather than because the CFO wants to install a more malleable director.
- *Review the internal audit staff's objectives, work plans, training, and reports.* Used to verify that the internal audit staff is appropriately targeted at those areas of the company that are at greatest risk of control problems, and that the audit staff is appropriately trained to handle the audits. A detailed review of the annual work plan will reveal if the internal audit director has allocated a sufficient amount of time to each audit, or has sufficient staff available to complete all goals.
- *Review the cooperation received by the internal auditors.* Used to spot possible areas of fraudulent activities, since minimal cooperation is a signal that an auditee may be hiding information from audit teams.
- *Review disaster recovery plans.* Used to ensure that adequate recovery plans have been created and tested for the most likely disaster scenarios.

Tasks Related to Financial Systems

- *Investigate fraud and other forms of financial misconduct.* Used as the grounds for a direct investigation of any situation possibly involving deliberately inaccurate financial reporting or the misuse of company assets.
- *Review corporate policies for compliance with laws and ethics.* Used to ensure that all corporate policies, irrespective of their relationship to financial systems, are constructed in accordance with local regulations and meet the restrictions of the corporate statement of ethical activities.
- *Verify that financial reports address all information requirements of lenders.* Used to ensure that lender-required financial information is reported to them at the appropriate times and in the correct formats, so there is minimal risk of losing vital credit lines as a result of missing information.
- *Review all reports to shareholders, including special reports, for consistency of information.* Used to verify that all reports present a consistent picture of corporate financial health to investors. This is of particular concern for special reports, which tend to include different types of measures (such as earnings before interest, taxes, depreciation, and amortization [EBITDA] instead of the net income figure found on financial statements) and bullish statements by management that do not always match the tenor of information presented in the standard set of financial reports.

Of special interest is the audit committee's emphasis on the *review* of a wide range of financial activities—with the exception of one item. The audit committee is empowered to *investigate* fraud and other forms of financial misconduct, rather than review the results of such an investigation by someone else. The reason for this direct action is that employees (possibly including members of management) are probably involved in the fraudulent activities, so the audit committee can only obtain an unbiased review of the situation by investigating it itself.

Thus, in all cases besides the investigation of financial misconduct, the audit committee's role is to examine the results of a variety of audits and other investigations to ensure that the company's system of financial reporting fairly represents actual operating results.

PURPOSE OF THE EXTERNAL AUDITORS

The primary role of external auditors is to arrive at an opinion on the fairness of the information presented in a company's financial statements. If they do not approve of the financial statements, then they must note any exceptions in a letter accompanying the financial statements. Opinions can be of the following three types:

1. *Unqualified.* This opinion states that the financial statements are a fair representation of a company's financial position, results of operations, and cash flows.
2. *Qualified.* This opinion states that, with the exception of specified issues, the financial statements are a fair representation of a company's financial position, results of operations, and cash flows.
3. *Adverse.* This opinion states that the financial statements are not a fair representation of a company's financial position, results of operations, and cash flows. When this opinion is made, the auditors must list the reasons for their opinion and their impact on the financial statements.

Auditors may also be asked to review selected portions of a public company's quarterly financial reports. This type of examination is much less limited in scope than a full audit, and is more concerned with the proper presentation of information and the consistency of presentation in relation to information that was disclosed at an earlier date, which might involve the use of comparative ratio analysis. Auditors may also review interim board or stockholder meeting minutes to see if any issues were discussed that may require disclosure in the quarterly statements. They can also make inquiries about any changes to the assemblage of accounting controls that are used to derive the financial statements.

The external auditors usually issue a management letter alongside their opinion of the financial statements. The management letter contains control problems the auditors uncovered during their audit, along with recommended changes. Auditors always review this letter in advance with the management team in order to prune out any inaccuracies, so the CFO will have time to implement them or prepare a response before the letter goes to the board of directors.

Part of the external auditors' job is to evaluate a company's system of internal controls in order to see if they are adequate for properly recording financial transactions. They need this information to determine the extent to which they can rely on existing controls to replace some portion of their audit work. Thus, if they judge internal controls to be weak, audit testing will be more substantial, and vice versa. Auditors conduct internal control tests by tracing a set of actual transactions through the accounting records to see if they have been properly and consistently handled. If they find significant weaknesses in the system of controls (i.e., those that could adversely affect a company's ability to present accurate financial statements), they should report them to either the audit committee or board of directors. However, reviewing internal controls is not a primary task of external auditors, so one should not place complete reliance on a statement by them regarding the adequacy of controls. Instead, the internal audit staff is used to provide additional assurance of the adequacy of internal controls.

External auditors have a close working relationship with the audit committee, since it recommends their hiring to the board of directors and is the first to hear from them about any audit-related issues. As such, the presence of the audit committee reinforces the independence of the external auditors from the management team. For larger companies requiring a continual audit presence, the external auditors should meet with the audit committee at least once a quarter on a private basis to go over any issues uncovered by the auditors, as well as to discuss the level of cooperation received during the conduct of audit work. The auditors can also take this opportunity to educate the audit committee members about applicable areas of generally accepted accounting principles (GAAP) or International Financial Reporting Standards (IFRS), where subjectivity can be used in reporting financial information, and how the management team is using these gray areas. The external auditors should discuss with the audit committee not whether an accounting treatment being used by the management team is acceptable, but rather if it is the right thing to do. These ongoing discussions should hopefully result in instructions from the board to the CFO regarding the proper use of GAAP or IFRS and the avoidance of any gray areas in the accounting standards.

DEALING WITH EXTERNAL AUDITORS

Because of the tight linkage between the external auditors and the audit committee, the CFO has little direct control over which auditors are hired or the nature of their review. Because of this arrangement, the CFO's best course for dealing with the auditors is to work with them to the greatest extent possible. This strategy should include assigning members of the internal audit staff to them as helpers during the audit, which not only concludes the audit with greater speed, but also leaves expert internal auditors on hand to answer external auditor questions and also reduces the auditors' final billing (since the internal audit staff is doing part of the work). Another tactic under the same strategy is to lay out all changes in accounting policies for the current year and go over them in detail with the external auditors, so there will be no surprises during the audit in regard

to these changes. An even more proactive approach is to communicate with the auditors throughout the year prior to the audit, consulting with them in advance before any prospective accounting policy changes are implemented.

Once the audit is completed, the auditors may be prepared to issue an unqualified or adverse opinion on the financial statements. This is cause for great concern to a CFO, since it essentially states that the CFO is unable to manage a financial system that generates accurate results, or else that the CFO is using an accounting treatment that departs significantly from GAAP or IFRS. Since investors and lenders will see the auditors' report, the CFO should generally accept whatever changes are recommended by the auditors in order to earn an unqualified opinion.

A CFO might think that these recommendations essentially require the CFO to raise the white surrender flag and accept anything recommended by the auditors. This is not the case, since dealing with auditors throughout the year allows the CFO time to share opinions with them prior to the formal audit and perhaps influence their thinking about how GAAP or IFRS should be applied to the company's particular circumstances. Thus, cooperation with the external auditors is crucial.

IMPACT OF THE SARBANES-OXLEY ACT ON THE AUDIT FUNCTION

The Sarbanes-Oxley Act of 2002 (Sarbanes) is one of the most extensive enhancements of the federal securities laws since the 1930s. Given the far-reaching nature of its provisions, every CFO should have a grasp of its general requirements. This section provides that information by splitting a summary of its provisions into three categories: issues for the external auditor, public company, and private company.

Issues for the External Auditor

Sarbanes-Oxley strengthens the oversight of public accountants with the creation of an oversight board and by requiring lengthy documentation retention, while also improving auditor independence from clients by prohibiting certain activities and rotating partners off audits. Key provisions are:

- *Public accounting oversight board.* Sarbanes created the Public Accounting Oversight Board, which is responsible for establishing rules and quality control standards for auditors who deliver audit reports for publicly held companies.
- *Document retention.* Auditors who perform an audit or review must retain the documents and all related correspondence for seven years. It is also a felony to knowingly destroy or create documents if that action will obstruct or influence a federal investigation.
- *Auditor independence.* Auditors must establish their independence from audit clients by not providing bookkeeping services, financial system design or implementation services, valuation services, fairness opinions, actuarial services, legal or expert services, investment banking assistance, or actuarial services to those clients.

- *Partner rotation.* Sarbanes requires the lead and concurring audit partners to rotate off the audit team after five years. Once off the audit, they cannot be involved with it for another five years, when the requirements begin anew.
- *Auditors hired by clients.* If a client hires the lead or concurring partner from the previous year's audit team and that person oversees the reporting of financial information for the client, then the auditor is not considered to be independent.

Issues for the Public Company

The bulk of the Sarbanes provisions are targeted at public companies, specifically at the enhancement of both control systems and financial reporting. Control improvements include the establishment of an audit committee, management certification of the financial statements and supporting control system, issuance of a controls report, and whistleblower protection. Disclosure improvements include coverage of off-balance-sheet arrangements, a code of ethics, and insider stock trades. Miscellaneous provisions include penalties for document destruction and the prohibition of loans to officers. Key provisions are as follows:

- *Audit committee.* Sarbanes requires the various stock exchanges to adopt rules requiring listed companies to have audit committees whose directors are independent of the company. Independence is defined as receiving no compensatory fees from the company, such as from consulting engagements.
- *Disclosure of financial experts on the audit committee.* Companies must note whether there is a financial expert on the audit committee. If there is not one, the discussion should indicate why the company has not added such a person.
- *Management certification of financial statements.* The chief executive officer and chief financial officer of the reporting company must personally certify that the company's financial statements do not contain material misstatements or omissions, that the statements fairly reflect the company's financial position, that control systems will bring material issues to the attention of the officers, and that they have conducted an evaluation of the company's disclosure controls and procedures within the past 90 days.
- *Additional SEC-required report.* The Securities and Exchange Commission has issued release number 33-8238 under Section 404 of Sarbanes, in which it requires public companies to file an annual internal report that identifies the internal control framework that a company is using, states whether controls are effective as of the end of its fiscal year, discloses material control weaknesses, describes the management team's responsibility for establishing and maintaining an adequate system of internal controls, and notes that the company's external auditors have issued an audit report on management's assessment of its internal controls.
- *Whistleblower protection.* If an employee is discharged or disciplined as a result of disclosing information about fraudulent activities as part of a federal investigation or several other specific categories, he or she can file a complaint with the Department of Labor (DOL), and then file a lawsuit in federal court if the DOL does not issue a ruling within 180 days. Under Sarbanes, it is a criminal violation to

retaliate against a whistleblower for revealing information to a law enforcement officer regarding any federal offense.

- *Disclosure of off-balance-sheet arrangements.* Companies must include a discussion of their off-balance-sheet reporting in a separately captioned section of the financial statements.
- *Disclosure of code of ethics.* Companies must disclose if they have issued a code of ethics for their senior managers and accounting managers, and publicly issue changes to the code.
- *Reporting of insider stock trades.* Companies must disclose insider stock trades by directors, officers, and principal shareholders no later than the end of the second business day after the trade took place.
- *Document destruction.* It is a felony to knowingly destroy or create documents if that action will obstruct or influence a federal investigation.
- *Loans to directors or officers.* Companies are prohibited from extending credit to directors or executive officers.
- *Forfeiture of officer compensation.* If a company officer earns a bonus or a profit on stock sales through the issuance of misstated financial statements, the officer must forfeit the amount of the bonus earned during the 12-month period beginning on the date of issuance of the misstated financial statements.

Several of these provisions have proven so onerous for some public companies that they have either delisted from a stock exchange in order to avoid some requirements or have gone private (which makes them subject to only the few Sarbanes provisions noted next). For more information about going private, see Chapter 18, ''Taking a Company Private.''

Issues for the Private Company

Only two Sarbanes provisions apply to privately held companies:

1. *Document destruction.* It is a felony to knowingly destroy or create documents if that action will obstruct or influence a federal investigation.
2. *Whistleblower protection.* It is a criminal violation to retaliate against a whistleblower for revealing information to a law enforcement officer regarding any federal offense.

ROLE OF THE INTERNAL AUDIT FUNCTION

The internal audit director usually sorts through a number of requests from the audit committee, CFO, CEO, and other members of management, and assembles a proposed schedule of audits to conduct over the course of the upcoming year. If these are approved, the director then creates a work schedule for the various audit teams. After the work is completed, the audit team writes a report on its findings, which works its way back through the director and eventually to the various members of management, where its findings are usually cause for systemic changes that either eliminate or

mitigate any uncovered control problems. The audit teams will sometimes conduct post-audit reviews to see if subsequent system changes have resulted in better controls.

Following are some suggested audits that the teams can review, and that will give the CFO much better information about how to resolve control issues:

- *Accounts payable.* Verify that all payments are properly authorized and supported by receiving documentation. Also verify that there are no late payment fees being paid, and that early payment discounts are taken when the discounts exceed the corporate cost of capital.
- *Accounts receivable credits.* Verify that all accounts receivable credits are properly authorized, and that bad debts are expensed to the bad debt allowance, rather than reduced with a credit to sales. Verify that customers are not taking early payment discounts and still paying at longer terms than those required by the early payment discount deal.
- *Advertising credits.* Verify that all credits issued to customers for advertising are supported by copies of advertisements, clearly showing the dates when the advertisements were run, as well as accompanying documentation for advertising fees.
- *Contracts.* Verify that there is an updated file containing all current contracts, as well as an accurate summary-level contract listing that itemizes key dates for each contract, such as termination dates, penalty clauses, and review dates.
- *Debt.* Verify that debt payments are made on time, and that no penalty payments are incurred. Also verify that the interest rates charged by lenders are in agreement with the rates listed on loan documentation, and that no additional fees are being charged.
- *Expense reports.* Verify that submitted expenses meet company guidelines for approved travel and entertainment expenses. Also verify that all expense reports have been approved in advance by department managers, and that expense reports do not include expenses for an excessively large number of time periods.
- *Fixed assets.* Verify that all capitalized assets are above the capitalization limit, and that they are being expensed at the correct rate of depreciation. Also verify that capital expenditures were properly authorized, and that a net present value analysis was conducted, reviewed, and approved for each one.
- *Freight revenue.* Verify that customers are charged the correct amounts for freight. Also verify that freight billings are reconciled against actual shipments by freight carriers.
- *Inventory.* Verify that inventory accuracy is at least 95 percent. Also verify that cycle counts are being completed in a timely manner, and that counters are investigating the root causes of any errors they find. Verify that customer-owned inventory is properly segregated and that it is not included in the inventory that has received a valuation. Verify that all inventory costs are properly supported by backup documentation regarding actual product costs.
- *Payroll.* Verify that all employee pay changes and bonuses have been properly authorized, and that all legal requirements for employee files, such as I-9 form verification, have been completed and are present in employee files. Also verify that

all employee garnishment deductions are properly supported by legal documentation, and that the payroll staff is aware of the dates on which the garnishments are to be terminated.

- *Pricing.* Verify that customers are being charged the correct prices, based on pricing tables for quantities and dates shipped.
- *Product invoicing.* Verify that all items shipped are invoiced, and vice versa. Also verify that all invoices are printed within one day of shipment.
- *Service invoicing.* Verify that all service invoices are billed within one day of the completion of work, or in accordance with a prearranged invoicing schedule, and that services billed are matched by supporting documentation.

The recommended internal audits itemized here are only the standard ones that apply to most industries. A CFO should also review specialized systems within the company that require special attention and design additional audit programs to ensure that their controls are also adequate.

The internal audit director may also be asked to conduct a variety of *operational* audits. These audits can cover any topic, resulting in a report on the efficiency and effectiveness of operations in a selected area, along with improvement recommendations. Examples of operational audits include examinations of procurement practices, hiring standards, and management reviews. An operational audit may be conducted at the request of a manager who wants an outside opinion on the performance of his department, or by senior management, which may be looking for areas of improvement within the company.

Another type of audit is the *compliance* audit. This audit requires the internal audit staff to review a company's compliance not only with internal policies, but also with those of such external regulatory agencies as the Securities and Exchange Commission, the Internal Revenue Service, and the Department of Labor. These reviews are rarely requested by anyone within a company; instead, the internal audit director should block out a standard amount of space for them within the annual audit work plan, and continually rotate through compliance examinations of all internal and external policies on an ongoing basis.

The internal audit staff may also be asked to recommend the *elimination* of controls, on the grounds that they are too expensive to maintain in proportion to the level of control provided. If so, internal auditors should determine the level of offsetting control provided by other control points in the financial system. If other controls can ''back fill'' for a deleted control, then it can possibly be eliminated. However, internal auditors must also consider the gravity of a control breakdown in the subject area. If the level of potential risk is in the millions of dollars, then it may be more prudent to retain the targeted control point. Finally, make some estimation of the cost of the targeted control in order to determine the cost-effectiveness of elimination. Determining a control's cost-effectiveness can include a discussion of its impact on efficient transaction processing—if it significantly impedes efficiency enhancements, this can be grounds for elimination. In short, internal auditors must balance a number of offsetting issues when deciding if controls can be eliminated.

In addition to its other tasks, the internal audit staff is frequently called on to assist the external auditors in their review of a company's financial statements. The internal staff may be asked to complete any tasks that will reduce the workload of the external auditors, thereby reducing the fees charged by them. For large audits, this can represent a substantial reduction in the fee charged. Tasks that may be shifted to the internal audit staff include the gathering of data for analysis by the external auditors, filling out boilerplate audit forms, and assisting with transaction confirmations.

MANAGING THE INTERNAL AUDIT FUNCTION

The internal audit director most commonly reports to the CFO, and is also allowed direct access to the audit committee. It is also common to see the director reporting straight to the audit committee, which eliminates any chance that the CFO can stall an auditing program through the withholding of budgeted funds.

Within the internal audit department, there will usually be a set of managers reporting to the internal audit director who are specialists in different auditing areas. For example, information technology audits are almost always handled by a highly trained subgroup, while financial, compliance, and operational audits are typically funneled to separate teams. If there are many corporate locations, there may also be regional audit managers who are responsible for all auditing activities within their regions, and who coordinate auditing work with the managers of other departments for projects that span large areas.

The primary tool for managing the internal audit function is the annual audit plan. This is usually a document that lists every audit to be completed during the year, as well as a brief description of the objectives of each audit. An example of a possible set of objectives is:

> Review the method for recording additions, changes, and deletions of fixed assets to and from the accounting records for the Andersonville facility. The audit will verify that the correct capitalization limit is being observed, that there are documented and justified reasons for making alterations to the fixed asset records subsequent to additions, that deletions are recorded properly, and that the sale amounts of assets are reasonable.

Though this audit description gives one a good idea of what will happen during the audit, it does not yield a sufficient degree of additional information, such as the number of hours budgeted for the work, who will be assigned to the project, or when it will take place. This requires a more detailed audit budget for the year, such as the one shown in Exhibit 7.1. The primary items contained in this budget are the budgeted hours scheduled for each job and the estimated range of dates during which work will be completed. When constructing the plan, the internal audit director should verify that there are sufficient funds to complete it, that there is no duplication of effort between audit teams (or from recently completed audits), and that the assigned tasks are reasonable in relation to the size of the systems to be reviewed.

EXHIBIT 7.1 Sample Internal Audit Budget

Division	Project	Hours	Start Date	End Date	Personnel
Denver	Fixed assets	240	01/01/xx	02/15/xx	Smith/Jones
Denver	Billings	280	01/01/xx	02/21/xx	Barnaby/Granger
Boston	Expense reports	120	02/16/xx	03/31/xx	Smith/Jones
Chicago	Payroll	320	04/01/xx	05/15/xx	Smith/Jones
Chicago	Fixed assets	280	02/22/xx	03/07/xx	Barnaby/Granger
Atlanta	Expense reports	120	05/16/xx	06/30/xx	Smith/Jones
Atlanta	Billings	240	03/08/xx	04/21/xx	Barnaby/Granger

With the internal audit budget in hand, the CFO can exercise a much greater degree of control over the department. The budget information allows one to use the following controls:

- Compare budget to actual hours worked.
- Compare budget to actual project start and completion dates.
- Compare budget to actual staffing requirements.

In addition to these quantitative control points, there are a variety of supplemental controls that a CFO can use for specific situations:

Planning Controls

- Compare the written objectives of the department to its actual activities.
- Ensure that there is an up-to-date policies and procedures manual that clearly shows how audit work is to be conducted.
- Verify that auditors have a sufficient educational background to conduct specific types of audits.
- Verify that the department is sufficiently large to accomplish all planned goals.
- Review the mix of scheduled reviews to see if there is a lack of attention to specific areas, such as reviews of accounting, computer, or operational controls.
- Verify that the department is reviewing the controls being built into new computer system projects.
- Verify that there are scheduled reviews of the company's ethical standards.
- Ensure that the internal audit staff coordinates its work to support that of the external auditors.

Performance Controls

- Review work papers to ensure that audits were completed in as thorough a manner as possible.
- Review audit reports for activities conducted, findings noted, and recommendations given.
- Review comments from departments that were the subject of audits.
- Verify that the audit committee is satisfied with departmental performance, and follow up on any shortcomings.

Follow-Up Controls

- Verify that there have been no restrictions of departmental activities due to intransigence by auditees, and bring up exceptions with the audit committee for action.
- Verify that audit recommendations are being acted on.

By using the appropriate mix of the preceding controls, a CFO can create an efficient and effective management system that will result in a high-performance internal audit department.

SUMMARY

Auditing is about the verification of financial systems that are already in place. As such, auditors are really reviewing the systems for which the CFO is responsible. Because of this overview role, it is inappropriate for CFOs to be responsible for the hiring of an external audit firm or to have direct control over the work plan of the internal audit staff. Otherwise, CFOs would be reviewing themselves, resulting in very few adverse audit findings. Though this book is intended to assist the CFO with his or her job, this chapter has really described why CFOs should *not* have direct control over the audit function. A discerning CFO will realize that this lack of control is not only good but also should be trumpeted to the investment community as solid proof of the strength and integrity of a company's financial systems.

PART THREE

Financial Analysis

The New CFO Financial Leadership Manual, Third Edition
by Steven M. Bragg

CHAPTER EIGHT

Cost of Capital

MANY COMPANIES MAKE DECISIONS to build new facilities, invest in new machinery, or expend sums for other large projects without any idea of whether the return to be expected from these projects will exceed the cost of capital needed to fund them. As a result, a company may find that it is working furiously on any number of new projects, but seeing its ability to generate cash flow to repay debt or pay stockholders decline over time. To avoid this situation, it is necessary to calculate the return on investment, which is covered in the next chapter. In this chapter, we discuss the first part of the investment decision, which is the calculation of the cost of capital against which investment decisions must be compared. The chapter describes the primary components of a company's capital, how the cost of each kind is combined to form a weighted cost of capital, and how this information should be most appropriately used when evaluating the return on new projects that require funding, as well as for discounting the cash flows from existing projects.

COMPONENTS

Before determining the amount of a company's cost of capital, it is necessary to determine its components. The following two sections describe in detail how to arrive at the cost of capital for these components. The weighted average calculation that brings together all the elements of the cost of capital is then described in the ''Calculating the Weighted Cost of Capital'' section.

The first component of the cost of capital is debt. This is a company's commitment to return to a lender both the interest and principal on an initial or series of payments to the company by the lender. This can be short-term debt, which is typically paid back in full within one year, or long-term debt, which can be repaid

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over many years, either with continual principal repayments, large repayments at set intervals, or a large payment when the entire debt is due, which is called a *balloon* payment. All these forms of repayment can be combined in an infinite number of ways to arrive at a repayment plan that is uniquely structured to fit the needs of the individual corporation.

The second component of the cost of capital is preferred stock. This is a form of equity that is issued to stockholders and that carries a specific interest rate. The company is only obligated to pay the stated interest rate to shareholders at stated intervals, but not the initial payment of funds to the company, which it may keep in perpetuity, unless it chooses to buy back the stock. There may also be conversion options, so that a shareholder can convert the preferred stock to common stock in some predetermined proportion. This type of stock is attractive to those companies that do not want to dilute earnings per share with additional common stock, and that also do not want to incur the burden of principal repayments. Though there is an obligation to pay shareholders the stated interest rate, it is usually possible to delay payment if the funds are not available, though the interest will accumulate and must be paid when cash is available.

The third and final component of the cost of capital is common stock. A company is not required to pay anything to its shareholders in exchange for the stock, which makes this the least risky form of funding available. Instead, shareholders rely on a combination of dividend payments, as authorized by the board of directors (and which are entirely at the option of the board—authorization is not required by law), and appreciation in the value of the shares. However, since shareholders indirectly control the corporation through the board of directors, actions by management that depress the stock price or lead to a reduction in the dividend payment can lead to the firing of management by the board of directors. Also, since shareholders typically expect a high return on investment in exchange for their money, the actual cost of these funds is the highest of all the components of the cost of capital.

As will be discussed in the next two sections, the least expensive of the three forms of funding is debt, followed by preferred stock and common stock. The main reason for the differences between the costs of the three components is the impact of taxes on various kinds of interest payments. This is of particular concern when discussing debt, which is covered in the next section.

CALCULATING THE COST OF DEBT

This section covers the main factors to consider when calculating the cost of debt, and also discusses how these factors must be incorporated into the final cost calculation. We also note how the net result of these calculations is a form of funding that is less expensive than the cost of equity, which is covered in the next section.

When calculating the cost of debt, it is important to remember that the interest expense is tax deductible. This means that the tax paid by the company is reduced by the tax rate multiplied by the interest expense. An example is shown in Exhibit 8.1, where we assume that $1,000,000 of debt has a basic interest rate of 9.5 percent and the corporate tax rate is 35 percent.

$$\frac{(\text{Interest expense}) \times (1 - \text{Tax rate})}{\text{Amount of debt}} = \text{Net after-tax interest expense}$$

Or,

$$\frac{\$95,000 \times (1 - 0.35)}{\$1,000,000} = \text{Net after-tax interest expense}$$

$$\frac{\$61,750}{\$1,000,000} = 6.175\%$$

EXHIBIT 8.1 Calculating the Interest Cost of Debt, Net of Taxes

The example clearly shows that the impact of taxes on the cost of debt significantly reduces the overall debt cost, thereby making this a most desirable form of funding.

If a company is not currently turning a profit, and therefore not in a position to pay taxes, one may question whether the company should factor the impact of taxes into the interest calculation. The answer is still yes, because any net loss will carry forward to the next reporting period, when the company can offset future earnings against the accumulated loss to avoid paying taxes at that time. Thus, the reduction in interest costs caused by the tax deductibility of interest is still applicable even if a company is not currently in a position to pay income taxes.

Another issue is the cost of acquiring debt, and how this cost should be factored into the overall cost of debt calculation. When obtaining debt, either through a private placement or simply through a local bank, there are usually extra fees involved, which may include placement or brokerage fees, documentation fees, or the price of a bank audit. In the case of a private placement, the company may set a fixed percentage interest payment on the debt, but find that prospective borrowers will not purchase the debt instruments unless they can do so at a discount, thereby effectively increasing the interest rate they will earn on the debt. In both cases, the company is receiving less cash than initially expected, but must still pay out the same amount of interest expense. In effect, this raises the cost of the debt. To carry forward the example in Exhibit 8.1 to Exhibit 8.2, we assume that the interest payments are the same, but that brokerage fees were $25,000 and the debt was sold at a 2 percent discount. The result is an increase in the actual interest rate.

$$\frac{(\text{Interest expense}) \times (1 - \text{Tax rate})}{(\text{Amount of debt} - \text{Fees} - \text{Discount on sale of debt})} = \text{Net after-tax interest expense}$$

Or,

$$\frac{\$95,000 \times (1 - 0.35)}{\$1,000,000 - \$25,000 - \$20,000} = \text{Net after-tax interest expense}$$

$$\frac{\$61,750}{\$955,000} = 6.466\%$$

EXHIBIT 8.2 Calculating the Interest Cost of Debt, Net of Taxes, Fees, and Discounts
Note: There can also be a premium on sale of debt instead of a discount, if investors are willing to pay extra for the interest rate offered. This usually occurs when the rate offered is higher than the current market rate, or if the risk of nonpayment is so low that this is perceived as an extra benefit by investors.

When compared to the cost of equity that is discussed in the following section, it becomes apparent that debt is a much less expensive form of funding than equity. However, though it may be tempting to alter a company's capital structure to increase the proportion of debt, thereby reducing the overall cost of capital, there are dangers involved in incurring a large interest expense. These dangers are discussed in the ''Modifying the Cost of Capital to Enhance Shareholder Value'' section.

CALCULATING THE COST OF EQUITY

This section shows how to calculate the cost of the two main forms of equity, which are preferred stock and common stock. These calculations, as well as those from the preceding section on the cost of debt, are then combined in the following section to determine the weighted cost of capital.

Preferred stock stands at a midway point between debt and common stock. It requires an interest payment to the holder of each share of preferred stock, but does not require repayment to the shareholder of the amount paid for each share. There are a few special cases where the terms underlying the issuance of a particular set of preferred shares will require an additional payment to shareholders if company earnings exceed a specified level, but this is a rare situation. Also, some preferred shares carry provisions that allow delayed interest payments to be cumulative, so that they must all be paid before dividends can be paid out to holders of common stock. The main feature shared by all kinds of preferred stock is that, under the tax laws, interest payments are treated as dividends instead of interest expense, which means that these payments are not tax deductible. This is a key issue, for it greatly increases the cost of funds for any company using this funding source. By way of comparison, if a company has a choice between issuing debt or preferred stock at the same rate, the difference in cost will be the tax savings on the debt. In the following example, a company issues $1,000,000 of debt and $1,000,000 of preferred stock, both at 9 percent interest rates, with an assumed 35 percent tax rate:

$$\begin{aligned}\text{Debt cost} &= \text{Principal} \times (\text{Interest rate} \times (1 - \text{Tax rate}))\\ \text{Debt cost} &= \$1{,}000{,}000 \times (9\% \times (1 - 0.35))\\ \$58{,}500 &= \$1{,}000{,}000 \times (9\% \times 0.65)\end{aligned}$$

If the same information is used to calculate the cost of payments using preferred stock, we have the following result:

$$\begin{aligned}\text{Preferred stock interest cost} &= \text{Principal} \times \text{Interest rate}\\ \text{Preferred stock interest cost} &= \$1{,}000{,}000 \times 9\%\\ \underline{\underline{\$90{,}000}} &= \$1{,}000{,}000 \times 9\%\end{aligned}$$

This example shows that the differential caused by the applicability of taxes to debt payments makes preferred stock a much more expensive alternative. This being the

case, why does anyone use preferred stock? The main reason is that there is no requirement to repay the stockholder for the initial investment, whereas debt requires either a periodic or balloon payment of principal to eventually pay back the original amount. Companies can also eliminate the preferred stock interest payments if they include a convertibility feature into the stock agreement that allows for a conversion to common stock at some preset price point for the common stock. Thus, in cases where a company does not want to repay principal any time soon, but does not want to increase the amount of common shares outstanding, preferred stock provides a convenient, though expensive, alternative.

The most difficult cost of funding to calculate by far is common stock, because there is no preset payment from which to derive a cost. Instead, it appears to be free money, since investors hand over cash without any predetermined payment or even any expectation of having the company eventually pay them back for the stock. Unfortunately, the opposite is the case. Since holders of common stock have the most at risk (they are the last ones paid off in the event of bankruptcy), they are the ones who want the most in return. Any management team that ignores its common stockholders and does nothing to give them a return on their investments will find that these people will either vote in a new board of directors that will find a new management team, or else they will sell off their shares at a loss to new investors, thereby driving down the value of the stock and opening up the company to the attentions of a corporate raider who will also remove the management team.

One way to determine the cost of common stock is to make a guess at the amount of future dividend payments to stockholders, and discount this stream of payments back into a net present value. The problem with this approach is that the amount of dividends paid out is problematic, since they are declared at the discretion of the board of directors. Also, there is no provision in this calculation for changes in the underlying value of the stock; for some companies that do not pay any dividends, this is the only way in which a stockholder will be compensated.

A better method is called the *capital asset pricing model* (CAPM). Without going into the very considerable theoretical detail behind this system, it essentially derives the cost of capital by determining the relative risk of holding the stock of a specific company as compared to a mix of all stocks in the market. This risk is composed of three elements. The first is the return that any investor can expect from a risk-free investment, which is usually defined as the return on a U.S. government security. The second element is the return from a set of securities considered to have an average level of risk. This can be the average return on a large ''market basket'' of stocks, such as the Standard & Poor's 500, the Dow Jones Industrials, or some other large cluster of stocks. The final element is a company's *beta*, which defines the amount by which a specific stock's returns vary from the returns of stocks with an average risk level. This information is provided by several of the major investment services, such as Value Line. A beta of 1.0 means that a specific stock is exactly as risky as the average stock, while a beta of 0.8 would represent a lower level of risk and a beta of 1.4 would be higher. When combined, this information yields the baseline return to be expected on any investment (the risk-free return), plus an added return that is based on the level of risk that an investor is assuming by purchasing a specific stock. This methodology is totally based on the assumption that the level of risk

equates directly to the level of return, which a vast amount of additional research has determined to be a reasonably accurate way to determine the cost of equity capital. The main problem with this approach is that a company's beta will vary over time, since it may add or subtract subsidiaries that are more or less risky, resulting in an altered degree of risk. Because of the likelihood of change, one must regularly recompute the equity cost of capital to determine the most recent cost.

A major problem with the use of beta for calculating a company's cost of equity capital is that it is based on past results, which may not accurately reflect a company's future prospects. Also, the beta calculation can result in drastically different results if the calculation period varies by as little as a few days, sometimes resulting in changes in beta of more than 100 percent. Given these problems, it has been proposed that the traded price of a company's equity options be used instead as the foundation for the beta calculation, since these prices are based on the market's best estimate of the future price volatility of the stock. This alternative method will only work if a company's equity options are publicly traded, though it may be possible to impute option data by using similar options issued by comparable companies.

The calculation of the equity cost of capital using the CAPM methodology is relatively simple, once one has accumulated all the components of the equation. For example, if the risk-free cost of capital is 5 percent, the return on the Dow Jones Industrials is 12 percent, and ABC Company's beta is 1.5, the cost of equity for ABC Company would be:

$$\begin{aligned}
\text{Cost of equity capital} &= \text{Risk-free return} + \text{Beta} \\
&\quad (\text{Average stock return} - \text{Risk-free return}) \\
\text{Cost of equity capital} &= 5\% + 1.5\,(12\% - 5\%) \\
\text{Cost of equity capital} &= 5\% + 1.5 \times 7\% \\
\text{Cost of equity capital} &= 5\% + 10.5\% \\
\text{Cost of equity capital} &= \underline{\underline{15.5\%}}
\end{aligned}$$

Though the example uses a rather high beta that increases the cost of the stock, it is evident that, far from being an inexpensive form of funding, common stock is actually the *most* expensive, given the size of returns that investors demand in exchange for putting their money at risk with a company. Accordingly, this form of funding should be used the most sparingly in order to keep the cost of capital at a lower level.

CALCULATING THE WEIGHTED COST OF CAPITAL

Now that we have derived the costs of debt, preferred stock, and common stock, it is time to assemble all three costs into a weighted cost of capital. This section is structured in an example format, showing the method by which the weighted cost of capital of the Canary Corporation is calculated. Following that, there is a short discussion of how the cost of capital can be used.

The CFO of the Canary Corporation, Mr. Birdsong, is interested in determining the company's weighted cost of capital, to be used to ensure that projects have a sufficient

return on investment, which will keep the company from going to seed. There are two debt offerings on the books. The first is $1,000,000, which was sold below par value and garnered $980,000 in cash proceeds. The company must pay interest of 8.5 percent on this debt. The second is for $3,000,000 and was sold at par, but included legal fees of $25,000. The interest rate on this debt is 10 percent. There is also $2,500,000 of preferred stock on the books, which requires annual interest (or dividend) payments amounting to 9 percent of the amount contributed to the company by investors. Finally, there is $4,000,000 of common stock on the books. The risk-free rate of interest, as defined by the return on current U.S. government securities, is 6 percent, while the return expected from a typical market basket of related stocks is 12 percent. The company's beta is 1.2, and it currently pays income taxes at a marginal rate of 35 percent. What is the Canary Company's weighted cost of capital?

The method we will use is to separately compile the percentage cost of each form of funding, and then calculate the weighted cost of capital, based on the amount of funding and percentage cost of each form. We begin with the first debt item, which was $1,000,000 of debt that was sold for $20,000 less than par value, at 8.5 percent debt. The marginal income tax rate is 35 percent. The calculation is:

$$\text{Net after-tax interest percent} = \frac{(\text{Interest expense} \times (1 - \text{Tax rate})) \times \text{Amount of debt}}{\text{Amount of debt} - \text{Discount on sale of debt}}$$

$$\text{Net after-tax interest percent} = \frac{(8.5\% \times (1 - 0.35)) \times \$1{,}000{,}000}{\$1{,}000{,}000 - \$20{,}000}$$

$$\text{Net after-tax interest percent} = \underline{\underline{5.638\%}}$$

We employ the same method for the second debt instrument, for which there is $3,000,000 of debt that was sold at par. Legal fees of $25,000 were incurred to place the debt, which pays 10 percent interest. The marginal income tax rate remains at 35 percent. The calculation is:

$$\text{Net after-tax interest percent} = \frac{(\text{Interest expense} \times (1 - \text{Tax rate})) \times \text{Amount of debt}}{\text{Amount of debt} - \text{Discount on sale of debt}}$$

$$\text{Net after-tax interest percent} = \frac{(10\% \times (1 - 0.35)) \times \$3{,}000{,}000}{\$3{,}000{,}000 - \$25{,}000}$$

$$\text{Net after-tax interest percent} = \underline{\underline{7.091\%}}$$

Having completed the interest expense for the two debt offerings, we move on to the cost of the preferred stock. As noted earlier, there is $2,500,000 of preferred stock on the books, with an interest rate of 9 percent. The marginal corporate income tax does not apply, since the interest payments are treated like dividends and are not deductible. The calculation is the simplest of all, for the answer is 9 percent, since there is no income tax to confuse the issue.

To arrive at the cost of equity capital, we take from the example a return on riskfree securities of 6 percent, a return of 12 percent that is expected from a typical market

EXHIBIT 8.3 Weighted Cost of Capital Calculation

Type of Funding	Amount of Funding	Percentage Cost	Dollar Cost
Debt number 1	$ 980,000	5.638%	$ 55,252
Debt number 2	2,975,000	7.091%	210,957
Preferred stock	2,500,000	9.000%	225,000
Common stock	4,000,000	13.200%	528,000
Totals	$10,455,000	**9.75%**	$1,019,209

basket of related stocks, and a beta of 1.2. We then plug this information into the following formula to arrive at the cost of equity capital:

$$\begin{aligned}\text{Cost of equity capital} &= \text{Risk-free return} + \text{Beta} \\ &\quad (\text{Average stock return} - \text{Risk-free return}) \\ \text{Cost of equity capital} &= 6\% + 1.2\,(12\% - 6\%) \\ \text{Cost of equity capital} &= \underline{\underline{13.2\%}}\end{aligned}$$

Now that we know the cost of each type of funding, it is a simple matter to construct a table, such as the one shown in Exhibit 8.3 that lists the amount of each type of funding and its related cost, which we can quickly sum to arrive at a weighted cost of capital.

When combined into the weighted average calculation shown in Exhibit 8.3, we see that the weighted cost of capital is 9.75 percent. Though there is some considerably less expensive debt on the books, the majority of the funding is composed of more expensive common and preferred stock, which drives up the overall cost of capital.

Thus far, we have discussed the components of the cost of capital, how each one is calculated, and how to combine all the various kinds of capital costs into a single weighted cost of capital. Now that we have it, what do we use it for?

INCREMENTAL COST OF CAPITAL

Having gone to the effort of calculating a company's weighted cost of capital, we must ask ourselves if this information is of any use. Certainly, we now know the cost of all corporate funding, but this is the cost of funding that has already been incurred. How does this relate to the cost of capital for any upcoming funding that has not yet been obtained? What if a company wants to change its blend of funding sources, and how will this impact the cost of capital? What about using it to discount the cash flows from existing projects?

The trouble with the existing weighted cost of capital is that it reflects the cost of debt and equity only at the time the company obtained it. For example, if a company obtained debt at a fixed interest rate during a period in the past when the prime rate offered by banks for new debt was very high, the resulting cost of capital, which still includes this debt, will be higher than the cost of capital if that debt had been retired and

refunded by new debt obtained at current market rates, which are lower. The same issue applies to equity, for the cost of equity can change if the underlying return on risk-free debt has changed, which it does continually (just observe daily or monthly swings in the cost of U.S. government securities, which are considered to be risk-free). Similarly, a company's beta will change over time as its overall risk profile changes, possibly due to changes in its markets, or internal changes that alter its mix of business. Accordingly, a company may find that its carefully calculated weighted cost of capital does not bear even a slight resemblance to what the same cost would be if recalculated based on current market conditions.

Where does this disturbing news leave us? If there is no point in using the weighted cost of capital that is recorded on the books, there is no reason why we cannot calculate the incremental weighted cost of capital based on current market conditions and use that as a hurdle rate instead. By doing so, a company recognizes that it will obtain funds at the current market rates and use the cost of this blended rate to pay for new projects. For example, if a company intends to retain the same proportions of debt and equity, and finds that the new weighted cost of capital is 2 percent higher at current market rates than the old rates recorded on the company books, then the hurdle rate used for evaluating new projects should use the new, higher rate.

It is also important to determine management's intentions in regard to the new blend of debt and equity, for changes in the proportions of the two will alter the weighted cost of capital. If a significant alteration in the current mix is anticipated, the new proportion should be factored into the weighted cost of capital calculation. For example, management may be forced by creditors or owners to alter the existing proportion of debt and equity. This is most common when a company is closely held, and the owners do not want to invest any more equity in the company, thereby forcing it to resort to debt financing. Alternatively, if the debt-to-equity ratio is very high, lenders may force the addition of equity in order to reduce the risk of default, which goes up when there is a large amount of interest and principal to pay out of current cash flow. In short, the incremental cost of capital is the most relevant hurdle rate figure when using new funds to pay for new projects.

The concept of incremental funds costs can be taken too far, however. If a company is only initiating one project in the upcoming year and needs to borrow funds at a specific rate to pay for it, then a good case can be made for designating the cost of that funding as the hurdle rate for the single project under consideration, since the two are inextricably intertwined. However, such a direct relationship is rarely the case. Instead, there are many projects being implemented, which are spread out over a long time frame, with funds being acquired at intervals that do not necessarily match those of the funds requirements of individual projects. For example, a CFO might hold off on an equity offering in the public markets until there is a significant upswing in the stock market, or borrow funds a few months early if he or she can obtain a favorably low, long-term fixed rate. When this happens, there is no way to tie a specific funding cost to a specific project, so it is better to calculate the blended cost of capital for the period and apply it as a hurdle rate to all of the projects currently under consideration.

All this discussion of the incremental cost of capital does not mean that the cost of capital that is derived from the book cost of existing funding is totally irrelevant—far

from it. Many companies finance all new projects out of their existing cash flow, and have no reason to go to outside lenders or equity markets to obtain new funding. For these organizations, the true cost of debt is indeed the same as the amount recorded on their books, since they are obligated to pay that exact amount of debt, irrespective of what current market interest rates may be. However, the weighted cost of capital does not just include debt—it also includes equity, and this cost *does* change over time. Even if a company has no need for additional equity, the cost of its existing equity will change, because the earnings expectations of investors will change over time, as well as the company's beta. For example, the underlying risk-free interest rate can and will change as the inflation rate varies, so that there is some return to investors that exceeds the rate of inflation. Similarly, the average market rate of return on equity will change over time as investor expectations change. Further, the mix of businesses and markets in which a company is involved will inevitably lead to variation in its beta over time, as the variability of its cash flows becomes greater or lower. All three of these factors will result in alterations to the weighted cost of capital that will continue to change over time, even if there is no new equity that a company sells to investors. Consequently, the book cost of debt is still a valid part of the weighted cost of capital as long as no new debt is added, whereas the cost of equity *will* change as the expectation for higher or lower returns by investors changes, which results in a weighted cost of capital that can blend the book and market costs of funding in some situations.

So far, the discussion in this chapter has assumed that the reader is only interested in using the weighted cost of capital as a hurdle rate for determining the viability of new projects that will generate a stream of cash flows. It can also be used as the discounting factor when arriving at the net present value of cash flows from existing projects, as is discussed in the next chapter. When this is the case, the cost of capital based on the book value of debt is more appropriate than using the current market rates for new debt, since the cash flows being discounted are for existing projects that were already funded by debt and equity already recorded on the books.

This section noted how the incremental market cost of capital is the more accurate way to arrive at a hurdle rate for new projects when new funding must be secured to pay for the projects. If a company can fund all cash flows for new projects internally, however, a company can use the book cost of debt and the market-based return on equity to derive the weighted cost of capital that is most accurately used to judge the acceptability of cash flows from prospective new projects. This later version is also most appropriate for discounting the cash flows from existing and previously funded projects.

USING THE COST OF CAPITAL IN SPECIAL SITUATIONS

There are a few situations in which companies frequently modify the cost of capital for special purposes. This section notes two of the more common cases, and how to handle them.

When management is considering whether to authorize a project through the capital request process, it should give some thought to the risk of not achieving the

estimated returns for it. For example, if management is considering funding two projects with identical cash flows, where one is in an established industry where returns are relatively certain and another is in a ''high-technology'' field where product obsolescence is the norm, it is a fair bet that the cash-flow considerations will not form the basis of its decision—the project in the high-technology area will almost certainly be eliminated from consideration on the grounds that the risk of not achieving the projected cash flow is too high. How can one quantify this risk? The short answer is—not easily. Many organizations simply assign a higher cost of capital hurdle rate to risky projects. Unfortunately, it is very difficult to reliably determine what this higher hurdle rate should be. Is a premium of 1 percent over the cost of capital sufficient, or is 5 percent closer to the desired level? The problem is that the increase in the cost of capital cannot be reliably calculated to reflect the exact increase in risk. Instead, this is more a matter of management determining its own comfort level with the risk, and making a decision at that point. To do so, management will need additional information to supplement the cost of capital hurdle rate:

- *Timing of cash flows.* If the positive cash flows from a proposed project are clustered toward the end of a project, perhaps five years away, this sort of project is riskier than one that returns positive cash flows right away.
- *Payback period.* The sooner a project pays back its projected cash outflows, the less risky the project is perceived to be, even if the chance of having large positive cash flows is relatively small. The point here is that the risk of loss is reduced with a quick payback.
- *Level of expected competition.* If a number of competitors are clustering their efforts in the same area, it is a fair bet that there will be price competition when everyone's projects are completed and start to spew new products into the marketplace, resulting in reduced profits for all competitors. One can quantify this risk somewhat by modeling a range of profit scenarios based on a number of different product price points. A further degree of sophistication is to include in the cash-flow analysis the estimated dates at which product pricing is anticipated to drop, based on when competing projects are estimated to be completed, resulting in high competition.
- *History of previous projects in this area.* If a company has funded a number of projects in the same area, and the majority of them have not done well, this is certainly a consideration in determining the level of project risk. Unless management thinks it can improve the situation by bringing in new project managers or doing something else to improve the probability of success, a project with this type of history should be assigned a higher degree of risk.

Thus, it is not necessary to blindly increase the hurdle rate, as defined by the cost of capital, to evaluate a new capital project, since a higher hurdle rate does not sufficiently define the level of risk. Instead, it is better to provide management with a range of supplemental data, as already noted, that provide more information about the likely level of project riskiness.

Another special situation in which the cost of capital can be modified is when it is used in a large corporation with multiple divisions that bear no close relationship to

one another in terms of the markets they serve, the products they sell, or their methods of obtaining funding. The most common example of this is a conglomerate, which is an assemblage of unrelated businesses that are frequently brought together under one corporate umbrella because they have uniformly high returns on investment, or because they have offsetting cash flows—in other words, one subsidiary may have strong cash flows that match swings in the business cycle, while a fellow subsidiary has cash flows that track the inverse of the business cycle. When combined, the cash flows of the two entities theoretically result in even cash flows at all times, and a reduced level of risk for the conglomerate as a whole. In such situations, the conglomerate is the entity that obtains financing, and this results in a specific cost of capital. However, the levels of risk of all the component subsidiaries may diverge wildly from the overall level of risk, resulting in the application of a conglomerate-wide hurdle rate to all subsidiaries that is either too high or too low for each individual subsidiary. For example, a subsidiary with a very high risk of return on its projects will be subject to a hurdle rate that is compiled from the conglomerate as a whole, which may have been assembled for the express purpose of achieving a very low level of variability in cash flows, which of course results in a low cost of equity, and consequently a low cost of capital. When this happens, nearly all the projects of the risky subsidiary will be approved, since the hurdle rate is so low, without any consideration for the high degree of risk. A probable outcome is that the cash flows from many of these projects will be substandard, resulting in low future performance by this subsidiary. Alternatively, using the same hurdle rate for a different subsidiary with extremely low-risk projects will result in the rejection of some projects that are quite capable of generating an adequate return on investment. Thus, using an average hurdle rate for subsidiaries is not a good idea.

Instead, you can determine an average hurdle rate from information about the competitors in each subsidiary's industry, which is available from public sources such as 10-K or 10-Q reports, or the investment analyses of any of the major brokerage firms. By doing so, you can compile the cost of capital of the industry, or of selected competitors within each industry, and use that as the hurdle rate for applicable subsidiaries. Though not as accurate as determining the specific cost of capital of the subsidiary (which is not possible, since it has no equity or debt of its own—that is held by the corporate parent), it is still much more accurate than the overall cost of capital of the entire organization. This is the preferred method for calculating the cost of capital of a corporate subsidiary.

MODIFYING THE COST OF CAPITAL TO ENHANCE SHAREHOLDER VALUE

The preceding sections make it clear that shareholders can expect a higher return on their investment if the bulk of a company's funding is obtained through debt instead of equity, since debt costs are partially offset by tax-deductible interest expenses. In this section, we cover the extent to which shareholders can increase their returns by this means, as well as the risks of following this approach to an excessive degree.

EXHIBIT 8.4 Itemization of Changes in Return on Equity with Stock Buyback

Pre-Debt Earnings	Pre-Debt Equity	Amount of Buyback	Amount of After-Tax Interest Expense	Net Earnings	Return on Equity
$150,000	$500,000	$ 25,000	$ 2,000	$148,000	31.2%
150,000	500,000	50,000	4,000	146,000	32.4%
150,000	500,000	75,000	6,000	144,000	33.8%
150,000	500,000	100,000	8,000	142,000	35.5%
150,000	500,000	125,000	10,000	140,000	37.3%
150,000	500,000	150,000	12,000	138,000	39.4%
150,000	500,000	175,000	14,000	136,000	41.8%
150,000	500,000	200,000	16,000	134,000	44.7%
150,000	500,000	225,000	18,000	132,000	48.0%

When company management or owners examine ways to improve the return on equity, one relatively easy method that stands out is buying back some portion of the equity from stockholders with borrowed funds. What this does is reduce the amount of equity that is divided into the earnings, resulting in a greater amount of earnings per share. Exhibit 8.4 shows what happens when XYZ Company, with $150,000 in earnings, $500,000 in equity, and no debt, decides to buy back shares with funds that are obtained by borrowing. The net after-tax cost of the new debt is assumed to be 8 percent, which reduces the amount of reported earnings somewhat.

As shown in Exhibit 8.4, there are major benefits to be had by introducing some debt into the capital structure in order to reduce the amount of equity. The example could be continued to the point where only one share of stock is outstanding, which can yield an extraordinarily high return on equity figure. The method is especially appealing for those companies whose shares are held by a small group of owners who cannot or will not invest additional equity in the business, and who prefer to strip out equity for their own uses as frequently as possible. Accordingly, if the return on equity percentage is considered important, altering the cost of capital by buying back stock is one of the easiest ways to do so.

However, there is a great risk that this strategy can backfire. The problem with shifting the capital structure strongly in the direction of debt and away from equity is that debt requires repayment, whereas equity does not. Because of this, a company's cash flow is impeded by the required debt and principal repayments to lenders, which can be a dangerous situation whenever the business cycle declines or company cash flow drops for other reasons, such as increased competition. When this happens, a company may not be able to meet the payment demands of its lenders, possibly resulting in bankruptcy and the loss of all owner equity.

Management can anticipate this problem by examining the variability of both existing and projected cash flows, and determining the likelihood and extent of potential

drops in cash flow. This is obviously a highly judgmental process, since it is only the opinion of management (which may vary considerably by manager) as to how far down cash flow can go during lean times. Nonetheless, the consensus minimum cash flow should be agreed on. Then the CFO can use this information to determine the amount of debt that can safely be added to the balance sheet while still ensuring that all debt payments can be made. A key factor in this calculation is determining management's level of comfort with the proportion of debt payments that will take up the minimum level of cash flow. For example, many managers are not at all comfortable with the thought of having virtually all of the minimum cash flow being allocated to debt payments, since there is no room left for capital or working capital additions that may be needed to improve the business. Consequently, some reduced proportion of the minimum cash flow level is normally used when determining the level of debt that can be taken on. An example of how this maximum debt level is determined is shown in Exhibit 8.5, where the minimum cash-flow level is assumed to be $50,000. The rest of the table determines the return on equity using a range of debt levels taken from the preceding Exhibit 8.4 that fall within this minimum cash-flow level. Management can then review the table and select the combination of earnings level, return on equity, and risk that it feels most comfortable with, and then proceed to attain that level by using debt to buy back stock.

In Exhibit 8.5, it would be very unwise to increase the amount of debt to anything beyond the minimum possible cash-flow level, even though it is possible to increase the return on equity to stratospheric levels by doing so. A better option is to adopt one of the lower debt levels that still leaves room in the minimum amount of cash flow to cover other operating needs.

For those industries such as amusement parks, where cash flow varies widely from month to month, or the airlines, where it varies in longer cycles, it is generally not a good idea to increase the proportion of debt to excessive levels. The reason is that cash

EXHIBIT 8.5 Table of Cash Usage Versus Return on Equity

Minimum Cash Flow	Debt Level	Debt-Related Payments (Principal and Interest)	Proportion of Cash Flow Used by Debt Payments	Percentage of Return on Equity
$50,000	$ 25,000	$ 8,000	16%	31.2%
50,000	50,000	16,000	32%	32.4%
50,000	75,000	24,000	48%	33.8%
50,000	100,000	32,000	64%	35.5%
50,000	125,000	40,000	80%	37.3%
50,000	150,000	48,000	96%	39.4%
50,000	175,000	56,000	112%	41.8%
50,000	200,000	64,000	128%	44.7%
50,000	225,000	72,000	144%	48.0%

flows are more likely to bottom out during slow periods at extremely low levels, quite possibly requiring that more debt be incurred just to keep operations running. When this happens, a large amount of cash flow that is tied up in the servicing of debt makes it extremely likely that a company will have difficulty in meeting its debt payment obligations, which raises the specter of bankruptcy. Alternatively, if there is an exceptionally steady and predictable level of cash flow that is minimally impacted by long business cycles, the company fortunate enough to experience this situation is ideally positioned to take advantage of an increased degree of leverage and a correspondingly higher return on equity. The key is to be sensitive to swings in cash flow, and to model the appropriate mix of debt and capital to match these swings.

STRATEGIZING COST OF CAPITAL REDUCTIONS

A fair number of companies know how to calculate the cost of capital and have done so at some point in the past. However, how frequently do they recalculate the cost of capital, and (especially) do they ever discuss the ways in which it can be reduced? This is a particular problem for debt-heavy companies who have more than the optimal debt levels. For these organizations, the primary concern is that the next dollar of debt will become increasingly difficult to obtain, requiring an incremental cost of capital that could be sky high.

Even for those companies with more moderate debt levels, it is certainly worthwhile to regularly strategize over how the corporate cost of capital can be reduced, since even a decline of a few basis points drops straight into net profits.

Shrinking the cost of capital usually requires one of two approaches: either obtain guarantees that will allow lenders to reduce their rates, or free up enough cash to pay off higher-cost debt. Obtaining guarantees is a difficult proposition, and will require the cooperation of either a wealthy individual or a corporate parent. However, improving cash flow is a more viable alternative for nearly everyone. Here are some possible ways to do so:

- Review the capital spending plan to determine which planned purchases do not involve increases in the capacity of bottleneck operations, and eliminate them if they do not.
- Aggressively pursue early payment discounts for a few large-dollar customer accounts in order to squeeze more funds out of accounts receivable.
- Sort the inventory records by turnover for each item, and research the reasons why low-turnover items are still in stock. Chances are good that some policy changes are needed regarding buying in excessively large quantities, implementing engineering change orders before raw material stocks have been exhausted, and having production runs longer than what are actually needed by customers.

These approaches are useful for locating cash within working capital, which can be used to draw down debt balances and thereby shrink the cost of capital.

SUMMARY

In this chapter, we reviewed the various components of the weighted cost of capital, and how the cost components vary due to the applicability (or inapplicability) of taxes.

Because of taxes, there is a strong incentive to use debt instead of equity, but this can lead to considerable additional risk if a company is unable to cover the principal or interest payments on that debt. We also noted how the current market cost of capital is superior to the book method when using the cost of capital to evaluate new projects. When used with a full knowledge of the consequences of miscalculation or misuse, the weighted average cost of capital is an excellent benchmark for determining the ability of a proposed new project to provide positive cash flow to a corporation, as well as the discounted cash flows from existing projects. We also covered the use of long-term planning to reduce the cost of capital.

CHAPTER NINE

9 Capital Budgeting

ONE OF THE MOST common financial analysis tasks with which a CFO is confronted is evaluating capital investments. In some industries, the amount of money poured into capital improvements is a very substantial proportion of sales, and so is worthy of a great deal of analysis to ensure that a company is investing its cash wisely in internal improvements. In this section, we review the concept of the hurdle rate, as well as multiple approaches for evaluating capital investments. We also discuss problems with the capital budget approval process and cash flow modeling issues, and then finish with reviews of the capital investment proposal form and the post-completion project analysis, which brings to a close the complete cycle of evaluating a capital project over the entire course of its acquisition, installation, and operation.

HURDLE RATE

When a CFO is given a capital investment proposal form to review, he or she needs some basis on which to conduct the evaluation. What makes a good capital investment? Is it the project with the largest net cash flow, or the one that uses the least capital, or some other standard of measure?

The standard criterion for investment is the *hurdle rate*. This is the discounting rate at which all of a company's investments must exhibit a positive cash flow. It is called a hurdle rate because the summary of all cash flows must exceed, or hurdle, this rate, or else the underlying investments will not be approved. The use of a discount rate is extremely important, for it reduces the value of cash inflows and outflows scheduled for some time in the future, so that they are comparable to the value of cash flows in the present. Without the use of a discount rate, we would judge the value of a cash flow ten years in the future to be the same as one that occurs right now. However, the difference between the two is that the funds received now can also earn interest for the next ten

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by Steven M. Bragg

years, whereas there is no such opportunity to invest the funds that will arrive in ten years. Consequently, a discount rate is the great equalizer that allows us to make one-to-one comparisons between cash flows in different periods.

The hurdle rate is derived from the cost of capital, which is covered in depth in Chapter 8, ''Cost of Capital.'' This is the average cost of funds that a company uses, and is based on the average cost of its debt, equity, and various other funding sources that are combinations of these two basic forms of funds. For example, if a company has determined its cost of capital to be 16 percent, then the discounted cash flows from all of its new capital investments, using that discount rate, must yield a positive return. If they do not, then the funds flow resulting from its capital investments will not be sufficient for the company to pay for the funds it invested. Thus, the primary basis on which a CFO reviews potential capital investments is the hurdle rate.

A company may choose to use several hurdle rates, depending on the nature of the investment. For example, if the company must install equipment to make its production emissions compliant with federal air quality standards, then there is no hurdle rate at all—the company must complete the work, or be fined by the government. At the opposite extreme, a company may assign a high hurdle rate to all projects that are considered unusually risky. For example, if capital projects are for the extension of a current production line, there is very little perceived risk, and a hurdle rate that matches the cost of capital is deemed sufficient. However, if the capital expenditure is for a production line that creates equipment in a new market, where the company is the first entrant, and no one knows what kind of sales will result, the hurdle rate may be set a number of percentage points higher than the cost of capital. Thus, different hurdle rates can apply to different situations.

Having now given the reasons why the hurdle rate is the fundamental measuring stick against which all capital investments are evaluated, we will deal with the one exception to the rule—the payback period.

PAYBACK PERIOD

We have just seen how the primary criterion for evaluating a capital investment is its ability to return a profit that exceeds a hurdle rate. However, this method misses one important element, which is that it does not fully explain investment risk in a manner that is fully understandable to managers. Investment risk can be defined as the chance that the initial investment will not be earned back, or that the rate of return target will not be met. Discounting can be used to identify or weed out such projects, simply by increasing the hurdle rate. For example, if a project is perceived to be risky, an increase in the hurdle rate will reduce its net present value, which makes the investment less likely to be approved by management. However, management may not be comfortable dealing with discounted cash-flow methods when looking at a risky investment—they just want to know how long it will take until they get their invested funds back. Though this is a decidedly unscientific way to review cash flows, the author has yet to find a management team that did not insist on seeing a payback calculation alongside other, more sophisticated, analysis methods.

EXHIBIT 9.1 Stream of Cash Flows for a Payback Calculation

Year	Cash Flow
1	$1,000,000
2	1,250,000
3	1,500,000
4	2,000,000
5	3,000,000

There are two ways to calculate the payback period. The first method is the easiest to use, but can yield a skewed result. That calculation is to divide the capital investment by the average annual cash flow from operations. For example, in Exhibit 9.1 we have a stream of cash flows over five years that is heavily weighted toward the time periods that are furthest in the future. The sum of those cash flows is $8,750,000, which is an average of $1,750,000 per year. We will also assume that the initial capital investment was $6,000,000. Based on this information, the payback period is $6,000,000 divided by $1,750,000, which is 3.4 years. However, if we review the stream of cash flows in Exhibit 9.1, it is evident that the cash inflow did not cover the investment at the 3.4-year mark. In fact, the actual cash inflow did not exceed $6,000,000 until shortly after the end of the fourth year. What happened? The stream of cash flows in the example was so skewed toward future periods that the annual *average* cash flow was not representative of the annual actual cash flow. Thus, we can use the averaging method only if the stream of future cash flows is relatively even from year to year.

The most accurate way to calculate the payback period is to do so manually. This means that we deduct the total expected cash inflow from the invested balance, year by year, until we arrive at the correct period. For example, we have recreated the stream of cash flows from Exhibit 9.1 in Exhibit 9.2, but now with an extra column that shows the net capital investment remaining at the end of each year. We can use this format to reach the end of year four; we know that the cash flows will pay back the investment sometime during year five, but we do not have a month-by-month cash flow that tells us precisely when. Instead, we can assume an average stream of cash flows during that

EXHIBIT 9.2 Stream of Cash Flows for a Manual Payback Calculation

Year	Cash Flow	Net Investment Remaining
0	0	$6,000,000
1	$1,000,000	5,000,000
2	1,250,000	3,750,000
3	1,500,000	2,250,000
4	2,000,000	250,000
5	3,000,000	—

period, which works out to $250,000 per month ($3,000,000 cash inflow for the year, divided by 12 months). Since there was only $250,000 of net investment remaining at the end of the fourth year, and this is the same monthly amount of cash flow in the fifth year, we can assume that the payback period is 4.1 years.

As already stated, the payback period is not a highly scientific method, because it completely ignores the time value of money. Nonetheless, it tells management how much time will pass before it recovers its invested funds, which can be useful information, especially in environments such as high technology, where investments must attain a nearly immediate payback before they become obsolete. Accordingly, it is customary to include the payback calculation in a capital investment analysis, though it must be strongly supplemented by discounted cash-flow analyses, which are described in the next two sections.

NET PRESENT VALUE

The typical capital investment is composed of a string of cash flows, both in and out, that will continue until the investment is eventually liquidated at some point in the future. These cash flows comprise many things: the initial payment for equipment, continuing maintenance costs, salvage value of the equipment when it is eventually sold, tax payments, receipts from product sold, and so on. The trouble is, since the cash flows are coming in and going out over a period of many years, how do we make them comparable for an analysis that is done in the present? As noted earlier in the section on hurdle rates, we can use a discount rate to reduce the value of a future cash flow into what it would be worth right now. By applying the discount rate to each anticipated cash flow, we can reduce and then add them together, which yields a single combined figure that represents the current value of the entire capital investment. This is known as its net present value.

For an example of how net present value works, we have listed in Exhibit 9.3 the cash flows, both in and out, for a capital investment that is expected to last for five years. The year is listed in the first column, the amount of the cash flow in the second column,

EXHIBIT 9.3 Simplified Net Present Value Example

Year	Cash Flow	Discount Factor*	Present Value
0	−$100,000	1.0000	−$100,000
1	+25,000	0.9259	+23,148
2	+25,000	0.8573	+21,433
3	+25,000	0.7938	+19,845
4	+30,000	0.7350	+22,050
5	+30,000	0.6806	+20,418
		Net Present Value	+$6,894

*Discount factor is 8%.

and the discount rate in the third column. The final column multiplies the cash flow from the second column by the discount rate in the third column to yield the present value of each cash flow. The grand total cash flow is listed in the lower-right corner of the exhibit.

Notice that the discount factor in Exhibit 9.3 becomes progressively smaller in later years, since cash flows further in the future are worth less than those received sooner. The discount factor is published in present value tables, which are listed in many accounting and finance textbooks. They are also a standard feature in mid-range handheld calculators. Another variation is to use the following formula to manually compute a present value:

$$\text{Present value of future cash flow} = \frac{\text{Future cash flow}}{(1 + \text{Discount rate})^{\text{Number of periods of discounting}}}$$

Using this formula, if we expect to receive $75,000 in one year, and the discount rate is 15 percent, then the calculation is:

$$\text{Present value} = \frac{\$75,000}{(1 + 0.15)^1}$$

$$\text{Present value} = \$65,217.39$$

The example shown in Exhibit 9.3 was of the simplest possible kind. In reality, there are several additional factors to take into consideration. First, there may be multiple cash inflows and outflows in each period, rather than the single lump sum that was shown in the example. If a CFO wants to know precisely what is the cause of each cash flow, then it is best to add a line to the net present value calculation that clearly identifies the nature of each item and discounts it separately from the other line items. Another issue is which items to include in the analysis and which to exclude. The basic rule of thumb is that it must be included if it impacts cash flow, and stays out if it does not. The most common cash-flow line items to include in a net present value analysis are as follows:

- *Cash inflows from sales.* If a capital investment results in added sales, then all gross margins attributable to that investment must be included in the analysis.
- *Cash inflows and outflows for equipment purchases and sales.* There should be a cash outflow when a product is purchased, as well as a cash inflow when the equipment is no longer needed and is sold off.
- *Cash inflows and outflows for working capital.* When a capital investment occurs, it normally involves the use of some additional inventory. If there are added sales, then there will probably be additional accounts receivable. In either case, these are additional investments that must be included in the analysis as cash outflows. Also, if the investment is ever terminated, then the inventory will presumably be sold off and the accounts receivable collected, so there should be line items in the analysis, located at the end of the project time line, showing the cash inflows from the liquidation of working capital.

- *Cash outflows for maintenance.* If there is production equipment involved, then there will be periodic maintenance needed to ensure that it runs properly. If there is a maintenance contract with a supplier that provides the servicing, then this too should be included in the analysis.
- *Cash outflows for taxes.* If there is a profit from new sales that are attributable to the capital investment, then the incremental income tax that can be traced to those incremental sales must be included in the analysis. Also, if there is a significant quantity of production equipment involved, the annual personal property taxes that can be traced to that equipment should also be included.
- *Cash inflows for the tax effect of depreciation.* Depreciation is an allowable tax deduction. Accordingly, the depreciation created by the purchase of capital equipment should be offset against the cash outflow caused by income taxes. Though depreciation is really just an accrual, it does have a net cash flow impact caused by a reduction in taxes, and so should be included in the net present value calculation.

The net present value approach is the best way to see if a proposed capital investment has a sufficient rate of return to justify the use of any required funds. Also, because it reveals the amount of cash created in excess of the corporate hurdle rate, it allows management to rank projects by the amount of cash they can potentially spin off, which is a good way to determine which projects to fund if there is not enough cash available to pay for an entire set of proposed investments.

In the next section, we look at an alternative discounting method that focuses on the rate of return of a capital investment's cash flows, rather than the amount of cash left over after being discounted at a standard hurdle rate, as was the case with the net present value methodology.

INTERNAL RATE OF RETURN

The end result of a net present value calculation is the amount of money that is earned or lost after all related cash flows are discounted at a present hurdle rate. This is a good evaluation method, but what if management wants to know the overall return on investment of the same stream of cash flows? Also, what if the net present value was negative, but only by a small amount, so that management wants to know how far off a project's rate of return varies from the hurdle rate? Also, what if management wants to rank projects by their overall rates of return, rather than by their net present values? All of these questions can be answered by using the internal rate of return (IRR) method.

The IRR method is very similar to the net present value method, because we use the same cash-flow layout, itemizing the net inflows and outflows by year. The difference is that, using the IRR method, we use a high-low approach to find the discount rate at which the cash flows equal zero. At that point, the discount rate equals the rate of return on investment for the entire stream of cash flows associated with the capital investment. To illustrate how the method works, we will begin with the standard net present value format that was listed in the last section. This time, we have

EXHIBIT 9.4 Internal Rate of Return Calculation, Low Estimate

Year	Cash Flow	Internal Rate of Return = 7%	Present Value
0	−$250,000	1.000	−$250,000
1	+55,000	0.9345	+51,398
2	+60,000	0.8734	+52,404
3	+65,000	0.8163	+53,060
4	+70,000	0.7629	+53,403
5	+75,000	0.7130	+53,475
		Net Present Value	+$13,740

a new set of annual cash flows, as shown in Exhibit 9.4. The difference between this calculation and the one used for net present value is that we are going to guess at the correct rate of return and enter this amount in the ''Internal Rate of Return'' column. We enter the discount rates for each year, using a low-end assumption of a 7 percent rate of return.

The end result of the calculation is that we have a positive net present value of $13,740. Since we are shooting for the IRR percentage at which the net present value is zero, this means that we must increase the IRR. If the net present value had been negative, we would have reduced the IRR percentage instead. We will make a higher guess at an IRR of 9 percent and run the calculation again, which is shown in Exhibit 9.5.

The result of the calculation in Exhibit 9.5 is very close to a net present value of 9 percent. If we want to try a few more high-low calculations, we can zero in on the IRR more precisely. In the example, the actual IRR is 8.9 percent.

This approach seems like a very slow one, and it is. A different approach, if the reader has access to an electronic spreadsheet such as Microsoft Excel, is to enter the stream of cash flows into it and enter a formula that the computer uses to instantly

EXHIBIT 9.5 Internal Rate of Return Calculation, High Estimate

Year	Cash Flow	Internal Rate of Return = 9%	Present Value
0	−$250,000	1.000	−$250,000
1	+55,000	0.9174	+50,457
2	+60,000	0.8417	+50,502
3	+65,000	0.7722	+50,193
4	+70,000	0.7084	+49,588
5	+75,000	0.6499	+48,743
		Net Present Value	−$517

EXHIBIT 9.6 Internal Rate of Return Calculation

Year	Cash Flow
0	**($250,000)**
1	55,000
2	60,000
3	65,000
4	70,000
5	75,000
Internal Rate of Return (IRR):	**8.9%**
Text of IRR Formula:	**= IRR(E6:E11)**

calculate the internal rate of return. For example, the screen printout shown in Exhibit 9.6 contains the same stream of cash flows shown earlier in Exhibits 9.4 and 9.5. In this case, we have used the Excel formula for the internal rate of return to give us the IRR automatically. For the sake of clarity, we have duplicated the formula in a text format immediately below the main formula.

The internal rate of return is best used in conjunction with the net present value calculation, because it can be misleading when used by itself. One problem is that it favors those capital investments with very high rates of return, even if the total dollar return is rather small. An example of this is when a potential investment of $10,000 has a return of $3,000, which equates to a 30 percent rate of return, and is ranked higher than a $100,000 investment with a return of $25,000 (which has a 25 percent rate of return). In this case, the smaller project certainly has a greater rate of return, but the larger project will return more cash in total than the smaller one. If there were only enough capital available for one of the two projects, perhaps $100,000, and the smaller project were selected because of its higher rate of return, then the total return would be less than optimal, because much of the funds are not being invested at all. In this situation, only $3,000 is being earned, even though $100,000 can be invested, which yields only a 3 percent return on the total pool of funds. Thus, if there are too many capital investments chasing too few funds, selecting investments based on nothing but their IRR may lead to suboptimal decisions.

Another issue is that the IRR calculation assumes that all cash flows thrown off by a project over the course of its life can be reinvested at the same rate of return. This is not always a valid assumption, since the earnings from a special investment that yields a uniquely high rate of return may not be investable at anywhere close to the same rate of return.

Despite its shortcomings, the IRR method is a scientifically valid way to determine the rate of return on a capital investment's full stream of cash flows. However, because it does not recognize the total amount of cash spun off by an investment, it is best used in conjunction with the net present value calculation in order to yield the most complete analysis of a capital investment.

THROUGHPUT-BASED CAPITAL BUDGETING

The traditional capital budgeting approach involves having the management team review a series of unrelated requests from throughout the company, each one asking for funding for various projects. Management decides whether to fund each request based on the discounted cash flows projected for each one. If there are not sufficient funds available for all requests having positive discounted cash flows, then those with the largest cash flows or highest percentage returns are usually accepted first, until the funds run out.

There are several problems with this type of capital budgeting. First and most important, there is no consideration of how each requested project fits into the entire *system* of production—instead, most requests involve the local optimization of specific work centers that may not contribute to the total throughput of the company. Second, there is no consideration of the constrained resource, so managers cannot tell which funding requests will result in an improvement to the efficiency of that operation. Third, managers tend to engage in a great deal of speculation regarding the budgeted cash flows resulting from their requests, resulting in inaccurate discounted cash flow projections. Since many requests involve unverifiable cash flow estimates, it is impossible to discern which projects are better than others.

A greater reliance on throughput accounting concepts eliminates most of these problems. First, the priority for funding should be placed squarely on any projects that can improve the capacity of the constrained resource, based on a comparison of the incremental additional throughput created to the incremental operating expenses and investment incurred.

Second, any investment requests not involving the constrained resource should be subject to an intensive critical review, likely resulting in their rejection. Since they do not impact the constrained resource, these investments cannot impact system throughput in any way, so their sole remaining justification must be the reduction of operating expenses or the mitigation of some type of risk.

The one exception to investing in nonconstraint resources is when there is so little excess capacity in a work center that it has difficulty recovering from downtime. This can be a major problem if the lack of capacity constantly causes the constrained resource to run out of work. In this case, a good investment alternative is to invest in a sufficient amount of additional capacity to ensure that the system can rapidly recover from a reasonable level of downtime. If a manager is applying for a capital investment based on this reasoning, he should attach to the proposal a chart showing the capacity level at which the targeted resource has been operating over the past few months, as well as the severity of work shortages at the constrained resource that are caused by that operation.

At what point should a company invest in more of the constrained resource? In many cases, the company has specifically designated a resource to be its constraint, because it is so expensive to add additional capacity, so this decision is not to be taken lightly. The decision process is to review the impact on the incremental change in throughput caused by the added investment, less any changes in operating expenses.

Because this type of investment represents a considerable *step cost* (where costs and/or the investment will jump considerably as a result of the decision), management must usually make its decision based on the perceived level of long-term throughput changes, rather than smaller expected short-term throughput increases.

The issues noted here are addressed in the summary-level capital budgeting form shown in Exhibit 9.7. This form splits capital budgeting requests into three categories: (1) constraint-related, (2) risk-related, (3) non–constraint-related. The risk-related category covers all capital purchases for which the company must meet a legal requirement, or for which there is a perception that the company is subject to an undue amount of risk if it does *not* invest in an asset. All remaining requests that do not clearly fall into the constraint-related or risk-related categories drop into a catchall category at the bottom of the form. The intent of this format is to clearly differentiate between different types of approval requests, with each one requiring different types of analysis and management approval.

The approval levels vary significantly in the throughput-based capital request form. Approvals for constraint-related investments include a process analyst (who verifies that the request will actually impact the constraint), as well as generally higher-dollar approval levels for lower-level managers—the intent is to make it easier to approve capital requests that will improve the constrained resource. Approvals for risk-related projects first require the joint approval of the corporate attorney and chief risk officer, with added approvals for large expenditures. Finally, the approvals for non–constraint-related purchases involve lower-dollar approval levels, so the approval process is intentionally made more difficult.

PROBLEMS WITH THE CAPITAL BUDGET APPROVAL PROCESS

A significant problem with the capital budget approval process is that the senior-level managers who are chiefly responsible for approving new capital expenditures are also responsible for generating an adequate return on investment from the company's existing capital base. This means that they will be less likely to approve the construction of any radical new systems that will render the older infrastructure obsolete. Consequently, new projects will probably only be approved if they involve the enhancement of existing systems, which will likely only involve modest improvements in productivity.

One way to resolve this problem is to set aside a large amount of cash to be handed out by a lower-level group of employees. This group should not be responsible for the existing infrastructure, and should preferably be younger and of an entrepreneurial mind-set. This group should be oriented toward the funding of project startups, with funds being allocated to prototype development, market trials, or expansions of a business case.

Another solution is to offer significant cash payouts if new ideas succeed in the marketplace. The prospect of large personal rewards may push managers to take greater risks than would normally be the case. Also, this tends to create a feedback loop where evidence of actual cash payouts breeds even more ideas, which generates more payouts, and so on.

Capital Request Form

Project name: _____

Name of project sponsor: _____

Submission date: _____ Project number: _____

☐ **Constraint-Related Project**

Initial expenditure: $ _____

Additional annual expenditure: $ _____

Impact on throughput: $ _____

Impact on operating expenses: $ _____

Impact on ROI: $ _____

(Attach calculations)

Approvals

All	_____ Process Analyst
$100,000	_____ Supervisor
$100,001 – $1,000,000	_____ President
$1,000,000+	_____ Board of Directors

☐ **Risk-Related Project**

Initial expenditure: $ _____

Additional annual expenditure: $ _____

Description of legal requirement fulfilled or risk issue mitigated (attach description as needed):

_____

_____

Approvals

< $50,000	_____ Corporate Attorney _____ Chief Risk Officer
$50,001 +	_____ President
$1,000,000+	_____ Board of Directors

☐ **Non-Constraint-Related Project**

Initial expenditure: $ _____

Additional annual expenditure: $ _____

☐ Improves sprint capacity?
Attach justification of sprint capacity increase

☐ Other request
Attach justification for other request type

Approvals

All	_____ Process Analyst
<$10,000	_____ Supervisor
$10,001 – $100,000	_____ President
$100,000+	_____ Board of Directors

EXHIBIT 9.7 The Throughput-Based Capital Request Form

Yet another approach is to fund an in-house venture capital firm. The company can give this group general strategic directions and then let it search for funding opportunities both inside and outside the company. By shifting investment authority away from the management team and onto a group of trained venture capitalists, it is likely that funding decisions will be different.

Finally, alter the capital budgeting guidelines so that riskier projects will be more easily approved at lower funding levels. This allows potentially high-return projects to at least receive initial funding to see if the concept works.

All of these variations on project funding are designed to keep a company from reinvesting in minor efficiency improvements to their existing infrastructures, instead allowing themselves an opportunity to create major improvements in their return on investment.

CASH FLOW MODELING ISSUES

The cash flow concepts used for most net present value or internal rate of return projects assume a simplified decision process where funding occurs once at the beginning of the project, after which a steady and predictable series of cash flows occurs over a multiyear period. In reality, there is a possibility for several additional decisions occurring during the investment period that can dramatically alter the value of a project:

- *Deferred start date.* There may be a sufficient level of uncertainty regarding a project that it makes sense to hold off on its initiation until additional research can be conducted. However, delaying the project may also result in a reduction in the level of market share attained, since competitors will have a better opportunity to position their products in the market first. Thus, additional variables in the cash flow scenario are a combination of a delay in cash outflow and reduced long-term revenues.
- *Early cancellation.* If the expenditure of funds occurs over a lengthy period of time or requires additional investments at discrete intervals, then management has the option to cancel the project early in order to minimize potential losses. If there appears to be a significant probability of early cancellation, then consider creating an additional cash flow model that includes this scenario.
- *Add more capital later in project.* If there is a possibility that a project may yield additional profits through additional investments at various points in the future, then an added scenario may include the amount of any additional investments and the cash flows to be gained from them. Conversely, more cash may be needed when the project being created is of the experimental variety, and there is a risk that construction and implementation problems will require an additional investment. If considered significant, these options should be included in the cash flow model.
- *Alter project cost structure.* It may be possible to pay less cash up front in exchange for higher variable costs over the remainder of the project, as would be the case when more staffing is used instead of automated equipment (or vice versa). Depending on the changes in the timing and amounts of cash flows resulting

from such decisions, it may be necessary to construct a separate cash flow forecast for each option.

The scenarios noted here bring up the prospect of having multiple possible variations on the cash flows from a prospective new project. Which one should be included in the formal cash flow analysis that is presented to management for approval? All of them. To do so, create a decision tree that outlines all cash flow options, with each option assigned a probability of occurrence. For each node on the decision tree, calculate its probability multiplied by its value outcome, and then sum all the nodes. This approach gives management valuable insight into the probability of different cash flow alternatives. The only problem with the decision tree model is that the calculation becomes cumbersome after more than a few cash flow options are added to it.

FUNDING DECISIONS FOR RESEARCH AND DEVELOPMENT PROJECTS

The traditional approach to R&D funding is to require all R&D proposals to pass a minimum return-on-investment hurdle rate. However, when there is limited funding available and too many investments passing the hurdle rate to all be funded, managers tend to pick the most likely projects to succeed. This selection process usually results in the least risky projects being funded, which are typically extensions of existing product lines or other variations on existing products that will not achieve breakthrough profitability. An alternative that is more likely to achieve a higher return on R&D investment is to apportion investable funds into multiple categories—a large percentage that is only to be used for highly risky projects with associated high returns, and a separate pool of funds specifically designated for lower risk projects with correspondingly lower levels of return. The exact proportions of funding allocated to each category will depend on management's capacity for risk, as well as the size and number of available projects in each category. This approach allows a company the opportunity to achieve a breakthrough product introduction that it would probably not have funded if a single hurdle rate had been used to evaluate new product proposals.

If this higher-risk approach to allocating funds is used, it is likely that a number of new product projects will be abandoned prior to their release into the market, on the grounds that they will not yield a sufficient return on investment or will not be technologically or commercially feasible. This is not a bad situation, since some projects are bound to fail if a sufficiently high level of project risk is acceptable to management. Conversely, if no projects fail, this is a clear sign that management is not investing in sufficiently risky investments. To measure the level of project failure, calculate R&D waste, which is the amount of unrealized product development spending (e.g., the total expenditure on canceled projects during the measurement period). Even better, divide the amount of R&D waste by the total R&D expenditure during the period to determine the proportion of expenses incurred on failed projects. Unfortunately, this measure can be easily manipulated by accelerating or withholding the declaration of project

termination. Nonetheless, it does give a fair indication of project risk when aggregated over the long term.

Though funding may be allocated into broad investment categories, management must still use a reliable method for determining which projects will receive funding and which will not. The standard approach is to apply a discount rate to all possible projects, and then to select those having the highest net present value (NPV). However, the NPV calculation does not include several key variables found in the *expected commercial value* (ECV) formula, making the ECV the preferred method. The ECV formula requires one to multiply a prospective project's net present value by the probability of its commercial success, minus the commercialization cost, and then multiply the result by the probability of technical success, minus the development cost. Thus, the intent of using ECV is to include all major success factors into the decision to accept or reject a new product proposal:

$$\begin{aligned}\text{ECV} = &(((\text{Project net present value} \times \text{Probability of commercial success}) \\ &- \text{Commercialization cost}) \times \text{Probability of technical success}) \\ &- \text{Product development cost}\end{aligned}$$

As an example of the use of ECV, the Moravia Corporation collects the following information about a new project for a battery-powered lawn trimmer, where there is some technical risk that a sufficiently powerful battery cannot be developed for the product:

Project net present value	$4,000,000
Probability of commercial success	90%
Commercialization cost	$ 750,000
Probability of technical success	65%
Product development cost	$1,750,000

Based on this information, Moravia computes the following ECV for the lawn trimmer project:

$$\begin{aligned}\text{ECV} = &(((\$4,000,000 \text{ Project net present value} \\ &\times 90\% \text{ Probability of commercial success}) \\ &- \$750,000 \text{ Commercialization cost}) \\ &\times 65\% \text{ Probability of technical success}) \\ &- \$1,750,000 \text{ Product development cost} \\ \text{ECV} = &\$102,500\end{aligned}$$

Even if some projects are dropped after being run through the preceding valuation analysis, this does not mean that they should be canceled for good. On the contrary, these projects may become commercially viable over time, depending on changes in price points, costs, market conditions, and technical viability. Consequently, the R&D manager should conduct a periodic review of previously shelved projects to see if any of the factors just noted have changed sufficiently to allow the company to reintroduce a project proposal for development.

CAPITAL INVESTMENT PROPOSAL FORM

When a CFO is called on to conduct an analysis of a potential capital investment, the largest task is collecting all necessary data about it. This can involve meeting with a number of employees who are working on the capital investment to determine the timing and cost of all up-front and continuing expenditures, as well as the timing and amount of all future cash inflows, not to mention the eventual salvage value of any equipment to be purchased. Once the CFO assembles this information, it may become apparent that there are a few items still missing, which will require another iteration of data gathering. In the end, the CFO may find that the data collection task has grossly exceeded the time needed to analyze the resulting information. If there are many capital proposals to review, the data collection phase of the analysis can easily turn into a full-time job.

A good way to entirely avoid the data collection phase of the investment proposal process is to make the department managers do it. The CFO can create a standard form, such as the one shown in Exhibit 9.8, that itemizes the exact information needed. This form can be created in a template format, perhaps in an electronic spreadsheet, and distributed by e-mail to all managers. They then fill out the necessary fields (all user-entered fields in the example are in italics), and e-mail it back to the CFO for review. This eliminates the data collection chore, while also putting the data into the exact format needed to yield basic calculations for the CFO, such as the payback period, net present value, and internal rate of return, thereby keeping not only the data collection work, but much of the related analysis, to a minimum.

The form shown in Exhibit 9.8 is divided into several key pieces. The first is the identification section, in which we insert the name of the project sponsor, the date on which the proposal was submitted, and the description of the project. For a company that deals with a multitude of capital projects, it may also be useful to include a specific identifying code for each one. The next section is the most important one—it lists all cash inflows and outflows, in summary form, for each year. The sample form has room for just five years of cash flows, but this can be increased for companies with longer-term investments. Cash outflows are listed as negative numbers, and inflows as positive ones. The annual depreciation figure goes into the box in the ''Tax Effect of Annual Depreciation'' column. The column of tax deductions listed directly below the depreciation box contains automatic calculations that determine the tax deduction, based on the tax rate noted in the far right column. All of the cash flows for each year are then summarized in the far right column. A series of calculations are listed directly below this ''Total'' column that itemize the payback period, net present value, and internal rate of return, mostly based on the hurdle rate noted just above them. In the example, the rate of return on the itemized cash flows is 9.4 percent, which is just below the corporate hurdle rate of 10 percent. Since the discount rate is higher than the actual rate of return, the net present value is negative. Also, this can be considered a risky project, since the number of years needed to pay back the initial investment is quite lengthy. The next section of the form is for the type of project. The purpose of this section is to identify those investments that *must* be completed, irrespective of the rate of return; these are usually due to legal or safety issues. Also, if a project is for a new product,

EXHIBIT 9.8 Capital Investment Proposal Form

Name of Project Sponsor: *H. Henderson* **Submission Date:** *09/09/10*

Investment Description:
Additional press for newsprint.

Cash Flows:

Year	Equipment	Working Capital	Maintenance	Tax Effect of Annual Depreciation	Salvage Value	Revenue	Taxes	Total
0	*−5,000,000*	*−400,000*		*800,000*				−5,400,000
1			*−100,000*	320,000		*1,650,000*	*−700,000*	1,170,000
2			*−100,000*	320,000		*1,650,000*	*−700,000*	1,170,000
3			*−100,000*	320,000		*1,650,000*	*−700,000*	1,170,000
4			*−100,000*	320,000		*1,650,000*	*−700,000*	1,170,000
5		*400,000*	*−100,000*	320,000	*1,000,000*	*1,650,000*	*−700,000*	2,570,000
Totals	−5,000,000	0	−500,000	2,400,000	1,000,000	8,250,000		1,850,000

Tax rate:	**40%**
Hurdle rate:	**10%**
Payback period:	**4.28**
Net present value:	**(86,809)**
Internal rate of return:	**9.4%**

Type of Project (check one):

Legal requirement	_____	
New product-related	_____	
Old product extension	Yes	_____
Repair/replacement	_____	
Safety issue	_____	

Approvals:

Amount	Approver	Signature
<$5,000	Supervisor	_____
$5–19,999	General Mgr	_____
$20–49,999	President	_____
$50,000+	Board	_____

management may consider it to be especially risky, and so will require a higher hurdle rate. This section identifies those projects. The last section is for approvals by managers. It lists the level of manager who can sign off on various investment dollar amounts, and ensures that the correct number of managers have reviewed each investment. This format is comprehensive enough to give a CFO sufficient information to conduct a rapid analysis of most projects.

Though the capital investment proposal form is a good way to have project sponsors assemble information for the CFO, it does not guarantee that the finished product will be free of errors—far from it. Department managers may not have a clear understanding of what information goes into each field of the form, so they may enter incorrect information which the CFO will then use to arrive at an incorrect analysis. To keep this from happening, there are several steps to take. One is to create a short procedure to accompany all forms when they are given to managers, which clearly describes what information goes into each field in the form. Another option is to meet with all new managers to go over the form, so that they have a clear understanding of how to fill it out. Yet another option, if the form is distributed in Excel, is to include instructions in a "Comments" field that can be attached to each cell in the spreadsheet; by positioning the cursor on the field, the comment appears on the screen, describing how to fill in each field. Finally, and of greatest importance, the CFO should meet with the sponsor of any large project to carefully review all aspects of the proposal form. For a large project, it is critical to verify all information, since even a small mistake can yield the wrong analysis results, possibly leading to significant and unexpected financial losses.

A final issue in regard to the use of capital investment proposal forms is that a bureaucratically minded person can create a behemoth of a form. This happens when the accounting department wants to see all possible underlying detail to justify every cash flow in the analysis. Though the accounting staff thinks it is just being careful, the managers who must fill out the novella-sized forms will certainly think otherwise. For them, creating a proposal form will become a major chore that is to be delayed or avoided at all costs. To keep this situation from arising, the CFO must remember that most capital requests are very small, usually hovering near the low-end capitalization limit, and so do not require a vast analysis. Only a few very large capital investments are worthy of in-depth review, and so should be treated as the exception, not the rule. Based on this logic, the investment proposal form should be a small one, which the CFO can investigate in greater detail if the size or uncertainty of the investment appears to warrant it.

The capital investment proposal form is a relatively easy one to create, and, with an accompanying procedure, is one of the best ways to improve the flow of information to the CFO for the analysis of capital investments. For an alternative to the traditional capital investment proposal form, see the "Throughput-Based Capital Request Form" in Exhibit 9.7.

POST-COMPLETION PROJECT ANALYSIS

The greatest failing in most capital review systems is not in the initial analysis phase, but in the post-completion phase, because there is not one. A CFO usually puts a great

deal of effort into compiling a capital investment proposal form, educating managers about how to use it, and then setting up control points around the system to ensure that all capital requests make use of the approval system. However, if there is no methodology for verifying that managers enter accurate information into the approval forms, which is done by comparing actual results to them, then managers will eventually figure out that they can alter the numbers in the approval forms in order to beat the corporate hurdle rates, even if this information is incorrect. However, if managers know that their original estimates will be carefully reviewed and critiqued for some time into the future, then they will be much more careful in completing their initial capital requests. Thus, analysis at the back end of a capital project will lead to greater accuracy at the front end.

Analysis of actual expenditures can begin before a capital investment is fully paid for or installed. A CFO can subtotal the payments made by the end of each month and compare them to the total projected by the project manager. A total that significantly exceeds the approved expenditure would then be grounds for an immediate review by top management. This approach works best for the largest capital expenditures, where reviewing payment data in detail is worth the extra effort by the accounting staff if it can prevent large overpayments. It is also worthwhile when capital expenditures cover long periods of time, so that a series of monthly reviews can be made. However, it is not a worthwhile approach if the expenditure in question is for a single item that is made with one payment; however, this type of purchase can still be reviewed by comparing the company's purchase order total to the amount noted on the capital investment proposal form.

Once a project is completed, there may be cash inflows that result from it. If so, a quarterly comparison of actual to projected cash inflows is the most frequent comparison to be made, with an annual review being sufficient in many cases. Such a review keeps management appraised of the performance of all capital projects, and lets the project sponsors know that their estimates will be the subject of considerable scrutiny for as far into the future as they had originally projected. For those companies that survive based on the efficiency of capital usage, it may even be reasonable to tie manager pay reviews to the accuracy of their capital investment request forms.

An example of a post-completion project analysis is shown in Exhibit 9.9. In this example, the top of the report compares actual to budgeted cash outflows, while the middle compares all actual cash outflows to the budget. Note that the cash outflows section is complete, since these were all incurred at the beginning of the project, whereas the inflows section is not yet complete, because the project has only completed the third year of a five-year plan. To cover the remaining two years of activity, there is a column for estimated cash inflows, which projects them for the remaining years of the investment, using the last year in which there are actual data available. This projected information can be used to determine the net present value. We compare the actual and projected net present values at the bottom of the report, so that management can see if there are any problems worthy of correction. In this case, the initial costs of the project, both in terms of capital items and working capital, were so far over budget that the actual net present value is solidly in the red. Management should take a hard look at reducing the working capital, since this is the single largest cash drain in excess of the

EXHIBIT 9.9 Comparison of Actual to Projected Capital Investment Cash Flows

Description	Actual	Projected Actual	Budget	Actual Present Value*	Budget Present Value*
Cash Outflows					
Capital Items	$1,250,000	—	$1,100,000	$1,250,000	$1,100,000
Working Capital	750,000	—	500,000	750,000	500,000
Total Outflows	$2,000,000	—	$1,600,000	$2,000,000	$1,600,000
Cash Inflows					
Year 1	$ 250,000		$ 250,000	$ 229,350	$ 229,350
Year 2	375,000		400,000	315,638	336,680
Year 3	450,000		500,000	347,490	386,100
Year 4		$450,000	500,000	318,780	354,200
Year 5		450,000	500,000	292,455	324,950
Total Inflows	$1,075,000	$900,000	$2,150,000	$1,503,713	$1,631,280
Net Present Value	—	—	—	−$496,287	+$31,280

*Uses discount rate of 9%.

budget, while also seeing if cash inflow can be increased to match the budgeted annual amounts for the last two years of the investment.

SUMMARY

In this chapter, we have gone over some of the most fundamental analyses that a CFO will see—the use of the payback period, net present value, internal rate of return, and throughput concepts to determine whether a company should invest in a capital project (as well as special considerations for R&D projects). Just as important to this analysis, though unfortunately overlooked by all too many companies, is the post-implementation review of partially or fully completed capital investments, since this information tells a company which investments have succeeded and which have failed. Only by mastering all the techniques noted in this chapter can a CFO become an efficient analyzer of capital investment issues.

CHAPTER TEN

10 Other Financial Analysis Topics

THE COST OF CAPITAL and capital budgeting are extensive topics, and so were accorded separate chapters preceding this one. However, the CFO has need of other analysis tools that can be explained more briefly and which are contained within this chapter. The first is risk analysis, which examines the variability of data the CFO uses to make decisions. Another is capacity utilization, which is of great importance when determining the ability of an organization to change the amount of revenue it produces and also monitors its bottleneck operations. Another analysis tool is the breakeven chart, which is examined in increasing levels of complexity in order to show how it can be modified to incorporate a variety of variables. Finally, we cover the use of business cycle forecasting to assist with the budgeting process. The CFO will require all of these tools in the conduct of his or her business.

RISK ANALYSIS

A CFO is sometimes called on to issue opinions based on *projected* information. This happens whenever a business forecast or sales projection is issued. In particular, it is a primary element of any cash flow projection for a capital expenditure. If there is even a small difference between actual and projected cash flows from a project, it might result in a negative net present value, which means that an implemented project should not have been initially approved. Avoiding this problem requires a good knowledge of the risk of any projection, which is essentially the chance that the actual value will vary significantly from the expected one.

There are several rough measures of data dispersion. They tell a CFO how spread out the projected outcomes are from a central average point. By reviewing the several measurements, you can obtain a good feel for the extent to which projections cluster together. If they are tightly clustered, then the risk of not meeting the

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by Steven M. Bragg

estimated outcome is low, whereas a large degree of dispersion reflects considerable dissension over the projected outcome; a greater degree of risk is associated with this situation.

The first task when determining data dispersion is to determine the center, or midpoint, of the data, so that we can see how far the group of estimates vary from this point. There are several ways to arrive at this point. They are:

- *Arithmetic mean.* This is the summary of all projections, divided by the total number of projections. It rarely results in a specific point that matches any of the underlying projections, since it is not based on any single projection—just the average of all points. It simply balances out the largest and smallest projections. It tends to be inaccurate if the underlying data include one or two projections that are significantly different from the other projections, resulting in an average that is skewed in the direction of the significantly different projections.
- *Median.* This is the point at which half of the projections are below, and half are above it. On the assumption that there is an even number of projections being used, the median is the average of the two middle values. By using this method, you can avoid the effect of any outlying projections that are radically different from the main group.
- *Mode.* This is the most commonly observed value in a set of underlying projections. As such, it is not affected by any extreme projections. In a sense, this represents the most popular projection.

When selecting which of these measures to use for the midpoint of the data, we must remember why we are using the midpoint. With the determination of the level of risk being the goal, we want to determine how far apart the projections are from a midpoint. Since we will be including the extreme values in our next set of measurements, we do not have to include them in the determination of the center of the projections. Accordingly, we will use the median, which ignores the size of outlying values, as the measurement of choice for our determination of the middle of the set of projected outcomes.

The next step is to determine how far apart the projections are from the median. Given the small number of projections, this is easy enough. Just pick the highest and lowest values from the list of outcomes. Then determine the percentage by which the highest and lowest values vary from the median. To do so, we divide the difference between the lowest and median values by the median, and calculate the same variance between the median and the highest value. This is a good way to determine the range of possible outcomes. For example, the following cash-flow projections were collected as part of risk-analysis determination:

- The set of projections for estimated cash flow is:
  $250, $400, $675, $725, $850, and $875
- The median is the average of the third and fourth values, which is:
  $700

- The percentage difference between the median and highest projection is:
  ($875 − $700)/$700 = 25 percent
- The percentage difference between the median and lowest projection is:
  ($700 − $250)/$700 = 64 percent

If the difference between the median and the highest possible estimate is only 25 percent, but the difference between the median and the lowest possible estimate is 64 percent, then we see that there is a modest chance that the actual result will be higher than the estimate but that there is a significant risk that it might turn out to be lower than expected.

Another way to determine dispersion is to calculate the *standard deviation* of the data. This method measures the average scatter of data about the mean. In other words, it arrives at a number that is the amount by which the average data point varies from the midpoint, either above or below it. We can divide it by the mean of the data to arrive at a percentage that is called the *coefficient of variation*. This is an excellent way to convert the standard deviation, which is expressed in units, into a percentage. This is a much better way of expressing the range of deviation within a group of projections, since one cannot always tell if a standard deviation of $23 is good or bad, but when converted into a percentage of deviation of 3 percent, we can see that the same number indicates a very tight clustering of data about the center point of all data. In Exhibit 10.1, we use the data just noted to determine the standard deviation, the mean, and the coefficient of variation.

Thus, the calculations in Exhibit 10.1 reveal that the set of projections used as our underlying data vary significantly from the midpoint of the group, especially in a downward direction, which would make a CFO think that there is a high degree of risk that the expected outcome will not be achieved.

Sometimes, the management team to whom risk information is reported will not be awed by a reported coefficient of variation of a whopping 80 percent, nor by a standard

EXHIBIT 10.1 Calculating the Standard Deviation and Coefficient of Variation

1. The standard deviation formula in Excel, using data set, is as follows:

= STDEV(250,400,675,725,850,875)

= 252

2. The calculation of the mean of all data is:

= Sum of All Data Items/Number of Data Items

= (250 + 400 + 675 + 725 + 850 + 875)/6\cr

= 629

3. The calculation of the coefficient of variation is:

= Standard Deviation/Mean

= 252/629\cr

= 40%

EXHIBIT 10.2 Data Dispersion, Measured in Percentages

Projection	Percentage Variance from the Median
$250	−64%
$400	−43%
$675	−4%
$700 (median)	**0%**
$725	4%
$850	21%
$875	25%

deviation of 800 units. They do not know what these measures mean, and they do not have time to find out. For them, a graphical representation of data dispersion might be a better approach. They can see the spread of estimates on a graph, then decide for themselves whether there appears to be a problem with risk.

When constructing a graph that shows the dispersion of data, we can lay out the data set in terms of the percentage difference between each item and the midpoint. In Exhibit 10.2, we have taken the projection information used in Exhibit 10.1 and converted it into percentages from the median.

When translated into a graph, Exhibit 10.2 gives us a wide percentage distribution of data on either side of the *x*-axis, which gives a good indication of the true distribution of data about the mean. In Exhibit 10.3, we have restated the data in Exhibit 10.2 into the top graph.

Note that there are two additional graphs in Exhibit 10.3. The middle graph assumes that we have a number of projections clustered under each of the variance points. In the example, we have arbitrarily expanded the number of projections to 26, with 8 clustered at the median point, 6 each at the −4 percent and +4 percent variance points, and lesser amounts at the outlying variance points. This is close to a classic ''bell curve'' distribution, where the bulk of estimates are clustered near the middle, and a rapidly declining number are located at the periphery. This is an excellent way to present information, but for the types of projections that a CFO works with, there will rarely be a sufficient number of projections to present this type of graph. If there are, a variation that might arise is the final graph at the bottom of the exhibit, which shows data that are skewed toward the right-hand side of the chart. This indicates a preponderance of estimates that lean, or ''skew,'' toward the higher end of the range of estimates. A reverse graph, which had ''negative skew,'' would present a decided lean toward the left side of the graph. Of the graphs presented in Exhibit 10.3, only the first one, the ''Percent Distribution from Median,'' is likely to see consistent use because there are so few data points available for a CFO to work with in most situations. Nonetheless, any of these graphs should be used when making presentations to management about the riskiness of projections, since they are so easy to understand.

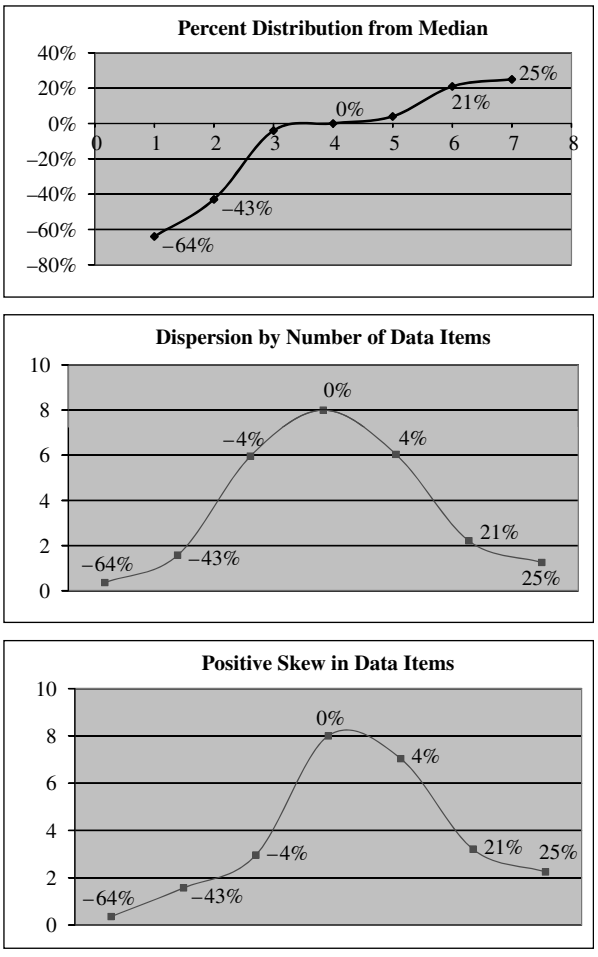

EXHIBIT 10.3 Graphical Illustration of Data Dispersion

CAPACITY UTILIZATION

Capacity covers either human or machine resources. If those resources are not used to a sufficient degree, there are immediate grounds for eliminating them, either by a layoff (in the case of human capacity) or by selling equipment (in the case of machines). In the first case, a layoff usually has a short-term loss associated with it, which covers severance costs, followed by an upturn in profits, since there is no longer a long-term obligation to pay salaries. In the second case, the sale of a machine does not have much of an impact on profits, unless there is a gain or loss on sale of the asset, but it will result in an improvement in cash flow as sale proceeds come in; these funds can be used for a variety of purposes to increase corporate value, such as reinvestment in new machines, a loan payoff, a buyback of equity, and so on. Consequently, a CFO who keeps a close eye on capacity levels throughout a company, and who makes recommendations

to keep capacity utilization close to current capacity levels, will have a significant impact on both profits and cash flows.

When making such analyses, the main issue to be aware of is that a CFO tends to be conservative—he or she wants to maximize the use of current capacity and get rid of everything not being used. This might not be a good thing when activity levels are projected to increase markedly in the near term. If management had followed a CFO's recommendation to eliminate excess capacity just before a large increase in production volumes, it would require some exceptional scrambling, possibly at high cost, to bring the newly necessary capacity back in-house. Consequently, a CFO must work with the sales staff to determine future sales (and therefore production) trends before recommending any cuts in capacity.

Capacity utilization also reveals the specific spots in a production process where work is being held up. These bottleneck operations prevent a production line from attaining its true potential amount of revenue production. A CFO can use information about bottlenecks in two ways. One is to recommend improvements to bottleneck operations in order to increase the potential amount of revenue generation. The other is to point out that any capital improvements to other segments of a production operation are essentially a waste of money (from the perspective of increasing the flow of production), since all production is still going to create a logjam in front of the bottleneck operation.

Another useful way for a CFO to use capacity-utilization information is in the determination of pricing levels. For example, if a company has a large amount of surplus excess capacity and does not intend to sell it off in the near term, it makes sense (and cents) to offer pricing deals on incremental sales that only result in small margins. This is because there is no other use for the equipment or production personnel. If low-margin jobs are not produced, the only alternative is no jobs at all, for which there is no margin at all. However, if a CFO knows that a production facility is running at maximum capacity, it is time to be choosy on incremental sales, so that only those sales involving large margins are accepted. It might also be possible to stop taking orders for low-margin products in the future, thereby flushing low-margin products out of the current production mix, in favor of newer, higher-margin sales. Though a highly profitable approach, this can also irritate customers who are faced with "take it or leave it" answers by a company that refuses new orders unless higher prices are accepted by the customer. Consequently, incremental pricing for new sales is closely tied not only to how much production capacity a company has left, but also to its long-term strategy for how it wants to treat its customers.

A final area in which capacity analysis can be used to alter profit levels is in mergers and acquisitions. If an acquisition team is looking at buying another company, but can only justify it if there are significant synergies, then a hard look at the target company's capacity utilization might provide the needed profit increase. For example, if the target organization has a large amount of excess capacity, the acquiring company can assume that a large part of the excess equipment or production lines can be sold off, thereby garnering additional cash flow. Another approach is to buy a company in order to make immediate use of its excess capacity. This approach has the added benefit of allowing a company to closely review the product margins on sales by both companies, eliminate

those customers yielding meager profit margins, and keep the remaining high-margin accounts from both organizations, along with a repositioning of the needed capacity to match the requirements of these most desirable customers. Yet another reason is that building the needed capacity from scratch might be more expensive than acquiring a company that already has not only the facilities but also the expertise to run them. For all of these reasons, capacity-utilization analysis should be a key part of any merger or acquisition strategy.

A company has a variety of activities that might be important enough to track their capacity utilization. The area most commonly measured is machine utilization, since management teams are always interested in keeping expensive machinery running for as long as possible so that the invested cost is not wasted. Thus, capacity tracking for *expensive assets* is certainly a common activity. However, another factor that many organizations miss is the capacity-utilization measurement for any *bottleneck operation*. This has nothing to do with a costly asset, but rather with determining whether or not a key operation in a process is interfering with the successful processing of a transaction. For example, if a number of production lines feed their products to a single person who must box and ship them, and this person cannot keep up with the volume of production arriving at her workstation, then she is a bottleneck operation that is interfering with the timely completion of the production schedule. Because she is a bottleneck, her capacity utilization should be tracked most carefully. This worker is not an expensive machine and might in fact be paid very little, but she is potentially holding up the realization of a great deal of revenue that cannot be shipped to customers. Consequently, using a capacity-utilization measure makes a great deal of sense in this situation.

To amplify on the concept of capacity planning for bottleneck operations, it is not sufficient to track the utilization of a single bottleneck operation, because the bottleneck will move to different steps in the production process as improvements are made to the system. For example, the key principle of the just-in-time concept is that management works to identify bottleneck operations and fix them. As a result, each specific bottleneck will be eliminated, but now the second most-constrictive operation comes to the fore for review and improvement, which in turn will be followed by a third operation, and so on. Consequently, it is better to identify *every* work center and track the utilization of them all. By using this more comprehensive approach, management can spot upcoming bottleneck problems and solve them before they become serious problems.

In the case of machinery, the tracking of utilization for virtually all of them is also useful, not just because they are also potential bottleneck operations, but because of the reverse problem—a machine that is *not* being used is a waste of invested capital and should be sold off if possible. A detailed capacity-utilization report will note those machines that are not being used, which tells management what can potentially be eliminated. This information is especially useful when machines are clustered on the report by type, so that a subtotal of capacity utilization is noted for each group of machines. If the machines within each cluster can be used interchangeably to complete similar work, management can then determine the total amount of work required of each cluster, and add or delete machines to meet that demand, which results in a very efficient use of capital. Such a report is described later in Exhibit 10.4.

EXHIBIT 10.4 Capacity-Utilization Report

						Month of		
Machine ID	**Machine Description**	**Run Hrs**	**Run Hrs**	**5/9–5/15 Run Hrs**	**5/2–5/8 Run Hrs**	**Apr. Run Hrs**	**Mar. Run Hrs**	**Feb. Run Hrs**
B1100/BM04	Blow Mold	150	142	139	132	112	122	104
B2000/BM03	Blow Mold	149	135	137	152	114	154	119
		89%	**82%**	**82%**	**85%**	**67%**	**82%**	**66%**
01-25	25 Ton	123	125	126	132	138	125	111
02-90/TO11	90 Ton	150	158	152	137	117	132	144
03-90/TO10	90 Ton	129	168	164	129	126	111	120
04-90/TO09	90 Ton	75	50	94	138	142	167	147
16-55/AG01	55 Ton	132	168	163	59	125	109	102
		73%	80%	83%	71%	61%	62%	61%
05-150/TO08	150 Ton	141	150	147	162	133	139	133
06-150/TO07	150 Ton	119	130	137	152	122	124	127
07-198/TO06	198 Ton	147	135	133	77	114	132	54
08-200/TO05	200 Ton	110	120	124	141	117	101	113
17-190/TA05	190 Ton	138	141	127	116	97	106	91
		78%	80%	80%	77%	69%	72%	62%
09-300/TO04	300 Ton	168	168	168	133	148	125	148
10-300/TO03	300 Ton	0	50	79	143	135	142	129
11-330/TO02	330 Ton	148	149	129	136	93	125	100
20-390/TA04	390 Ton	110	127	121	158	128	136	154
21-375/C106	375 Ton	92	100	102	84	78	77	102
26-400/TO01	400 Ton	47	85	124	116	101	78	120
		56%	67%	72%	76%	68%	68%	75%
12-500/CI05	500 Ton	91	168	166	137	113	62	50
14-500/CI04	500 Ton	74	85	100	96	107	142	96
18-450/VN02	450 Ton	168	162	163	164	103	111	119
24-500/VN01	500 Ton	125	0	167	163	161	96	106
25-500/TA03	500 Ton	132	139	145	162	146	128	89
		70%	66%	88%	86%	75%	64%	55%
13-700/CI03	700 Ton	168	151	146	142	106	78	60
15-700/VN03	700 Ton	0	153	107	152	133	118	118
19-720/TA02	720 Ton	102	109	115	161	115	58	113
22-700/CI01	700 Ton	111	59	74	154	74	76	144
23-950/TA01	950 Ton	104	168	126	159	110	91	112
		58%	76%	68%	91%	64%	50%	65%
		66%	**74%**	**78%**	**80%**	**71%**	**66%**	**66%**
		68%	**74%**	**78%**	**81%**	**70%**	**67%**	**66%**

A company frequently thinks of its production capacity only in terms of the current number of shifts being operated and tracks its capacity utilization accordingly. For example, a production center that operates for one eight-hour shift, and uses all machinery during that time, thinks that it is operating at 100 percent capacity utilization. In fact, it is only using one-third of the available hours in a day, which leaves lots of room for additional production. Accordingly, when developing a utilization measurement, one should always use the maximum amount of theoretical capacity as the baseline, rather than the amount of time during the day that is currently being used. For a single day, this means 24 hours, and for a week, it is 168 hours. On a monthly basis, the total number of hours will vary, since the number of days in a month can vary from 28 to 31. To get around this problem, it is easier to track capacity on a weekly basis, and use either four or five full weeks for individual months, depending on where the final month-end dates fall, so that all months of the year (except the last) on the capacity report show full-week results for either four or five weeks.

Some companies will reduce the amount of available capacity due to holiday shutdowns, such as Thanksgiving or Christmas. Though these are legal holidays, production capacity is still available during these periods and can be used if a company can find any staff willing to work on those days. Consequently, though tradition says that these hours are not available, they can be if a company is willing to force staff to work then, and so they should still be included in the baseline capacity for all utilization measurements.

When the decision is made to create a capacity-utilization analysis, what format should be used to present it? Refer to the capacity report shown in Exhibit 10.4, which lists the utilization hours of 28 plastic injection and blow-molding machines. The identification number of each machine is listed down the left column, with the tonnage of each machine noted in the next column. The next cluster of four columns shows the weekly utilization, in hours, for each machine. The final three columns show the average weekly utilization by machine for the preceding three months. In addition, there are subtotals for all blow-molding machines and for five clusters of injection molding machines, grouped by tonnage size.

This report format allows management to look across the report from left to right and determine any trends in capacity utilization, while also being able to look down the page and determine usage by clusters of machines. This second factor is of extreme importance in the molding business, since each machine is very expensive and must be eliminated if it is not being used to a sufficient degree. For example, look at the tonnage range of 300 to 400 tons, located midway through the report. A cluster of six machines is consistently showing between 68 percent and 76 percent of usage. Is it possible to eliminate one machine, thereby spreading the work over fewer machines and raising the overall usage percentage for all of the machines? To determine the answer using data for the highest utilization reporting period, which is for the first week of May, at 76 percent, add up all the reported hours of usage for that cluster of machines, which is 770, and divide the total number of hours that the machine cluster has available, assuming that one machine has been removed. The total number of hours available for production will be 168 (which is 7 days multiplied by 24 hours a day) times five machines, which is 840. The result is a utilization of 92 percent for the maximum

amount of work that has appeared in the last quarter of a year. Consequently, the answer is that it is theoretically possible to remove one machine from the 300- to 400-ton range of machines and still be able to complete all work.

However, when using a capacity report to arrive at such conclusions, there are several additional factors to consider. One is the reliability of the machines. If they have a history of failures, then a standard number of hours per operating period for repair work must be factored into the utilization formula, which will reduce the theoretical capacity of the machine. Another problem is that eliminating a machine is usually done in order to realize a cash inflow from sale of the machine—but what if the machines most likely to be sold will only fetch a minor amount in the marketplace? If so, it might make more sense to retain equipment, even if unused, so that it can take on additional work in the event of an increase in sales volume. Yet another issue is that there might be some difficulty in obtaining a sufficient number of staff to maintain or run a machine during all theoretical operating hours. For example, it is common for those organizations with a reduced number of maintenance personnel to cluster those staff on the day shift for maximum efficiency, which means that any machine failure during other hours will result in a shut-down machine until the maintenance staff arrives the next day. Finally, the preceding example shows management taking actual capacity utilization of its machinery to 92 percent. Is this wise, if management has essentially removed all remaining available capacity by selling off the excess machine? What if an existing customer suddenly increases an order and finds that the company cannot accommodate the work because all machines are booked? Not only will lost revenues result, but maybe even a lost customer.

One way in which a capacity analysis can be skewed is if there is either a large number of small jobs running through a process, each of which requires a small amount of downtime to switch over to the new job, or else a small number of jobs that require a very lengthy changeover process. In either case, the amount of reported capacity will never reach 100 percent, for the required setup time will take up the amount of capacity that is supposedly available. One action that management can take to alleviate this problem is to work on reducing the changeover time needed to switch to a new job. This typically involves videotaping the changeover process, then reviewing the tape with the changeover team to identify and implement process alterations that will result in reduced setup times.

A revenue-related problem that arises when setup times eat up a large portion of total capacity is that the sales department might promise customers that work will begin very soon on their orders, because the capacity-utilization report appears to reveal that there is lots of excess capacity. When it turns out that excessive changeover times do not leave any time for additional customer orders, it is possible that customers will take their business elsewhere. To counteract this problem, it is necessary to determine the amount of *practical capacity*, which is the total capacity, less the average amount of changeover time. If the setup reduction effort noted in the preceding paragraph is implemented, the practical capacity number will increase, since the time available for production will increase as changeover times go down. Consequently, a review of the practical capacity should be made fairly often to ensure that the correct figure is used.

A problem with using practical capacity as the standard measure of how much work can still be loaded into the production system is that it is based on an average of

actual capacity information over several weeks or months. However, if there is one or more jobs scheduled for a changeover that requires inordinate amounts of time to complete, the reported practical capacity measure will not reflect reality. Similarly, if the actual changeover times are quite small, the true capacity will be higher than the reported practical capacity. Because practical capacity is a historical average, the actual capacity will be somewhat higher or lower than this average almost all of the time. Though a company with lots of excess capacity might call this hair-splitting, a company that is running at maximum production levels might find itself blindsided by a lack of available time, or some amount of unplanned downtime. In either case, there is a cost to having inaccurate capacity information. Those companies with well-maintained manufacturing resource planning (MRP II) software can avoid this problem by accurately scheduling jobs and changeover times, and updating the data as soon as changes are made.

BREAKEVEN ANALYSIS

There is usually a very narrow band of pricing and costs within which a company operates in order to earn a profit. If it does not charge a minimum price to cover its fixed and variable costs, it will quickly burn through its cash reserves and go out of business. In a competitive environment, prices drop to the point where they only barely cover costs, and profits are thin or nonexistent. At this point, only those companies with a good understanding of their own breakeven points and those of their competitors are likely to make the correct pricing and cost decisions to remain competitive. This section shows how breakeven (also known as the cost-volume-profit relationship) is calculated, as well as a variety of more complex variations on the basic formula.

The breakeven formula is an exceedingly simple one. To determine a breakeven point, add up all of the fixed costs for the company or product being analyzed and divide them by the associated gross margin percentage. This results in the sales level at which a company will neither lose nor make money—its breakeven point. The formula is:

$$\text{Total fixed costs} / \text{Gross margin percentage} = \text{Breakeven sales level}$$

For those who prefer a graphical layout to a mathematical formula, a breakeven chart can be informative. In the sample chart shown in Exhibit 10.5, we show a horizontal line across the chart that represents the fixed costs that must be covered by gross margins, irrespective of the sales level. The fixed-cost level will fluctuate over time and in conjunction with extreme changes in sales volume, but we will assume no changes for the purposes of this simplified analysis. Also, there is an upward-sloping line that begins at the left end of the fixed-cost line and extends to the right across the chart. This is the percentage of variable costs, such as direct labor and materials, that are needed to create the product. The last major component of the chart is the sales line, which is based in the lower-left corner of the chart and extends to the upper-right corner. The amount of the sales volume in dollars is noted on the vertical axis, while the amount of production capacity used to create the sales volume is noted across the

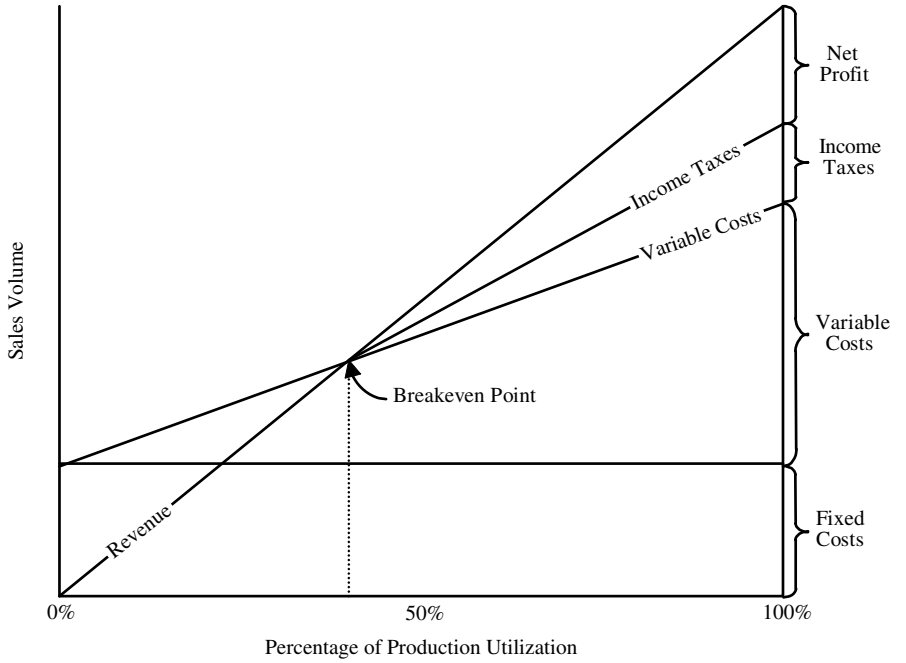

EXHIBIT 10.5 Simplified Breakeven Chart

horizontal axis. Finally, there is a line that extends from the marked breakeven point to the right and that is always between the sales line and the variable cost line. This represents income tax costs. These are the main components of the breakeven chart.

It is also useful to look between the lines on the graph and understand what the volumes represent. For example, as noted in Exhibit 10.5, the area beneath the fixed costs line is the total fixed cost to be covered by product margins. The area between the fixed costs line and the variable costs line is the total variable costs at different volume levels. The area beneath the income line and above the variable costs line is the income tax expense at various sales levels. Finally, the area beneath the revenue line and above the income tax line is the amount of net profit to be expected at various sales levels.

Although the previous breakeven chart appears quite simplistic, there are additional variables that can make a real-world breakeven analysis a much more complex endeavor to understand. One of these variables is fixed cost. A *fixed* cost is a misnomer, for any cost can vary over time or outside of a specified set of operating conditions. For example, the overhead costs associated with a team of engineers can be considered a fixed cost if a product line requires continuing improvements and enhancements over time. However, what if management decides to gradually eliminate a product line and milk it for cash flow, rather than keep the features and styling up-to-date? If so, the engineers are no longer needed, and the associated fixed cost goes down. Any situation where management is essentially abandoning a product line in the long term will probably result in a decline in overhead costs.

A much more common alteration in fixed costs is when additional personnel or equipment is needed in order to support an increased level of sales activity. As noted in

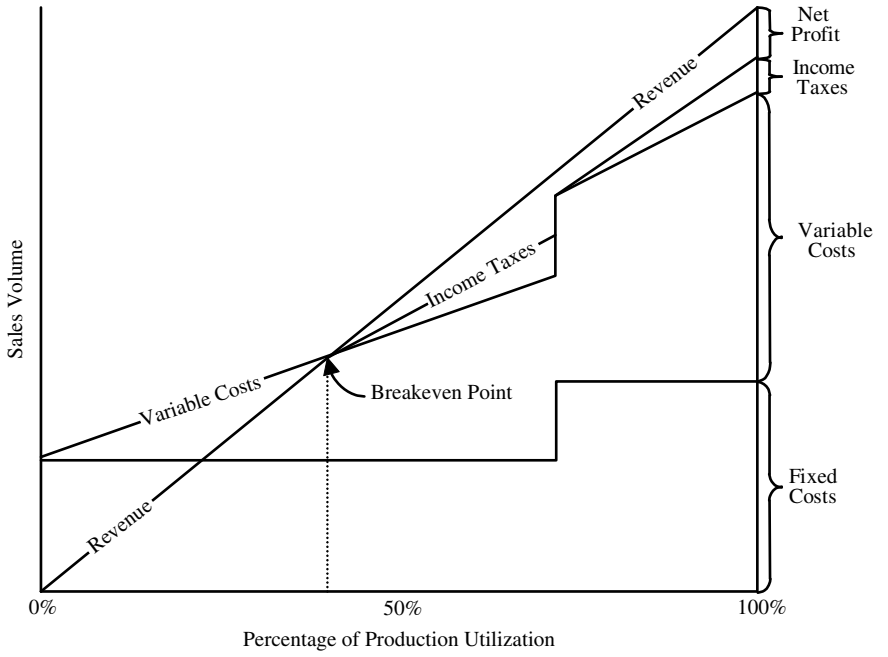

EXHIBIT 10.6 Breakeven Chart, Including Impact of Step Costing

the breakeven chart in Exhibit 10.6, the fixed cost will step up to a higher level (an occurrence known as *step costing*) when a certain capacity level is reached. An example of this situation is when a company has maximized the use of a single shift and must add supervision and other overhead costs such as electricity and natural gas expenses in order to run an additional shift. Another example is when a new plant must be brought on line or an additional machine acquired. Whenever this happens, management must take a close look at the amount of fixed costs that will be incurred, because the net profit level might be less after the fixed costs are added, despite the extra sales volume. In Exhibit 10.6, the maximum amount of profit that a company can attain is at the sales level just *before* incurring extra fixed costs, because the increase in fixed costs is so high. Although step costing does not always involve such a large increase in costs, as noted in Exhibit 10.6, this is certainly a major point to be aware of when increasing capacity to take on additional sales volume. In short, more sales do not necessarily lead to more profits.

The next variable in the breakeven formula is the variable-cost line. Although one would think that the variable cost is a simple percentage that is composed of labor and material costs and never varies, this is not the case. This percentage can vary considerably and frequently drops as the sales volume increases. The reason for the change is that the purchasing department can cut better deals with suppliers when it orders in larger volumes. In addition, full truckload or railcar deliveries result in lower freight expenses than would be the case if only small quantities were bought. The result is shown in Exhibit 10.7, where the variable-cost percentage is at its highest when sales volume is at its lowest and gradually decreases in concert with an increase in volume.

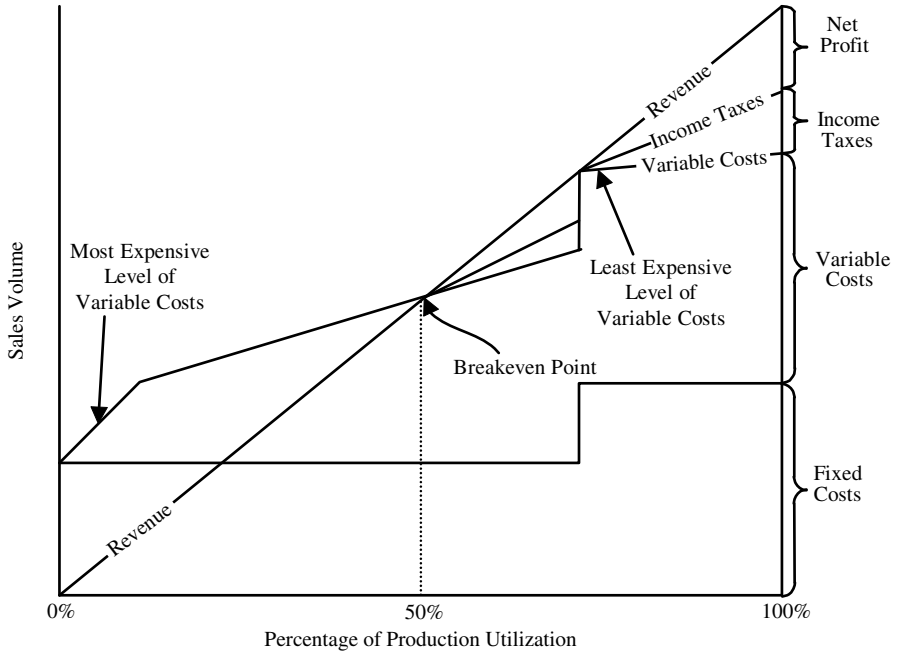

EXHIBIT 10.7 Breakeven Chart, Including Impact of Volume Purchases

Because material and freight costs tend to drop as volume increases, it is apparent that profits will increase at an increasing rate as sales volume goes up, although there might be step-costing problems at higher capacity levels.

Another point is that the percentage of variable costs will not decline at a steady rate. Instead, and as noted in Exhibit 10.7, there will be specific volume levels at which costs will drop. This is because the purchasing staff can only negotiate price reductions at specific volume points. When such a price reduction has been achieved, there will not be another opportunity to reduce prices further until a separate and distinct volume level is reached once again.

The changes to fixed costs and variable costs in the breakeven analysis are relatively simple and predictable, but now we come to the final variable, sales volume, which can shift for several reasons, making it the most difficult of the three components to predict.

The first reason why the volume line in the breakeven chart can vary is the mix of products sold. A perfectly straight sales volume line, progressing from the lower-left to the upper-right corners of the chart, assumes that the exact same mix of products will be sold at all volume levels. Unfortunately, it is a rare situation indeed where this happens, since one product is bound to become more popular with customers, resulting in greater sales and variation in the overall product mix. If the margins for the different products being sold are different, then any change in the product mix will result in a variation, either up or down, in the sales volume achieved, which can have either a positive or negative impact on the resulting profits. Since it is very difficult to predict how the mix of products sold will vary at different volume levels, most CFOs do not attempt to alter the mix in their projections, thereby accepting the risk that some variation in mix can occur.

The more common problem that affects the volume line in the breakeven calculation is that unit prices do not remain the same when volume increases. Instead, a company finds that it can charge a high price early on, when the product is new and competes with few other products in a small niche market. Later, when management decides to go after larger unit volume, unit prices drop in order to secure sales to a larger array of customers, or to resellers who have a choice of competing products to resell. For example, the price of a personal computer used to hover around $2,000 and was affordable for less than 10 percent of all households. As of this writing, the price of a personal computer has dropped to as little as $300 for a netbook computer, resulting in more than 70 percent of all households owning one. Thus, higher volume translates into lower unit prices. The result appears in Exhibit 10.8, where the revenue per unit gradually declines despite a continuing rise in unit volume, which causes a much slower increase in profits than would be the case if revenues rose in a straight, unaltered line.

The breakeven chart in Exhibit 10.8 might make management think twice before pursuing a high-volume sales strategy, since profits will not necessarily increase. The only way to be sure of the size of price discounts would be to begin negotiations with resellers or to sell the product in test markets at a range of lower prices to determine changes in volume. Otherwise, management is operating in a vacuum of relevant data. Also, in some cases the only way to survive is to keep cutting prices in pursuit of greater volume, since there are no high-priced market niches in which to sell.

The breakeven chart in Exhibit 10.8 is a good example of what the breakeven analysis really looks like in the marketplace. Fixed costs jump at different capacity levels,

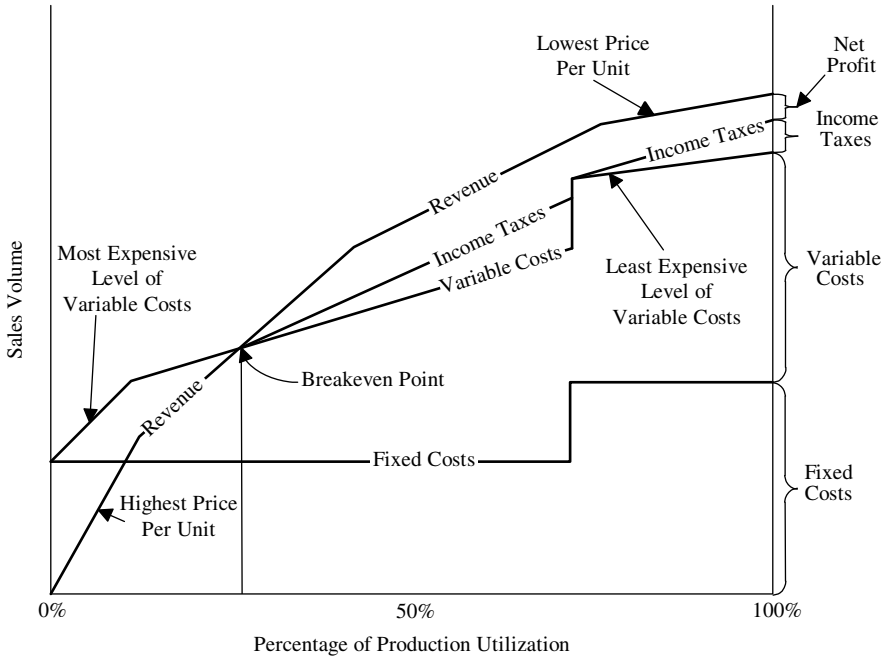

EXHIBIT 10.8 Breakeven Chart, Including Impact of Variable Pricing Levels

variable costs decline at various volume levels, and unit prices drop with increases in volume. Given the fluidity of the model, it is reasonable to periodically revisit it in light of continuing changes in the marketplace in order to update assumptions and make better calculations of breakeven points and projected profit levels.

BUSINESS CYCLE FORECASTING

The CFO might become involved in business cycle forecasting, which can be useful for overall corporate budgeting and capacity planning. This section presents a brief overview of what causes business cycles, what information can be used to make estimates of future changes in business cycles, and how this information can be used in a corporate setting.

A business cycle is a recurring series of expansions and contractions, involving and driven by many economic variables, that manifests itself as changes in the level of income, production, and employment. There are a great many theories regarding why the economy goes through these expansions and contractions. In the following bullet points, we briefly note a number of theories that have been raised in the past century regarding the reasons for business cycles:

- *Consumer demand.* One theory states that a rise in consumer demand causes a demand for more production equipment so that manufacturers can meet the demand. Manufacturers then install an excessive amount of equipment, which leads to overcapacity. The manufacturers then cannot produce enough to pay for the new equipment, which causes debt defaults. Banks then tighten their lending policies, which causes a reduction in consumer demand.
- *Inventory expectations.* Another theory states that inventory is at the core of business cycles. Producers build inventories with the expectation of creating new sales volume. The added production increases the number of jobs in the economy, which spins off enough consumer demand to buy the inventory. When the inventory levels drop, producers expect more sales, so they hire more people to produce more inventory. Then, when the perception changes that consumers will no longer buy the inventory, producers cut back on production, which reduces the number of jobs, which reduces demand for the inventory.
- *Cost of capacity utilization.* Another theory holds that, as a company enters the late stages of a business expansion, the costs of operating at very high levels of capacity utilization will reduce profits, since the costs of overtime, machine maintenance, and high-demand supplies will rise. Because of a drop in cash flow caused by the reduced profits, businesses will have to curtail their capital spending, which reduces orders in the durable-goods industries, which in turn reduces the level of activity in other supporting areas. This eventually cuts the level of activity in the entire economy.
- *Debt accumulation.* Another (and very similar) theory is that companies gradually burden themselves with more and more debt, which they need to build more capacity to fuel additional growth. Eventually, they are unable to pay back the debt,

which causes lenders to tighten their credit terms, which in turn reduces lending on new projects until demand catches up with the current level of production capacity.

- *Money supply.* Yet another theory says that a moderate, positive growth rate in the money supply will avoid business contractions, while a reduction in the money supply will bring about a recession or depression. The money supply can be affected by government actions, as well as by the retention, investment, or spending of funds by consumers.
- *Innovation basis.* Another theory states that economic growth is founded upon bursts of innovation, which tends to be sector-specific and has a trickle-down effect on other parts of the economy. There tends to be immense growth within the sectors experiencing innovation, followed by speculation, overexpansion, and consolidation among the strongest remaining companies. Then there are layoffs as a result of the consolidations, and the economy enters a downward phase.
- *Long-term growth.* A final view is that long-term boom periods will eventually end due to a loss of investor prudence (when they assume that the growth period will go on forever), resulting in increasingly poor and risky investments, growing indebtedness, and a loss of liquidity. There will then be a rising tide of debt restructurings and defaults that drive lenders into tighter credit policies, which in turn reduce consumer demand, which causes an economic downturn.

There are two types of variables that cause business cycle changes to occur. The first is an *exogenous variable*. This is a variable that affects the economic system, although it is not an integral component *of* the system. For example, a bad rainy season will lower the crop yields in the farming community, which, in turn, reduces the amount of purchases by farmers for the next season's crop, which in turn reduces the activity of the suppliers of those purchases, and so on. Another exogenous variable is a war, which can wreak enough destruction to entirely shatter an economy. These types of variables can, to some extent, be called "acts of God." The other type of variable is the *endogenous variable*. This is a variable that affects an economic system from within. For example, overcapacity in the resin production industry causes suppliers to reduce their resin prices to plastic molding companies, which in turn can reduce the prices of their products, which creates an increase in sales, and contributes to an increase in the level of economic activity. Other examples of this type include the demand for products and pricing changes.

The typical company operates within a single sector of the economy, where a single major shock, either of the endogenous or exogenous variety, can cause immediate and massive changes, since individual sectors are much smaller than the national economy, and so can be severely affected by smaller events. For example, an increase in the price of aviation jet fuel will cause the airlines to increase their prices, which reduces the number of seats filled, which drives down airline profits and forces them to postpone orders for new jets, which in turn harms the airline manufacturing companies and *their* supporting groups of suppliers—all due to an increase in the price of jet fuel, which is just a single variable.

Consequently, a CFO might not be overwhelmingly concerned with the operations of the entire national or international economy, since the typical economic contraction

only corresponds to a drop in the gross national product of a few percentage points. However, industry-specific changes within that larger economy can be truly catastrophic, and it is within this smaller economic environment that a company operates and must make corresponding strategic and tactical changes.

If a downturn in the business cycle causes a company's sales to decline, management's first reaction is usually to contract the business. One of the first steps taken is to reduce inventories, so the company is not stuck with a large investment of products that will be at risk of becoming obsolete before they can be sold. One way to reduce inventories is to sell it at reduced prices, but this cuts into gross margins and also fills the distribution pipeline, so that no additional sales can be made until the pipeline clears. The more common approach is to reduce the production staff and all related overhead staff with a layoff, the extent of which will be driven by management's perception of the depth of the upcoming cyclical decline. Management will also likely curtail capital expenditures and increase controls over incidental expenses. Further, the CFO will be called upon to tighten credit to customers and heighten collection activities to ensure that accounts receivable do not include any bad debts, and that collections are made as soon as possible. If there are excess funds available, management will likely use them to pay down debt, so that fixed costs are reduced to the bare minimum in anticipation of poor sales conditions at the bottom of the economic cycle.

All of the changes noted here, for either an increase or decrease in the business cycle, call for changes in a company's operations that will certainly have some impact on profits, but even more so on the level of working capital and fixed assets. For example, waiting too long to cut back production will result in an excess investment in inventory, as well as any new capital projects that were not curtailed in time. The reverse problem arises during an economic upswing, when reacting too slowly will result in a cash inflow from the sale of all inventory, followed by the loss of additional profits because *all* of the inventory has been sold, and there is none left to sell. Thus proper management of working capital and fixed assets lies at the heart of management's decisions regarding how to deal with changes in the business cycle.

During business downturns, there will be a few adventurous companies that will buck the industry trend and *expand*. They do this because they anticipate a short downturn in the economy, and they want to pick up new business—either by undercutting competitors or (more commonly) by waiting until financially weaker companies begin to fail and then buying them. They might also take advantage of lower real estate and equipment costs during these periods to add to their capacity with inexpensive new production facilities. This strategy is only possible if a company has substantial cash reserves or available debt and has an aggressive management team that is willing to take chances.

When the economy begins to turn in an upward direction, management must make several difficult decisions. The first one is to ramp up existing production capacity, which might have been shuttered and now requires refurbishment before production can begin. Then management must determine the extent to which it wants to rebuild its inventory levels to anticipate renewed sales. This is a critical decision, for overproduction in a weakly rebounding economy will create more inventory than is needed,

whereas producing too little in the midst of a strong economic rebound will result in sales being lost to more aggressive competitors. If the rebound is sudden, the company must spend more money on staff overtime and rush equipment deliveries to bring production back up to speed as soon as possible. Credit policies will likely be loosened in order to bring in new business, and management must decide on how much new capital equipment to buy and the most appropriate time to acquire it.

Some forecasting knowledge is required of the CFO in order to have sufficient information to make the preceding decisions. In many cases, the CFO buys forecasts from specialists or relies upon a variety of indicators that are available from the government. Among the more popular indicators:

- *Consumer Price Index (CPI).* The CPI measures the cost of a broad-ranging basket of goods typically bought by consumers and is one of the more closely watched indicators of looming inflationary pressures on the economy. It is issued monthly by the Department of Labor.
- *Gross Domestic Product (GDP).* GDP summarizes the value of all goods and services produced by the U.S. economy and as such is the broadest available measure of economic activity. However, because it includes *all* output, it is difficult to translate into a projected measurable impact on a specific industry. It is issued quarterly, so GDP information is not especially timely. It is issued by the Department of Commerce.
- *Housing starts.* This is the total number of dwellings on which work has begun. It is a good leading indicator of consumer confidence, because consumers will not initiate construction unless there is reasonable confidence in the future. It is issued monthly by the Census Bureau.
- *Producer Price Index (PPI).* The PPI measures the average change over time in the selling prices received by domestic producers for their output. This is a highly recommended measurement for CFOs to review, because it is an excellent early indicator of pricing changes, is broken down by a multitude of industries, and is easily available on the www.bls.gov/ppi Web site. It is issued monthly by the Department of Commerce.
- *Employment Situation.* This report contains the unemployment rate, which is the number of unemployed workers divided by the total of both employed and unemployed workers. It is a good indicator of pressures on employers to retain or release employees. It is issued monthly by the Department of Labor.

An excellent Web site containing many major economic indicators is www.stats.bls.gov, which is run by the Bureau of Labor Statistics. In most cases, considerable additional statistical information is available on other pages of this Web site for most of the statistics listed on its home page.

If the CFO elects to use the services of a forecasting firm, then he or she should be aware of the principal approaches to forecasting that might be used by these firms. There are four primary methods. Since each one is based on different information and might arrive at somewhat different results, it is common for forecasters to blend the

results of two or more methods to arrive at their estimates of future conditions. The methods:

- *Anticipation surveys.* These are surveys of key people in the business community. The purpose of these surveys is to collect information about the intentions of the survey participants to engage in capital purchases, acquisitions, changes in head count, or any other steps that might affect the economy, then aggregate this information to arrive at general estimates of trends.
- *Time series models.* These are trend lines that are based on historical information. For a forecast, one finds the trend line that fits a similar set of previous conditions and fits it to the current conditions to arrive at a trend line of future expectations. These can be relatively accurate in the short run but do not generate good results very far into the future.
- *Econometric models.* These are highly complex and iterative models that simulate the real economy and are frequently composed of hundreds of variables that interact with each other. These can yield good results over periods longer than those predicted by time series models. However, changes in the results of the models are difficult to explain, given the complexity of the underlying formulas.
- *Cyclical indicators.* These are the leading, coincident, and lagging indicators that foretell changes in the economy. This method is a good way to confirm the existence of business cycle changes that have been predicted by other forecasting methods. A leading indicator is something that changes in advance of an alteration in a business cycle, such as the number of new business formations, new capital-expenditure requests, construction contracts, the length of the average workweek, layoff rate, unemployment insurance claims, profit margins, new orders, investments in residential structures, capacity utilization, and new bond or equity issues. These can change anywhere from a few months to more than a year in advance of a related change in the phase of the business cycle. A lagging indicator is something that changes after an alteration in the business cycle has occurred and is used by forecasters to confirm the business-cycle change that was indicated by leading indicators. Examples of lagging indicators are investments in nonresidential structures, unit labor costs, and the amount of consumer credit outstanding.

Another item to review is the number of months by which leading indicators presage a change in the business cycle. Though there might be historical justification for using a certain number of months in a forecasting model, these periods can change, sometimes to the extent of having a leading indicator turn into a lagging indicator. Also, the selection process for variables needs to be very in-depth before they are added to a forecasting model. For example, a new variable should be thoroughly researched to determine the extent of its linkage to a business cycle, how well it predicts business cycle behavior, how consistently it does so, and also how frequently information about the variable is reported (so that it can be included in the forecast in a timely manner). Only if all of these questions receive favorable answers should a new variable be included in a forecasting model.

For example, let us assume that a CFO of a sport rack company has elected to use the last of the above options for creating forecasting information. Sport racks is a very small

EXHIBIT 10.9 Industry-Specific Forecasting Model

Description	Sports Equipment Unit Sales	% Buying Sport Racks	Company Market Share	Forecasted Company Unit Sales	Original Company Forecast	Variance
Ski	3,200,000	25%	40%	320,000	300,000	+20,000
Snowboard	2,700,000	35%	40%	378,000	300,000	+78,000
Bicycle	2,500,000	75%	30%	562,500	550,000	+16,500
Kayak	450,000	30%	30%	40,500	45,000	−4,500

niche market that creates and sells racks for skis, snowboards, bicycles, and kayaks that can be attached to the tops of most kinds of automobiles. The CFO wants to derive a forecasting system that will give management an estimate of the amount by which projected sales can be expected to vary. She decides to subdivide the market into four categories, one each for skis, snowboards, bicycles, and kayaks. Based on a historical analysis, she finds that 25 percent of ski purchasers, 35 percent of snowboard purchasers, 75 percent of bicycle purchasers, and 30 percent of kayak purchasers will purchase a car-top rack system to hold their new equipment. The typical delay in these purchases from the time when they bought their sports equipment to the time they bought sport racks was six months. The CFO finds that she can obtain new sports equipment sales data from industry trade groups every three months. Given the lag time before users purchase car-top racks, this means that she can accumulate the underlying data that predict sport rack sales and disseminate it to management with three months to go before the resulting sport rack sales will occur. Thus, she concludes that this is usable data. The next task is to determine the company's share of the sport rack market, which is readily obtainable from the industry trade group for sport racks, though this information is at least a year old. Given the stability of sales within the industry, she feels that this information is still accurate. She then prepares the report shown in Exhibit 10.9. It shows total sports equipment sales for the last quarter, uses historical percentages to arrive at the amount of resulting sport rack sales and then factors in the company's market-share percentage to determine the sales forecast for each type of sport rack. By comparing this information to the previous sales forecast, the report reveals that the company should significantly ramp up its production of snowboard sport racks as soon as possible.

The example used was for an extremely limited niche market, but it does point out that a modest amount of forecasting work can yield excellent results that are much more company-specific than would be the case if a company relied solely on the forecasts of experts who were only concerned with general national trends. For most companies, there will be a number of additional underlying indicators that should be factored into the forecasting model; however, the work associated with tracking these added data must be compared to the benefit of more accurate results, so that a CFO arrives at a reasonable cost-benefit compromise. The level of precision into which a company can delve to arrive at an outstanding forecasting model can be overwhelming.

SUMMARY

From a practical perspective, the CFO should use capacity analysis regularly. This can involve the monitoring of revenue per person, usage levels of various machines, sales per salesperson, or the need for requested capital purchases. All of these issues involve changes in staffing or machinery, which are exceedingly expensive. Accordingly, the CFO should spend considerable time ensuring that the organization does not spend too much for excess capacity, instead keeping capacity levels at the highest possible level while ensuring that there is some excess capacity available for short-term growth.

Breakeven analysis should be a required part of any proposal to alter the underlying structure of a business. By reviewing it, the CFO can tell if any alterations—such as to price points, capital expenditures, or the incurrence of new expenses—will have a significant impact on the ability of the organization to exceed its breakeven point on a regular basis.

Business cycle forecasting can be the make-or-break analysis tool that gives managers sufficient foreknowledge of market conditions to allow a company to achieve superior performance.

PART FOUR

IV

Funding

CHAPTER ELEVEN

11 Cash Management and Consolidation

CASH MANAGEMENT IS ABSOLUTELY crucial to the operation of any but the most wealthy organizations. If there is ever a cash shortfall, payroll cannot be met, suppliers are not paid, scheduled loan payments will not be made, and investors will not receive dividend checks. Any one of these factors can either bring down a business or ensure a change in its management in short order.

In order to avoid these problems, this chapter covers how to construct a cash forecast and automate the creation of some of the information contained within it, as well as how to create a feedback loop for gradually increasing the accuracy of the forecast. We also describe how to use physical sweeping and notional pooling to concentrate cash from multiple bank accounts for investment purposes.

CASH FORECASTING MODEL

The core of any cash management system is the cash forecast. It is imperative for the management team to be fully apprised of any cash problems with as much lead time as possible. The sample model shown in Exhibit 11.1 is a good way to provide this information.

The cash forecast in the exhibit lists all cash activity on a weekly basis for the next nine weeks, which is approximately two months. There are also three more full months listed in the final columns. By using this columnar format, the reader can see the expected cash flows for nearly a half-year. The final three months on the forecast will tend to be much less accurate than the first two, but are still useful for making estimates about likely cash positions.

The top row on the report in the exhibit lists the date when the cash report was last updated. This is crucial information, for some companies will update this report every day, and the management team does not want to confuse itself with information on old

The New CFO Financial Leadership Manual, Third Edition
by Steven M. Bragg

EXHIBIT 11.1 Cash Forecast

	For the Week Beginning on											
	11/4/10	**11/11/10**	**11/18/10**	**11/25/10**	**12/2/10**	**12/9/10**	**12/16/10**	**12/23/10**	**12/30/10**	**Jan-11**	**Feb-11**	**Mar-11**
Beginning Cash Balance	**$1,037,191**	$1,034,369	$968,336	$ 967,918	$918,082	$932,850	$918,747	$ 829,959	$834,924	$ 754,124	$ 808,592	$ 798,554
Receipts from Sales Projections:												
Coal Bed Drilling Corp.										$ 16,937		$ 174,525
Oil Patch Kids Corp.								$ 12,965		$ 48,521		$ 28,775
Overfault & Sons Inc.									$ 2,500		$ 129,000	
Platte River Drillers									$ 3,000	$ 53,000		
Powder River Supplies Inc.									$ 8,700		$ 18,500	$ 14,500
Submersible Drillers Ltd.										$ 2,500	$ 16,250	$ 16,250
Commercial, Various											$ 25,000	$ 25,000
Uncollected Invoices:												
Canadian Drillers Ltd.			$ 9,975									
Coastal Mudlogging Co.			$ 6,686									
Dept. of the Interior	$ 1,823			$ 11,629		$ 2,897				$ 18,510		
Drill Tip Repair Corp.				$ 5,575								
Overfault & Sons Inc.			$ 9,229									
Submersible Drillers Ltd.				$ 4,245								

U.S. Forest Service		$ 2,967	$ 812	$ 8,715								
Cash, Minor Invoices	$ 2,355	—	$ 3,668	—	$ 21,768							
Total Cash In	$ 4,178	$ 2,967	$ 30,370	$ 30,164	$ 21,768	$ 2,897	—	$ 12,965	$ 14,200	$ 139,468	$ 188,750	$ 259,050
Cash Out:												
Payroll + Payroll Taxes		$ 62,000		$ 65,000			$ 68,000		$ 71,000	$ 71,000	$ 138,000	$ 138,000
Commissions				$ 7,000					$ 7,000		$ 8,000	$ 9,000
Rent			$ 10,788				$ 10,788				$ 10,788	$ 10,788
Capital Purchases			$ 10,000			$ 10,000			$ 10,000		$ 10,000	$ 10,000
Other Expenses	$ 7,000	$ 7,000	$ 10,000	$ 8,000	$ 7,000	$ 7,000	$ 10,000	$ 8,000	$ 7,000	$ 14,000	$ 32,000	$ 32,000
Total Cash Out:	$ 7,000	$ 69,000	$ 30,788	$ 80,000	$ 7,000	$ 17,000	$ 88,788	$ 8,000	$ 95,000	$ 85,000	$ 198,788	$ 199,788
Net Change in Cash	$ (2,822)	$(66,033)	$ (418)	$ (49,836)	$ 14,768	$(14,103)	$(88,788)	$ 4,965	$(80,800)	$ 54,468	$ (10,038)	$ 59,262
Ending Cash:	$1,034,369	$968,336	$967,918	$ 918,082	$932,850	$918,747	$829,959	$ 834,924	$754,124	$ 808,592	$ 798,554	$ 857,816
Budgeted Cash Balance:				**$897,636**				**$833,352**		**$800,439**	**$815,040**	**$857,113**

reports. The next row contains the beginning cash balance. The leftmost cell in the row is in bold, indicating that the person responsible for the report should update this cell with the actual cash balance as of the first day of the report. The remaining cells in the row are updated from the ending cash balance for each period that is listed at the bottom of the preceding column. The next block of rows contains the expected receipt dates for sales that have not yet occurred. It is useful to break these down by specific customer and type of sale, rather than summarizing it into a single row, so that the sales staff can be held responsible for this information. The sales staff should review this information regularly to see if the timing and amount of each expected cash receipt are still correct.

The next block of rows in the exhibit shows the specific weeks within which accounts receivable are expected to be collected. This section can become large and difficult to maintain if there are many accounts receivable, so it is better to only list the largest items by customer and then lump all others into a minor invoices row, as is the case in the exhibit. The input of the collections staff should be sought when updating these rows, since they will have the best insights into collection problems. The sum of all the rows thus far described is then listed in the ''Total Cash In'' row.

The next block of rows in the exhibit shows the various uses for cash. A service company is being used in this forecast, so the largest single use of cash is payroll, rather than the cost of goods sold, as would be the case in a manufacturing company. Other key cash outflows, such as monthly commission and rental payments, as well as capital purchases, are shown in the following rows. Being a service business, there are few other expenses, so they are lumped together in an ''Other Expenses'' row. In this case, cash payments have a slight tendency to be toward the beginning of the month, so the cash flows are adjusted accordingly. If the cost of goods sold had been a major component of the forecast, then it would have either been listed in aggregate and based on a percentage of total sales, or else split into a different cash outflow for each product line. The latter case is more useful when the gross margin is significantly different for each product line, and when the sales by product line vary considerably over time.

There are a few other rows that could be added to the model, depending on the type of payments that a company makes. For example, there could be an annual dividend payment, quarterly income tax payment, or monthly principal and interest payments to lenders. These and other items can be added to enhance the basic model, if needed. However, the model requires considerable effort to update, so one should carefully consider the extra workload needed before adding more information requirements to it.

The bottom of the exhibit summarizes the end-of-period cash position, while also comparing it to the budgeted cash balance for the end of each month. The comparison is important, for it tells management if actual results are departing significantly from expectations.

The exhibit assumes a high degree of manual data entry, rather than automation, but it is certainly possible to use additional formulas in the model in order to reduce the work required to update it. For example, an aggregate assumption can be made regarding the days of receivables that are generally outstanding, and then the total amount of cash receipts from existing invoices can be determined based on that

assumption. However, if the total amount of accounts receivable is skewed in favor of a few large invoices, any changes in the timing of cash receipts for those few invoices can significantly alter the aggregate assumption for the number of days outstanding. Similarly, a days of inventory assumption is generally acceptable for deriving a cash usage figure for inventory purchases, but this is highly dependent on the ability of the production department to manufacture exactly in accordance with the production schedule, so that actual inventory levels stay near their planned levels, while the purchasing staff buys components only in the quantities itemized by the manufacturing planning system.

INFORMATION SOURCES FOR THE CASH FORECAST

The cash forecast shown in the preceding exhibit primarily includes *scheduled items*, which are specific cash inflows and outflows that can be predicted with a reasonable degree of accuracy. Examples of scheduled items are specific accounts receivable and scheduled payroll payments. If the CFO wants an accurate cash forecast, then as much of it as possible should be composed of scheduled items.

It is not always possible to include all of the scheduled items in the cash forecast; a company of reasonable size may have several thousand scheduled items to include in the forecast. In such cases, it is necessary to summarize many of the smaller items using the *distribution method*. Under this method, the CFO examines historical cash flows to create an estimate of the timing and amounts of future cash flows. In the cash flow exhibit, the ''Cash, Minor Invoices'' and ''Other Expenses'' line items were generated using the distribution method. There are too many smaller incoming invoice payments to list individually, so instead we estimate the approximate arrival dates and amounts based on their occurrence in the past, possibly using the company's historical days sales outstanding. Small expenses are also quite predictable.

An experienced compiler of cash forecasts will consider a number of variables when constructing a forecast. For example, employee expense reports tend to arrive at the end of the month, and so will be paid during the first week of the following month. Also, the accounts payable departments of many companies operate with reduced staffing near major holidays, and so are less likely to issue payments on their usual schedules; this is a particular problem during the Christmas holidays. Similarly, payroll payments will be shifted forward in time if a company holiday is scheduled for what would otherwise have been a payroll day. For these reasons, cash forecasting requires a considerable amount of experience.

MEASURING CASH FORECAST ACCURACY

A cash forecast is useless unless it can be relied on to yield accurate forecasts. There are a number of ways to improve the forecast, all involving the continuing comparison of past forecasts to actual results and correcting the system to ensure that better information is provided for future forecasts.

A key area in which the cash forecast can be wildly incorrect is in receipts from sales forecasts. A detailed review of this area will reveal that some salespersons do not want to forecast any sales, because then they will be held accountable for their predictions. This problem requires constant feedback with the sales staff to correct, and may require reinforcement by including the sales forecasting function in the annual review and compensation plan for them.

Another problem is in the accounts payable area, where actual cash outflows will typically exceed forecast cash outflows. This imbalance is caused by a faulty accounts payable data entry process, whereby invoices are initially mailed by suppliers to people outside of the accounts payable department, or because invoices are sent out for approval before they are logged into the accounting system, thereby resulting in their late appearance in the forecast, usually just before they need to be paid. These problems can be solved by asking suppliers to send invoices straight to the accounting department, and by entering all invoices into the accounting system before sending them out for approval. It is also possible to review open purchase orders to see if there are any missing invoices that are supposed to be currently payable, thereby proactively starting a search for the missing invoices.

A major cash-flow variance will arise if a fixed asset is suddenly purchased that was not included in the cash forecast. This problem is best resolved by giving the accounting staff complete access to the capital budgeting process, so that it can tell what capital requests are in queue for approval and when they are likely to require cash payments to obtain.

In short, the accuracy of the cash forecast requires great attention to processes that provide its source data. The accounting staff should regularly compare forecasted to actual results and work their way back through the underlying systems to determine what issues caused the error—and then correct them.

CASH FORECASTING AUTOMATION

The steps just noted to create a cash forecast can be quite cumbersome to accumulate, especially if there are multiple departments or subsidiaries spread out across many locations. When the cash forecast is generated on a regular basis, the required workload can be extraordinarily high. Automation can be used to avoid some of the most time-consuming steps.

Many off-the-shelf accounting software packages contain standard reports that itemize the daily or weekly time buckets in which payments are scheduled to be made, based on each supplier invoice date and the number of days before they are due for payment, including any requirements for early payment in order to take advantage of early payment discounts. The cash-flow information provided by this report is reliable, but tends to be less accurate for the time period several weeks into the future, because of delays in the entry of supplier invoice information into the accounting system. This delay is usually caused by the divergence of incoming invoices to managers for approval. By first entering the invoice information and *then* sending the invoices out for approval,

this time delay can be avoided, thereby improving the accuracy of the automated accounts payable payment timing report.

If there is a well-managed purchase order system in place that is stored in a purchasing database, then the accounts payable report format can be stretched further into the future with some accuracy. Since purchase orders may be issued for some months into the future and involve specific delivery dates, this information can be compiled into a report that reveals when the payments to suppliers based on these purchase orders will be sent out. It is also useful for the purchase of fixed assets, since these orders are so large that suppliers will not normally process an order in the absence of a signed purchase order. However, a large asset purchase may require an up-front payment that will not become apparent until the purchase order is entered into the accounting system, which will result in the sudden appearance of a large cash requirement on the report in the near future.

There are some instances where invoice payments can be predicted for well into the future, even in the absence of a purchase order. These are typically recurring payments in a constant amount, such as facility lease payments or maintenance payments that are prespecified under a long-term contract. If these payments are listed in the accounts payable system as recurring invoices, then the accounts payable payment timing report will include them.

The same report is available in many accounting software packages for accounts receivable, itemizing the day or week buckets in which invoice payments are scheduled to be received, based on their original issuance dates and the number of days before customers are required to pay for them. However, this report tends to be much less accurate, for any overdue invoice payments are scheduled for immediate payment in the current period, when in fact there may be collection problems that will delay receipt for quite some time. Also, the report does not account for the average delay in payments that varies by each customer, in accordance with each one's timeliness in making payments. Consequently, this report should be manually modified, especially for the largest outstanding invoices, to reflect the accounting staff's best estimates of when payments will actually be received.

In a few cases, software packages will also extend current payroll payments into the future by assuming that the existing salaries for current employees will continue at the same rates, and that hourly employees will be paid for a regular workweek for all future reporting periods. This is not a viable option for those companies that outsource their payroll, since the in-house software will not have any way to predict cash flows if it does not contain any information about payroll.

The preceding discussion shows that there are numerous ways in which elements of the cash forecast can be automated. However, there are so many variables, such as uncertain receipt dates for accounts receivable, changes in payroll levels, and the sudden purchase of fixed assets, that any automatically generated reports should be adjusted by the accounting staff's knowledge of special situations that will throw off the results of the reports. Also, the basis for automated reports is primarily very short-term accounts receivable and payable information that will rapidly become inaccurate for periods much greater than a month, so manual adjustments to the cash forecast will become increasingly necessary for later time periods.

CASH CONCENTRATION OVERVIEW

Larger companies with many subsidiaries, especially those with operations in multiple countries, maintain a significant number of bank accounts. This is an inefficient arrangement from the perspective of cash management, since the accounting staff must track all of the individual account balances. With such highly fragmented cash balances, it is extremely difficult to repurpose the funds for either centralized payments, debt paydown, or investments. An excellent solution is *cash concentration*, where the cash in multiple accounts is pooled.

Cash concentration requires that a company create a *cash pool*. This is composed of a cluster of subsidiary bank accounts and a concentration account. Funds physically flow from the subsidiary accounts into the concentration account under a *physical sweeping* method. Alternatively, cash balances in the subsidiary accounts can be concentrated in the master account only within the bank's records, with the cash remaining in the subsidiary accounts. This later method is called *notional pooling*.

PHYSICAL SWEEPING

When a company sets up a *zero-balance account*, its bank automatically moves cash from that account into a concentration account, usually within the same bank. The cash balance in the zero-balance account (as the name implies) is reduced to zero whenever a sweep occurs. If the account has a debit balance at the time of the sweep, then money is shifted from the concentration account back into the account having the debit balance. An example is shown in Exhibit 11.2.

In the example, two of three subsidiary accounts initially contain credit (positive) balances, and Account C contains a debit (negative) balance. In the first stage of the sweep transaction, the cash in the two accounts having credit balances are swept into the concentration account. In the next stage of the sweep, sufficient funds are transferred from the concentration account to offset the debit balance in Account C. At the end of the sweep, then, there are no credit or debit balances in the zero-balance accounts.

It is also possible to use *constant balancing* to maintain a predetermined minimum balance in a subsidiary account, which involves sweeping only those cash levels above the minimum balance, and reverse sweeping cash into the subsidiary account if the balance drops below the minimum balance.

Daily sweeping may not be necessary outside of a company's designated core currencies. This is especially likely when noncore currency account balances are relatively low. If so, it may be more cost-effective to sweep them less frequently, or to implement *trigger balances*. A trigger balance is an account balance level above which excess funds are swept out of the account.

Some concentration banks can also monitor a company's account balances at third-party banks using SWIFT[1] messages, and create transfer requests to move excess cash to the concentration bank. The key point with account sweeping is to fully

[1] Society for Worldwide Interbank Financial Telecommunication

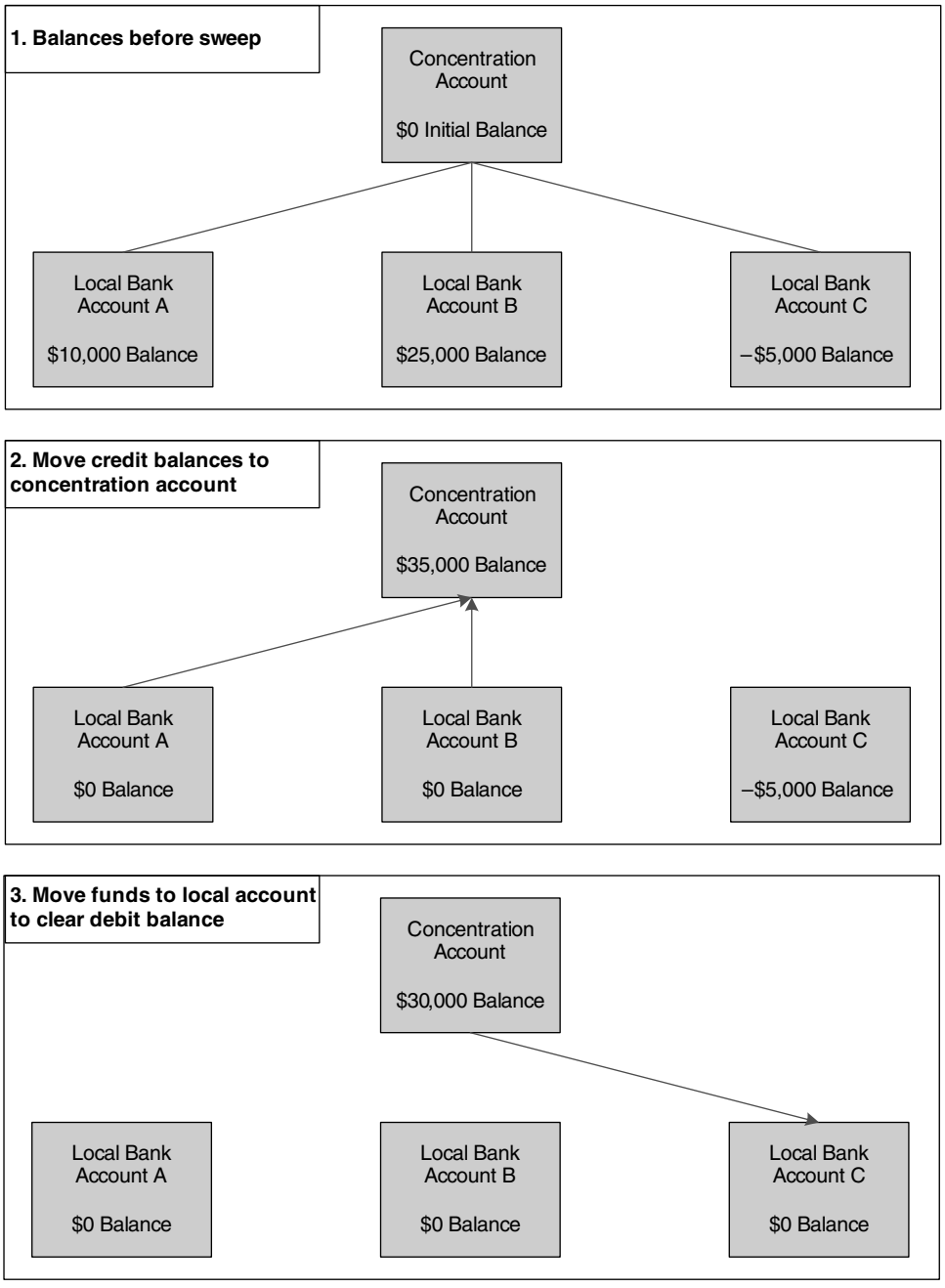

EXHIBIT 11.2 Zero-Balance Sweep Transaction

automate it—the effort involved in manually tracking account balances and shifting funds on a daily basis is not only expensive, but also likely to cause errors.

In most sweeping transactions, the sweeps occur on an *intraday* basis, which means that balances are transferred to the concentration account before the end of the day. Consequently, some cash may be left behind in subsidiary accounts, rather than being centralized. This occurs when cash arrives in an account after execution of the daily sweep. The cash will remain in the subsidiary account overnight, and be included in the following day's sweep. If a bank can accomplish true *end-of-day* sweeps, then no cash will be left behind in local accounts. If a company is not dealing with such a bank, then a proactive approach to depositing checks before cut-off times is the best way to avoid unused cash.

There may be a need to track the amounts of cash swept from each zero-balance account into the concentration account; if so, the company records an intercompany loan from the subsidiary to the corporate parent in the amount of the cash transferred through the cash concentration process. Here are three reasons for doing so:

1. *Subsidiary-level financial reporting requirements.* A subsidiary may have an outstanding loan, for which a bank requires the periodic production of a balance sheet. Since account sweeping shifts cash away from a subsidiary's balance sheet, detailed sweep tracking is needed to put the cash back on the subsidiary's balance sheet for reporting purposes. This can be done by recording an intercompany loan from the subsidiary to the corporate parent in exchange for any swept cash, which can then be reversed to place the cash back on the subsidiary's balance sheet.
2. *Interest income allocation.* A company may elect to allocate the interest earned at the concentration account level back to the subsidiaries whose accounts contributed cash to the concentration account. Some countries require that this interest allocation be done, to keep a company from locating the concentration account in a low-tax jurisdiction, where the tax on interest income is minimized. Thus, the amounts of cash swept into and out of a subsidiary account must be tracked in order to properly allocate the correct proportion of interest income to that account.
3. *Interest expense allocation.* Some tax jurisdictions may require the parent company to record interest expense on intercompany loans associated with the transfer of cash in a physical sweeping arrangement. If so, the company must track the intercompany loan balances outstanding per day, which is then used as the principal for the calculation of interest expense. The interest rate used for these calculations should be the market rate; any other rate can be construed by local tax authorities to be transfer pricing designed to shift income into low-tax regions.

Some banks have the capability to track the amount of balance sweeps from each subsidiary account on an ongoing basis, which a company can use as its record of intercompany loans.

NOTIONAL POOLING

Notional pooling is a mechanism for calculating interest on the combined credit and debit balances of accounts that a corporate parent chooses to cluster together, without

actually transferring any funds. This approach allows each subsidiary company to take advantage of a single, centralized liquidity position, while still retaining daily cash management privileges. Also, since it avoids the use of cash transfers to a central pooling account, there is no need to create or monitor intercompany loans, nor are there any bank fees related to cash transfers (since there are no transfers). In addition, it largely eliminates the need to arrange overdraft lines with local banks. Further, interest earnings tend to be higher than if investments were made separately for the smaller individual accounts. Also, it offers a solution for partially owned subsidiaries whose other owners may balk at the prospect of physically transferring funds to an account controlled by another entity. Finally, the use of notional pooling is not a long-term commitment; on the contrary, it is relatively easy to back out of the arrangement.

Where global notional pooling is offered (usually where all participating accounts are held within a single bank), the pool offsets credit and debit balances on a multi-currency basis without the need to engage in any foreign exchange transactions. An additional benefit of global notional pooling lies in the area of intercompany cash flows; for example, if there are charges for administrative services, the transaction can be accomplished with no net movement of cash.

Once a company earns interest on the funds in a notional account, interest income is usually allocated back to each of the accounts in the pool. For tax management reasons, it may be useful for the corporate parent to charge the subsidiaries participating in the pool for some cash concentration administration expenses related to management of the pool. This scenario works best if the corporate subsidiaries are located in high-tax regions where reduced reportable income will result in reduced taxes.

The main downside of notional pooling is that it is not allowed in some countries, especially in portions of Africa, Asia, and Latin America (though it is very common in Europe). In these excluded areas, physical cash sweeping is the most common alternative. Also, the precise form of the notional pooling arrangement will vary according to local laws, so that some countries allow cross-border pooling while others do not.

In addition to the prohibition against notional pooling in some countries, it is difficult to find anything but a large multinational bank that offers cross-currency notional pooling. Instead, it is most common to have a separate notional cash pool for each currency area.

COMPARISON OF ACCOUNT SWEEPING AND NOTIONAL POOLING

Where there is a choice between account sweeping and notional pooling, notional pooling is usually the better alternative. Under notional pooling, cash does not physically leave the bank accounts of each subsidiary, which greatly reduces the amount of intercompany loans that would otherwise have to be recorded. This eliminates the treasury overhead cost that would otherwise be associated with tracking and recording the intercompany loans.

Similarly, if the parent company allocates interest earned to its various subsidiaries based on their cash balances, this requires significant accounting resources to calculate

the interest income allocation based on intercompany loans and deposits. In multi-currency situations, this also involves revaluing the interest income into different currencies. However, in a notional pooling environment, the bank may be able to automate the calculation of interest, with a physical transfer of funds at month end to pay out the interest income to each subsidiary.

Also, if the intent is to pool funds denominated in multiple currencies, account sweeps require the use of foreign exchange transactions, and possibly hedging. Notional pooling eliminates these activities, since funds are not shifted from one currency to another.

When account sweeping moves cash from one entity to another, this can have adverse tax consequences in some countries. Conversely, because notional pooling requires no physical transfer of funds between legal entities, no tax problems are triggered.

Notional pooling is more likely to be supported by the managers of local subsidiaries, since it means that they retain control over their cash balances. Indeed, they may not even realize that a notional pooling arrangement has been created!

However, a major disadvantage of notional pooling is that it is illegal in some countries. Thus, notional pooling should be taken advantage of where it is offered. When not available, physical sweeping is a very acceptable alternative to conducting no cash concentration activities at all.

CASH MANAGEMENT CONTROLS

Once a cash forecasting system is in place, one can tell if there will be cash-flow difficulties coming up in the short term and take steps to ensure that the problems are minimized. In this section, we look at a variety of methods for controlling the flow of cash, which involve not only a speeding up of the cash-handling process but also increasing the focus on reducing a company's cash requirements in all operational areas. The specific items are as follows:

- *Avoid early payments.* Though it seems obvious, the accounts payable department will pay suppliers early from time to time. This can occur because the accounting staff has already input a default payment interval into the accounting computer, and is not regularly reviewing supplier invoices to see if the payment terms have changed. It is also possible that only a few check runs are being printed per month, which results in some invoices being paid slightly early, simply because the next check run is not scheduled for some time; this can be avoided through the use of either more check runs or the implementation of a policy to only pay on or after the payment due date, thereby shifting these checks to a later check run.
- *Avoid engineering design changes.* If minor modifications are allowed to be made to products currently in production, this probably means that some parts that were included in the old design will no longer fit in the new design. Unless great care is taken to use up all of the old parts prior to switching to the modified product, there will be a gradual buildup of parts in the warehouse that can no longer be used, thereby increasing the company's investment in raw materials inventory. For this

reason, the value received from design changes must be clearly proven to outweigh their added inventory cost.

- *Avoid stuffing the distribution pipeline.* One way to manufacture abnormally high sales is to offer especially good deals to customers, thereby dumping on them an excessive quantity of goods. However, doing so will eventually backfire on the company, since customers will not need to purchase from the company again for some time, resulting in reduced future sales. For the purposes of this discussion, the issue is particularly important if the deal offered to customers is delayed payment in exchange for their accepting goods immediately. By doing so, a company greatly increases the amount of cash that is needed to fund a much larger accounts receivable balance.
- *Conduct a prompt bank reconciliation.* The management team can find itself scrambling for cash if the bank's and the company's cash records diverge significantly, due to delays in completing a bank reconciliation. To avoid this, it is possible to conduct a bank reconciliation every day through an online connection to the bank's database, or at least by immediately completing the reconciliation as soon as the report is received from the bank.
- *Eliminate excess checking accounts.* Most checking accounts do not earn interest on the funds stored within them, so the presence of more than one account means that an excess volume of cash is being spread out in too many accounts. By evaluating the need for each checking account and consolidating as many as possible, one can reduce the amount of unused cash in the system. For a further refinement to this approach, see the later comment in this section about zero balance accounts.
- *Eliminate invoicing errors.* An invoicing error of any type can result in a greatly delayed customer payment, while the problem is identified and corrected. To avoid this problem, the accounting department should keep a log of all errors encountered and assign a task force to the chore of altering the invoicing process in order to eliminate the errors in the future.
- *Improve sales forecast accuracy.* If the forecasts on which the production schedule is based are inaccurate, then there is a strong chance that there will be some production overages, which will result in excess inventory that must be funded for a long time until the inventory can be sold off. This forecasting error can be improved on by obtaining direct access to the forecasts of the company's customers so that the production scheduling staff can see exactly what the demand levels are likely to be. It is also possible to switch to a just-in-time (JIT) manufacturing system, where the focus is on producing to order, rather than to a forecast (though by no means always achievable). At a minimum, compare sales forecasts to historical sales records at both the customer and product level to see if the forecasts have any basis in historical fact and investigate those with the greatest variances.
- *Install lockboxes.* Most banks offer the service of opening a company's mail, extracting customer payments, and depositing them directly into a corporate bank account, which can shave anywhere from one to three days off the transit time required to move cash into the account. The savings are especially great if lockboxes are distributed throughout the country, so that customers are directed to send their payments to those lockboxes located nearest to them. This requires the

company to contact all customers and request them to shift their payments to the lockbox address, which will be a post office box number. In exchange for this service, the bank will charge a small monthly service fee, plus a fee for each check processed. During the processing of cash, the bank photocopies each incoming check and mails it to the company, so that the accounts receivable staff can record the cash receipt in the accounting computer system.

- *Install zero balance accounts.* The concentration of all available cash can be heightened not only through the use of lockboxes but also by keeping the resulting cash in investment accounts and then shifting the cash automatically to the checking accounts only when checks are drawn against them. This type of checking account is called a *zero balance account*. It can also be used for a payroll account.
- *Lengthen supplier payment terms.* If a few key suppliers have required the company to pay on very short terms, then this can greatly reduce the amount of cash that a company has available. The purchasing staff should be asked to negotiate with these suppliers to lengthen terms, perhaps at the cost of committing to larger purchasing volumes or slightly higher prices. When this change takes place, the purchasing staff must notify the accounting department, or else it will continue to pay on the original shorter terms, which are already listed in the accounts payable system and will automatically be used for all future payments unless manually changed.
- *Outsource cash-intensive functions.* Some activities, such as computer services, require considerable investments in capital equipment. To avoid this expenditure, those departments can be outsourced to a supplier, thereby not only avoiding additional asset investments but also allowing the company to sell off any existing assets, perhaps to the supplier that takes over the function. This tends to be a longer-term solution, since shifting any function outside a company requires a great deal of transitional planning.
- *Reduce purchasing overages.* An overly efficient purchasing department can buy greater quantities of items than are strictly needed in the short term, on the grounds that it does not want to issue a number of purchase orders for small quantities when a single order would have sufficed, thereby saving it a great deal of personnel time. These large purchases can lead to a considerable excess use of cash. A good way to avoid this problem is to invest in a materials management system, such as material requirements planning (MRP), under which the system specifies exactly what materials to buy and can even issue the required purchase orders. The purchasing staff can also be evaluated based on the number of raw material inventory turns, which will focus them away from making unnecessarily large purchases.
- *Sell fixed assets.* The accounting department should regularly review the complete list of fixed assets to see if there are any that are no longer in use, and so can be sold. Though this task should be left up to the department managers, cash conservation is not one of their primary tasks, and so they tend to ignore old assets. One way around this performance problem is to measure department managers based on their return on assets; by doing so, they will constantly work to reduce the asset base for which they are responsible, which will lead to the increased conversion of old assets into cash.

- *Sell obsolete inventory.* The accounting staff should create a report that shows which inventory items have not been used recently, or which items are in such excessive quantities that they will not be drawn down for a long time. With this information, the purchasing department can contact suppliers to sell back the inventory or obtain credits against future purchases. If neither approach will work, the company may still be able to obtain a tax deduction by donating the inventory to a nonprofit organization.
- *Tighten customer credit.* If the accounts receivable balance appears to be disproportionately high or if the proportion of overdue accounts receivable is excessive, then reduce the amount of credit extended to selected customers. However, this can interfere with the corporate growth rate if the strategy involves increasing sales through the use of easy credit.
- *Tighten the process flow that results in cash.* The entire process of taking a customer order, building the product, delivering it, sending an invoice, and receiving payment can be an extraordinarily involved and lengthy one. If it is handled improperly, the inflow of cash once a customer order has been received will be greatly delayed. In order to avoid this problem, periodically reexamine the entire process with the objective of minimizing the time required to receive cash at the end of the process. For example, avoid queue times when orders are waiting in the in-boxes of employees by concentrating as many steps in the hands of one employee as possible (called process centering). Another possibility is to replace portions of the existing system with new technology, such as the use of lockboxes to accelerate the receipt of cash, or the use of a centralized ordering database that tracks the flow of orders through the system. (For information about tightening the process, refer to *Just-in-Time Accounting*, 3rd Edition by Steven M. Bragg [John Wiley & Sons, 2009]).
- *Use a manufacturing planning system.* Any production planning system will greatly streamline the flow of materials through a manufacturing facility. Accordingly, any company engaged in production should invest in a material requirements planning (MRP), manufacturing resources planning (MRP II), or JIT system. Although all have differing underlying concepts and methods of operation, they will all result in reduced inventory levels. When properly installed, the JIT system is particularly effective in achieving this result.
- *Verify times when cash discounts are applicable.* Though it is standard practice to always take discounts in exchange for early payments to suppliers whenever they are offered, verify that the discounts taken are worth their cost. As noted in Exhibit 11.3, there are situations where it does not make sense to take the discount. For example, the second column of the exhibit shows that an invoice paid on regular terms of 30 days, rather than at a discount of 1 percent after 10 days have passed, will have a net annualized interest cost to the company of 18.5 percent. We derive the 18 percent figure from the 1 percent interest cost that the company is incurring to wait an extra 20 days to make a payment; since there are roughly eighteen 20-day periods in a year, the annualized interest rate is about 18 times 1 percent, or 18 percent. To take the example a step further, if cash is in such short supply that the company cannot pay for the early discount, and in fact can only pay after 40 days have passed, its cost of funds will have dropped to 12.3 percent, which may be quite close to its existing cost of funds, and so it may appear to be a reasonable alternative to paying early.

EXHIBIT 11.3 Annual Interest Cost of Not Taking a Cash Discount

If Paid On:	1/10, N/30	2/10, N 30
Day 10	0%	0%
Day 20	36.9%	73.8%
Day 30	18.5%	36.9%
Day 40	12.3%	24.6%

A key issue in the preceding bullet points is that the opportunity to manage cash lies in all areas of a company, including the finance, accounting, production, sales, distribution, and engineering departments. Thus, the management of cash should not be considered the sole responsibility of the finance and accounting departments.

SUMMARY

The cash management function is an important one that deserves the utmost attention from the CFO, since a cash shortfall can bring a company's operations to an abrupt halt in short order. The cash management process is based on a foundation of detailed and ongoing cash forecasting, which should be regularly compared to actual results in order to review and improve the accuracy of the overall process. Only by doing so can a company predict the amount and timing of cash problems and work to correct them in a timely manner. Cash forecasting should also be coupled with a cash concentration system, which is useful for the optimization of cash investments, as described in the following chapter.

CHAPTER TWELVE

12 Investing Excess Funds

IN MOST COMPANIES, SURPLUS funds not needed for either operating purposes or compensating bank balances are available for investment. Prudent use of these funds can add to income, though the CFO must consider a range of investment criteria before selecting the appropriate investment vehicle. This chapter describes the major investment criteria, investment restrictions, and a variety of commonly used investment options.

INVESTMENT CRITERIA

When considering various forms of cash investment, one should first consider the *safety of the principal* being invested. It would not do to invest company funds in a risky investment in order to earn extraordinarily high returns if there is a chance that any portion of the principal will be lost. Accordingly, a company policy should be approved by the board of directors that limits investments to a specific set of low-risk investment types. Also, some consideration should be given to the *maturity* and *marketability* of an investment. For example, if an investment in a block of apartment houses appears to generate a reasonably risk-free return and a good rate of return, it is still a poor investment from a cash management perspective, because the investment probably cannot be converted to cash on short notice. Accordingly, it is best to only make investments where there is a robust market available for their immediate resale. The final consideration when making an investment is its *yield*—and this is truly the last consideration after the previous items have already been reviewed. Within the boundaries of appropriate levels of risk, maturity, and marketability, one can then pick the investment with the highest yield. Since these criteria tend to limit one to very low-risk investments, the yield will be quite low. Nonetheless, it is still a better investment than leaving the cash in a checking account.

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The investment criteria for a company that finds itself in a rapid growth situation are more circumscribed. It typically burns through its cash reserves quite rapidly, so the liquidity of its investments must be extremely high in order to allow rapid access to it. Unfortunately, high liquidity is commonly associated with low investment returns, so the CFO is forced to invest in low-yield investments. In addition, the company cannot run the risk of loss on its investments, because it is critically important to keep cash available to feed the company's growth engine. Since risk is also associated with return, the CFO must, once again, favor low-yield investments for minimal risk.

INVESTMENT RESTRICTIONS

Sometimes the board of directors or the CFO will place restrictions on how funds may be invested. Subjects covered should include maximum levels of investment security, the credit rating of the issuer, and the maximum allowable amount of investment in selected types of securities by issuer, type of instrument, country, and currency. An example of investment guidelines is shown in Exhibit 12.1.

Where the amount of funds invested is significant, the board of directors may want to see a summarization of the types of investment vehicles used, as well as the amounts invested and expected yields on each one. Detailed investments by individual bank are not necessary, just a grouping by category. An example of such a report is shown in Exhibit 12.2.

INVESTMENT OPTIONS

Within the investment boundaries just noted, there are a number of available investment options available. The most common ones that have low risk levels, short maturity dates, and high levels of marketability are as follows:

- *Bonds near maturity dates.* A corporate bond may not mature for many years, but you can always purchase a bond that is close to its maturity date. There tends to be a minimal risk of loss (or gain) on the principal amount of this investment, since there is a low risk that interest rates will change enough to impact the bond's value in the short time period left before its maturity date. A variation on this type of investment is the municipal bond, for which there is no tax on the interest income; however, in consideration of this reduced liability, its yield also tends to be somewhat lower than on other types of bonds.
- *Certificate of deposit.* Banks issue these certificates, usually in small-dollar amounts such as $1,000. A CD requires a minimum investment period and carries a rate slightly higher than what is found in a money market account. You cannot write checks against a CD.
- *Commercial paper.* Larger corporations issue short-term notes that carry higher yields than on government debt issuances. There is also an active secondary market for them, so there is usually no problem with liquidity. As long as you stay with the

EXHIBIT 12.1 Investment Guidelines

Objective: To invest excess cash in only top-quality short-term investments, for optimum total return, commensurate with corporate liquidity requirements.

Liquidity: Liquidity shall be provided by minimum and maximum limits as follows:

1. At least $80 million shall be invested in the overnight investments and in negotiable marketable obligations of major U.S. issuers.
2. No more than 50 percent of the total portfolio shall be invested in time deposits or other investments with a lack of liquidity such as commercial paper for which only the dealer and issuer make a market.

Diversification: Diversification shall be provided through a limit on each nongovernment issuer (as listed next). These are general limits, and in each case quality review may result in elimination of a lower limit for the issuer. Overnight or repurchase investments must meet quality criteria but are not subject to limits on the amount invested.

1. U.S. government and agencies—no limit.
2. Domestic bank certificates of deposit, time deposits, and banker's acceptances—$30 million limit for banks with capital accounts in excess of $800 million (top 10 banks); $20 million for banks with capital accounts of $350 to $800 million (second 11 banks); $5 million for all other banks with capital accounts in excess of $250 million (11 banks).
3. U.S. dollar (or fully hedged foreign currency) obligations of foreign banks, each with capital accounts exceeding $500 million—limited to $15 million each for Canadian banks and $10 million each for other foreign banks, subject to an aggregate limit of $75 million for non-Canadian foreign banks.
4. Domestic commercial paper with P-1/A-1 rating only—$20 million limit for issuers with long-term senior debt rating of Aa or better; $10 million for issuers with a debt rating of A; and $10 million for commercial bank holding companies with capital amounts in excess of $500 million, within the overall limit of the flagship bank described in item 2 above.
5. Foreign commercial paper unconditionally guaranteed by a prime U.S. issuer and fully hedged, subject to the guarantor's issuer limit described in item 4.
6. Obligations of savings and loan associations, each with capital accounts exceeding $250 million, and limited to $10 million each.

Operating procedure: Payments shall be made only against delivery of a security to a custodian bank. Securities shall be delivered from custody only against payment. Due bills by a bank will be accepted for delivery only under exceptional conditions. No due bills issued by a dealer will be accepted.

Maturity limits: The average maturity of the entire fund shall be limited to an average of two years. The maximum maturity for each category is as follows:

U.S. government	5 years
Municipal obligations	2 years
Bank certificates of deposit	1 year
Banker's acceptances	1 year
Bank time deposits	90 days
Commercial paper	270 days

EXHIBIT 12.2 Sample Investment Report

	Dollars Invested (millions)	Percent of Total
Resales and overnight time deposits	$18.0	10.3%
U.S. banks—U.S. dollar time deposits	$105.2	60.2%
Foreign banks—U.S. dollar certificates of deposit	$24.7	14.1%
U.S. banks—Eurodollar time deposits	$17.5	10.0%
Commercial paper	$9.3	5.4%
Totals	$174.7	100.0%

commercial paper issued by ''blue-chip'' organizations, there is also little risk of default.

- *Money market fund.* This is a package of government instruments, usually composed of Treasury bills, notes, and bonds, that is assembled by a fund management company. The investment is highly liquid, with many investors putting in funds for as little as a day. It is possible to write checks against a money market account, though the number may be limited by the fund operator in order to keep a company from using the fund as their main checking account.
- *Repurchase agreement.* This is a package of securities that an investor buys from a financial institution, under the agreement that the institution will buy it back at a specific price on a specific date. It is most commonly used for the overnight investment of excess cash from one's checking account, which can be automatically handled by one's bank. The typical interest rate earned on this investment is equal to or less than the money market rate, since the financial institution takes a transaction fee that cuts into the rate earned.
- *U.S. Treasury issuances.* The U.S. government issues a variety of notes with maturity dates that range from less than a year (U.S. Treasury certificates) through several years (notes) to more than five years (bonds). The wide range of maturity dates gives one a broad range of investment options. Also, there is a strong secondary market for these issuances, and so they can be liquidated in short order. U.S. government debts of all types are considered to be risk-free, and so have somewhat lower yields than other forms of investment.

INVESTMENT STRATEGIES

The CFO should develop a standard methodology for investing funds. This goes beyond the selection of a type of investment, and enters the realm of strategies that can range from being passive (and requiring no attention) to those that are quite active and call for continuing decision making. This section describes a range of possible investment strategies.

At the most minimal level of investment strategy, the CFO can do nothing and leave idle balances in the corporate bank accounts. This is essentially an *earnings credit*

strategy, since the bank uses the earnings from these idle balances to offset its service fees. If a company has minimal cash balances, then this is not an entirely bad strategy—the earnings credit can be the equivalent of a modest rate of return, and if there is not enough cash to plan for more substantive investments, leaving the cash alone is a reasonable alternative.

A *matching strategy* simply matches the maturity date of an investment to the cash flow availability dates listed on the cash forecast. For example, ABC Company's cash forecast indicates that $80,000 will be available for investment immediately, but must be used in two months for a capital project. The CFO can invest the funds in a two-month instrument, such that its maturity date is just prior to when the funds will be needed. This is a very simple investment strategy that is more concerned with short-term liquidity than return on investment, and is most commonly used by firms having minimal excess cash.

A *laddering strategy* involves creating a set of investments that have a series of consecutive maturity dates. For example, ABC Company's cash forecast indicates that $150,000 of excess cash will be available for the foreseeable future, and its investment policy forbids any investments having a duration of greater than three months. The CFO could invest the entire amount in a three-month instrument, since this takes advantage of the presumably somewhat higher interest rates that are available on longer-term investments. However, there is always a risk that some portion of the cash will be needed sooner. In order to keep the investment more liquid while still taking advantage of the higher interest rates available through longer-term investments, the CFO breaks the available cash into thirds, and invests $50,000 in a one-month instrument, another $50,000 in a two-month instrument, and the final $50,000 in a three-month instrument. As each investment matures, the CFO reinvests it into a three-month instrument. By doing so, ABC always has $50,000 of the invested amount coming due within one month or less. This improves liquidity, while still taking advantage of longer-term interest rates.

A *tranched cash-flow strategy* requires the CFO to determine what cash is available for short, medium, and long-term investment, and to then adopt different investment criteria for each of these investment tranches. The exact investment criteria will vary based on a company's individual needs, but here are three ways the tranches might be arranged:

1. The short-term tranche is treated as cash that may be needed for operational requirements on a moment's notice. This means that cash flows into and out of this tranche can be strongly positive or negative. Thus, return on investment is not a key criterion—instead, the CFO focuses on very high levels of liquidity. The return should be the lowest of the three tranches, but should also be relatively steady.
2. The medium-term tranche includes cash that may be required for use within the next 3 to 12 months, and usually only for highly predictable events, such as periodic tax or dividend payments, or capital expenditures that can be planned well in advance. Given the much higher level of predictability in this tranche, the CFO can accept longer-term maturities with moderate levels of volatility that have somewhat higher returns on investment.

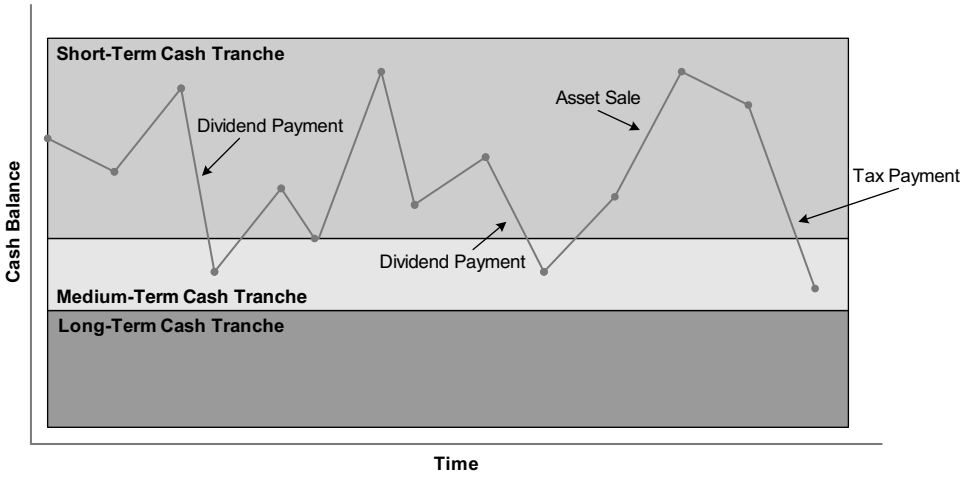

EXHIBIT 12.3 Investments by Cash-Flow Tranches

3. The long-term tranche includes cash for which there is no planned operational use, and that the CFO feels can be safely invested for at least one year. The priority for this tranche shifts more in favor of a higher return on investment, with an attendant potential for higher levels of volatility and perhaps short-term capital loss, with a reduction in the level of liquidity.

Portrayed graphically, the tranches would appear as noted in Exhibit 12.3. The corporate cash balance should rarely decline into the long-term tranche, with occasional forays into the medium-term tranche, while the cash level will vary considerably within the short-term tranche.

An example of the numerical result of a tranched cash-flow strategy is shown in Exhibit 12.4, which assumes a baseline return to be the return on one-month Treasuries, with a target of increased basis points (BPS) above that standard for the medium-term and long-term tranches.

To engage in the tranched cash-flow strategy, the CFO should regularly review the cash forecast and adjust the amounts of cash needed in each of the three tranches. Inattention to these adjustments could result in an unanticipated cash requirement

EXHIBIT 12.4 Returns from Tranched Cash-Flow Strategy

	Baseline Return	+	Additional Basis Points	Percent of Portfolio	Return Enhancement
Short-term tranche	1 month Treasuries	+	0	50%	0 bps
Medium-term tranche	1 month Treasuries	+	15	40%	+6 bps
Long-term tranche	1 month Treasuries	+	60	10%	+6 bps
			Total Incremental Return		+12 bps

when the cash in the company's long-term tranche is tied up in excessively long-term, illiquid investments.

The strategies outlined here involve a broad range of ongoing investment activities; the more active ones call for extra staffing to ensure that they are closely monitored.

SUMMARY

The proper investment of excess funds is commonly overlooked by the CFO, who frequently delegates this task. However, by doing so, the CFO might be missing out on incremental improvements in investment income that can add up to substantial additional profits. Further, lack of attention to this area might result in a subordinate's investments in areas that present a risk of lost funds, or that are not sufficiently liquid to meet a company's short-term cash-flow requirements. Consequently, the CFO should create an investment policy and strategy such as the ones described in this chapter and then arrange with the internal audit department to verify that actual investment performance matches the guidelines laid out within the policy.

CHAPTER THIRTEEN

13 Obtaining Debt Financing

A BUSINESS OF ANY size is likely to require extra funding at some point during its history that exceeds the amount of cash flow that is generated from ongoing operations. This may be caused by a sudden growth spurt that requires a large amount of working capital, an expansion in capacity that calls for the addition of fixed assets, a sudden downturn in the business that requires extra cash to cover overhead costs, or perhaps a seasonal business that requires extra cash during the off-season. Different types of cash shortages will call for different types of funding, of which this chapter will show that there are many types. In the following sections, we will briefly describe each type of financing and the circumstances under which each one can be used, as well as the management of financing issues and bank relations.

MANAGEMENT OF FINANCING ISSUES

The procurement of financing should never be conducted in an unanticipated rush, where the CFO is running around town begging for cash to meet its next cash need. A reasonable degree of planning will make it much easier to not only tell *when* additional cash will be needed, but also *how much*, and what means can be used to obtain it.

To achieve this level of organization, the first step is to construct a cash forecast, which is covered in detail in Chapter 11, ''Cash Management and Consolidation.'' With this information in hand, you can determine the approximate amounts of financing that will be needed, as well as the duration of that need. This information is of great value in structuring the correct financing deal. For example, if the company is expanding into a new region and needs working capital for the sales season in that area, then it can plan to apply for a short-term loan, perhaps one that is secured by the accounts receivable and inventory purchased for the store in that region. Alternatively, if the company is planning to expand its production capacity through the purchase of a major new fixed asset, it might do better to negotiate a capital lease for its purchase, thereby only using

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the new equipment as collateral and leaving all other assets available to serve as collateral for future financing arrangements.

Besides this advanced level of cash flow planning, a company can engage in all of the following activities in order to more properly control its cash requirements and sources of potential financing:

- *Maximize the amount of loans using the borrowing base.* Loans that use a company's assets as collateral will offer lower interest rates, since the risk to the lender is much reduced. Be very careful about allowing a lender to attach all company assets, especially for a relatively small loan, since this leaves no collateral for use by other lenders. A better approach is to argue a lender into accepting the smallest possible amount of collateral, preferably involving specific assets rather than entire asset categories. The effectiveness of this strategy can be tracked by calculating the percentage of the available borrowing base that has been committed to existing lenders. Also, if the borrowing base has not yet been completely used as collateral, then a useful measurement is to determine the date on which it is likely to be fully collateralized, so that the planning for additional financing after that point will include a likely increase in interest costs.
- *Line up investors and lenders in advance.* Even if the level of cash planning is sufficient for spotting shortages months in advance, it may take that long to find lenders willing to advance funds. Accordingly, the CFO should engage in a search for lenders or investors as early as possible. If this task is not handled early on, then a company might find itself accepting less favorable terms at the last minute. The effectiveness of this strategy can be quantified by tracking the average interest rate for all forms of financing.
- *Minimize working capital requirements.* The best form of financing is to eliminate the need for funds internally, so that the financing is never needed. This is best done through the reduction of working capital, as is described later in the sections devoted to accounts receivable, accounts payable, and inventory reduction.
- *Physically sweep or notionally pool cash accounts.* If a company has multiple locations and at least one bank account for each location, then it is possible that a considerable amount of money is lingering unused in those accounts. By working with its bank, a CFO can automatically sweep the contents of those accounts into a single account every day, thereby making the best use of all on-hand cash and keeping financing requirements to a minimum.

BANK RELATIONS

Part of the process of obtaining financing involves the proper care and feeding of one's banking officer. Since one of the main sources of financing is the bank with which one does business, it is exceedingly important to keep one's assigned banking officer fully informed of company activities and ongoing financial results. This should involve issuing at least quarterly financial information to the officer, as well as a follow-up call to discuss the results, even if the company is not currently borrowing any funds from

the bank. The reasoning behind this approach is that the banking officer needs to become comfortable with the CFO and also gain an understanding of how the company functions.

Besides establishing this personal relationship with the banking officer, it is also important to centralize as many banking functions as possible with the bank, such as checking, payroll, and savings accounts, sweep accounts, zero balance accounts, and all related services, such as lockboxes and online banking. By doing so, the bank officer will realize that the company is paying the bank a respectable amount of money in fees, and so is deserving of attention when it asks for assistance with its financing problems.

The CFO should also be aware of the types of performance measurements that bankers will review when they conduct a loan review, so that they can work on improving these measurements in advance. For example, the lender will likely review a company's quick and current ratios, debt/equity ratio, profitability, net working capital, and number of days on hand of accounts receivable, accounts payable, and inventory. The banking officer may be willing to advise a company in advance on what types of measurements it will examine, as well as the preferred minimum amounts of each one. For example, it may require a current ratio of 2:1, a debt/equity ratio of no worse than 40 percent, and days of inventory of no worse than 70. By obtaining this information, a company can restructure itself prior to a loan application in order to ensure that its application will be approved.

Even by taking all of these steps to ensure the approval of financing, company management needs to be aware that the lender may impose a number of restrictions on the company, such as the ongoing maintenance of minimum performance ratios, the halting of all dividends until the loan is paid off, restrictions on stock buybacks and investments in other entities, and (in particular) the establishment of the lender in a senior position for all company collateral. By being aware of these issues in advance, it is sometimes possible to negotiate with the lender to reduce the amount or duration of some of the restrictions.

In short, a company's banking relationships are extremely important, and must be cultivated with great care. However, this is a two-way street that requires the presence of an understanding banking officer at the lending institution. If the current banking officer is not receptive, then it is quite acceptable to request a new one, or to switch banks in order to establish a better relationship.

ACCOUNTS PAYABLE PAYMENT DELAY

Though not considered a standard financing technique, since it involves internal processes, it is possible to deliberately lengthen the time periods over which accounts payable are paid. For example, if a payables balance of $1,000,000 is delayed for an extra month, then the company has just obtained a rolling, interest-free loan for that amount, financed by its suppliers.

Though this approach may initially appear to result in free debt, it has a number of serious repercussions. One is that suppliers will catch on to the delayed payments in short order and begin to require cash in advance or on delivery for all future payments,

which will forcibly tell the company when it has stretched its payments too far. Even if it can stay just inside of the time period when these payment conditions will be imposed, suppliers will begin to accord the company a lesser degree of priority in shipments, given its payment treatment of them, and may also increase their prices to it in order to offset the cost of the funds that they are informally extending to the company. Also, if suppliers are reporting payment information to a credit reporting bureau, the late payments will be posted for all to see, which may give new company suppliers reason to cut back on any open credit that they would otherwise grant it.

A further consideration that argues against this practice is that suppliers who are not paid will send the company copies of invoices that are overdue. These invoices may very well find their way into the payment process and be paid alongside the original invoice copies (unless there are controls in place that watch for duplicate invoice numbers or amounts). As a result, the company will pay multiple times for the same invoice.

Another concern is that any early payment discounts that a company could have obtained will be lost by following this late payment strategy. However, it is likely that a company finding itself in difficult cash-flow circumstances would have already skipped these early payments. Also, there are usually not many suppliers who offer discounts, so this would be only a small portion of accounts payable.

The only situation in which this approach is a valid one is when the purchasing staff contacts suppliers and negotiates longer payment terms, perhaps in exchange for higher prices or larger purchasing volumes. If this can be done, then the other problems just noted will no longer be issues.

Thus, unless payment delays are formally negotiated with suppliers, the best use of this financing option is for those organizations with no valid financing alternatives, who essentially are reduced to the option of irritating their suppliers or going out of business.

ACCOUNTS RECEIVABLE COLLECTION ACCELERATION

A great deal of corporate cash can be tied up in accounts receivable, for a variety of reasons. A company may have injudiciously expanded its revenues by reducing its credit restrictions on new customers, or it may have extended too much credit to an existing customer that has no way of repaying it in the short term, or it has sold products during the off-season by promising customers lengthy payment terms, or perhaps it is in an industry where the customary repayment period is quite long. Given the extent of the problem, a company can rapidly find itself in need of extra financing in order to support the amount of unpaid receivables.

This problem can be dealt with in a number of ways. One approach is to offer customers a credit card payment option, which accelerates payments down to just a few days. Another alternative is to review the financing cost and increased bad debt levels associated with the extension of credit to high-risk customers, and eliminate those customers who are not worth the trouble. A third alternative is to increase the intensity with which the collections function is operated by using automated dunning letter (and fax) generation software, collections software that interacts with the accounts

receivable files, and ensuring that enough personnel are assigned to the collections task. Finally, it may be possible to reduce the number of days in the standard payment terms, though this can be a problem for existing customers who are used to longer payment terms.

The reduction of accounts receivable should be considered one of the best forms of financing available, since it requires the acquisition of no debt from an outside source.

CREDIT CARDS

A large company certainly cannot rely on credit cards as a source of long-term financing, since they are liable to be canceled by the issuing bank at any time. Moreover, they are not inexpensive, because credit card rates consistently approach the legal interest limits in each state. Furthermore, they may require someone's personal guarantee. Nonetheless, the business literature occasionally describes accounts by small business owners who have used a large number of credit cards to finance the beginnings of their businesses, sometimes using cash advances from one card to pay off the minimum required payment amounts on other cards. Given the cost of these cards and the small amount of financing typically available through them, this is not a financing method that is recommended for any but the most risk-tolerant and cash-hungry businesses.

EMPLOYEE TRADE-OFFS

In rare cases, it is possible to trade off employee pay cuts in exchange for grants of stock or a share in company profits. However, a company in severe financial straits is unlikely to be able to convince employees to switch from the certainty of a paycheck to the uncertainty of capital gains or a share in profits from a company that is not performing well. If this type of change is forced on employees, then it is much more likely that the best employees will leave the organization in search of higher compensation elsewhere. Another shortfall of this approach is that a significant distribution of stock to employees may result in employees (or their representatives) sitting on the board of directors. In short, this option is not recommended as a viable form of financing.

FACTORING

Under a factoring arrangement, a finance company agrees to take over a company's accounts receivable collections and keep the money from those collections in exchange for an immediate cash payment to the company. This process typically involves having customers mail their payments to a lockbox that appears to be operated by the company, but that is actually controlled by the finance company. Under a true factoring arrangement, the finance company takes over the risk of loss on any bad debts, though it will have the right to pick which types of receivables it will accept in order to reduce its risk of loss. A finance company is more interested in this type of deal when the size of

each receivable is fairly large, since this reduces its per-transaction cost of collection. If each receivable is quite small, the finance company may still be interested in a factoring arrangement, but it will charge the company extra for its increased processing work. The lender will charge an interest rate (at least 2 percent higher than the prime rate), as well as a transaction fee for processing each invoice as it is received. There may also be a minimum total fee charged, in order to cover the origination fee for the factoring arrangement in the event that few receivables are actually handed to the lender. A company working under this arrangement can be paid by the factor at once, or can wait until the invoice due date before payment is sent. The later arrangement reduces the interest expense that a company would have to pay the factor, but tends to go against the reason why the factoring arrangement was established, which is to get money back to the company as rapidly as possible. An added advantage is that no collections staff is required, since the lender handles this chore.

A similar arrangement is accounts receivable financing, under which a lender uses the accounts receivable as collateral for a loan and takes direct receipt of payments from customers rather than waiting for periodic loan payments from the company. A lender will typically only loan a maximum of 80 percent of the accounts receivable balance to a company, and only against those accounts that are less than 90 days old. Also, if an invoice against which a loan has been made is not paid within the required 90-day time period, then the lender will require the company to pay back the loan associated with that invoice.

Though both variations on the factoring concept will accelerate a company's cash flow dramatically, it is an expensive financing option, and so is not considered a viable long-term approach to funding a company's operations. It is better for short-term growth situations where money is in short supply to fund a sudden need for working capital. Also, a company's business partners may look askance at such an arrangement, since it is an approach associated with organizations that have severe cash flow problems.

FIELD WAREHOUSE FINANCING

Under a field warehousing arrangement, a finance company (usually one that specializes in this type of arrangement) will segregate a portion of a company's warehouse area with a fence. All inventory within it is collateral for a loan from the finance company to the company. The finance company will pay for more raw materials as they are needed, and is paid back directly from accounts receivable as soon as customer payments are received. If a strict inventory control system is in place, the finance company will also employ someone who will record all additions to and withdrawals from the secured warehouse. If not, then the company will be required to frequently count all items within the secure area and report this information back to the finance company. If the level of inventory drops below the amount of the loan, then the company must pay back the finance company the difference between the outstanding loan amount and the total inventory valuation. The company is also required under state lien laws to post signs around the secured area, stating that a lien is in place on its contents.

Field warehousing is highly transaction intensive, especially when the finance company employs an on-site warehouse clerk, and so is a very expensive way to obtain funds. This approach is only recommended for those companies that have exhausted all other less-expensive forms of financing. However, lenders typically do not require any covenants in association with these loans, giving corporate management more control over company operations.

FLOOR PLANNING

Some lenders will directly pay for large assets that are being procured by a distributor or retailer (such as kitchen appliances or automobiles) and be paid back when the assets are sold to a consumer. In order to protect itself, the lender may require that the price of all assets sold be no lower than the price the lender originally paid for it on behalf of the distributor or retailer. Since the lender's basis for lending is strictly on the underlying collateral (as opposed to its faith in a business plan or general corporate cash flows), it will undertake frequent recounts of the assets and compare them to its list of assets originally purchased for the distributor or retailer. If there is a shortfall in the expected number of assets, the lender will require payment for the missing items. The lender may also require liquidation of the loan after a specific time period, especially if the underlying assets run the risk of becoming outdated in the near term.

This financing option is a good one for smaller or underfunded distributors or retailers, since the interest rate is not excessive (due to the presence of collateral).

INVENTORY REDUCTION

A terrific drain on cash is the amount of inventory kept on hand. The best way to reduce it, and therefore shrink the amount of financing needed, is to install a manufacturing planning system, for which many software packages are available. The most basic is the material requirements planning system (MRP), which multiplies the quantities planned for future production by the individual components required for each product to be created, resulting in a schedule of material quantities to be purchased. In its most advanced form, MRP can schedule component deliveries from suppliers down to a time frame of just a few hours on specific dates. If its shop floor planning component is installed, it can also control the flow of materials through the work-in-process (WIP) area, which reduces WIP inventory levels by avoiding the accumulation of partially completed products at bottleneck operations. Understandably, such a system can make great inroads into a company's existing inventory stocks. A more advanced system, called manufacturing resources planning (MRP II), adds the capabilities of capacity and labor planning, but does not have a direct impact on inventory levels.

The just-in-time (JIT) manufacturing system blends a number of requirements to nearly eliminate inventory. It focuses on short equipment setup times, which therefore justifies the use of very short production runs. This, in turn, keeps excessive amounts of inventory from being created through the use of *long* production runs. In addition, the

system requires that suppliers make small and frequent deliveries of raw materials, preferably bypassing the receiving area and taking them straight to the production workstations where they are needed. Furthermore, the production floor is rearranged into work cells, so that a single worker can walk a single unit of production through several production steps, which not only prevents WIP from building up between workstations but also ensures that quality levels are higher, thereby cutting the cost of scrapped products. The key result of this system is a manufacturing process with very high inventory turnover levels.

The use of inventory planning systems to reduce inventory levels and hence financing requirements is an excellent choice for those organizations already suffering from a large investment in inventory, and that have the money and the time to install such a system. The use of MRP, MRP II, and JIT will not be of much help in alleviating short-term cash-flow problems, since they can require the better part of a year to implement and several more years to fine-tune.

LEASE

A lease covers the purchase of a specific asset, which is usually paid for by the lease provider on the company's behalf. In exchange, the company pays a fixed rate, which includes interest and principal, to the leasing company. It may also be charged for personal property taxes on the asset purchased. The lease may be defined as an *operating lease*, under the terms of which the lessor carries the asset on its books and records a depreciation expense, while the lessee records the lease payments as an expense on its books. This type of lease typically does not cover the full life of the asset, nor does the buyer have a small-dollar buyout option at the end of the lease. The reverse situation arises for a *capital lease*, where the lessee records it as an asset and is entitled to record all related depreciation as an expense. In the latter case, the lease payments are split into their interest and principal portions and recorded on the lessee's books as such.

The cost of a lease can be reduced by clumping together the purchases of multiple items under one lease, which greatly reduces the paperwork cost of the lender. If there are multiple leases currently in existence, they can be paid off and released through a larger single lease, thereby obtaining a lower financing cost.

The leasing option is most useful for those companies that only want to establish collateral agreements for specific assets, thereby leaving their remaining assets available as a borrowing base for other loans. Leases can be arranged for all but the most financially shaky companies, since lenders can always use the underlying assets as collateral, and rarely impose any other financing restrictions. Also, there is no issue with disposing of unneeded equipment at the end of a lease, since this is handled by the lender. Furthermore, future operating lease payments are not listed on the balance sheet as a liability.

However, unscrupulous lenders can hide or obscure the interest rate charged on leases so that less financially knowledgeable companies will pay exorbitant rates. Also, a company is obligated to make all payments through the end of a lease term, even if it no longer needs the equipment being leased.

LINE OF CREDIT

A line of credit is a commitment from a lender to pay a company whenever it needs cash, up to a present maximum level. It is generally secured by company assets, and for that reason bears an interest rate not far above the prime rate. The bank will typically charge an annual maintenance fee, irrespective of the amount of funds drawn down on the loan, on the grounds that it has invested in the completion of paperwork for the loan. The bank will also likely require an annual audit of key accounts and asset balances to verify that the company's financial situation is in line with the bank's assumptions. One problem with a line of credit is that the bank can cancel the line or refuse to allow extra funds to be drawn down from it if the bank feels that the company is no longer a good credit risk. Another issue is that the bank may require a company to maintain a compensating balance in an account at the bank; this increases the effective interest rate on the line of credit, since the company earns no interest on the funds stored at the bank.

The line of credit is most useful for situations where there may be only short-term cash shortfalls or seasonal needs that result in the line being drawn down to zero at some point during the year. If one's cash requirements are expected to be longer term, then a term note or bond is a more appropriate form of financing.

LOANS

There are many types of loans, each one intended for a different situation, such as short or long duration, variable or fixed interest rates, those involving greater lender control over the entity, and so forth. This section sets forth the various loan options available to the CFO.

Asset-Based Loans

A loan that uses fixed assets or inventory as its collateral is a common form of financing by banks. Loans may also be issued that are based on other forms of collateral, such as the cash surrender value of life insurance, securities, or real estate. The bank will use the resale value of fixed assets (as determined through an annual appraisal) and/or inventory to determine the maximum amount of available funds for a loan. If inventory is used as the basis for the loan, a prudent lender will typically not lend more than 50 percent of the value of the raw materials and 80 percent of the value of the finished goods, on the grounds that it may have to sell the inventory in the event of a foreclosure and may not obtain full prices at the time of sale. Lenders will be much less likely to accept inventory as collateral if it has a short shelf life, is customized, is so seasonal that its value drops significantly at certain times of the year, or if it is subject to rapid obsolescence.

Given the presence of collateral, this type of loan tends to involve a lower interest rate. Also, lenders typically do not require any covenants in association with these loans, giving corporate management more control over company operations. However, the cost of an annual appraisal of fixed assets or annual audit by the bank (which will be charged to the company) should be factored into the total cost of this form of financing.

Also, lenders require frequent reports on the status of underlying assets—sometimes as much as once a day for accounts receivable and once a week for inventory.

Bond

A bond is a fixed obligation to pay, usually at a stated rate of $1,000 per bond, that is issued by a corporation to investors. It may be a *registered bond*, under which a company maintains a list of owners of each bond. The company then periodically sends interest payments, as well as the final principal payment, to the investor of record. It may also be a *coupon bond*, for which the company does not maintain a standard list of bondholders. Instead, each bond contains interest coupons that the bondholders clip and send to the company on the dates when interest payments are due. The coupon bond is more easily transferable between investors, but the ease of transferability makes them more susceptible to loss.

Bonds come in many flavors. The following list provides short descriptions of the most common ones:

- *Collateral trust bond.* A bond that uses as collateral a company's security investments.
- *Convertible bond.* A bond that can be converted to stock using a predetermined conversion ratio. The presence of conversion rights typically reduces the interest cost of these bonds, since investors assign some value to the conversion privilege. See the "zero coupon convertible bond" for a variation on this approach.
- *Debenture.* A bond issued with no collateral. A subordinated debenture is one that specifies debt that is senior to it.
- *Deferred interest bond.* A bond that provides for either reduced or no interest in the beginning years of the bond term, and compensates for it with increased interest later in the term. Since this type of bond is associated with firms having short-term cash flow problems, the full-term interest rate can be high.
- *Floorless bond.* A bond whose terms allow purchasers to convert it to common stock, as well as any accrued interest. The reason for its "death spiral" nickname is that bondholders can convert some shares and sell them on the open market, thereby supposedly driving down the price and allowing them to buy more shares, and so on. If a major bondholder were to convert all holdings to common stock, the result could be a major stock decline, possibly resulting in a change of control to the former bondholder. However, this conversion problem can be controlled to some extent by including conversion terms that only allow bondholders to convert at certain times or with the permission of company management.
- *Guaranteed bond.* A bond whose payments are guaranteed by another party. Corporate parents will sometimes issue this guarantee for bonds issued by subsidiaries in order to obtain a lower effective interest rate.
- *Income bond.* A bond that only pays interest if income has been earned. The income can be tied to total corporate earnings, or to specific projects. If the bond terms indicate that interest is cumulative, then interest will accumulate during nonpayment periods and be paid at a later date when income is available for doing so.

- *Mortgage bond.* A bond offering can also be backed by any real estate owned by the company (real property mortgage bond), or by company-owned equipment (equipment bond), or by all assets (general mortgage bond).
- *Serial bond.* A bond issuance where a portion of the total number of bonds are paid off each year, resulting in a gradual decline in the total amount of debt outstanding.
- *Variable rate bond.* A bond whose stated interest rate varies as a percentage of a baseline indicator, such as the prime rate. Be wary of this bond type, because jumps in the baseline indicator can lead to substantial increases in interest costs.
- *Zero coupon bond.* A bond with no stated interest rate. Investors purchase these bonds at a considerable discount to their face value in order to earn an effective interest rate.
- *Zero coupon convertible bond.* A bond that offers no interest rate on its face, but that allows investors to convert to stock if the stock price reaches a level higher than its current price on the open market. The attraction to investors is that, even if the conversion price to stock is marked up to a substantial premium over the current market price of the stock, a high level of volatility in the stock price gives investors some hope of a profitable conversion to equity. The attraction to a company is that the expectation of conversion to stock presents enough value to investors that they require no interest rate on the bond at all, or at least will only purchase the bond at a slight discount from its face value, resulting in a small effective interest rate. A twist on the concept is a contingent conversion clause (or ''co-co'' clause), which requires the stock price to surpass the designated conversion point by some fixed amount before allowing investors to actually switch to stock, thereby making the conversion even more unlikely. This concept is least useful for a company whose stock has a history of varying only slightly from its current price, since investors will then see little chance to convert and so will place little value on the conversion feature, requiring instead a higher interest rate on the bonds.

There may be a bond indenture document that itemizes all features of the bond issue. It may contain restrictions that the company is imposing on itself, such as limitations on capital expenditures or dividends, in order to make the bond issuance as palatable as possible to investors. If the company does not follow these restrictions, the bonds will be in default.

A bond is generally issued with a fixed interest rate. However, if the rate is excessively low in the current market, then investors will pay less for the face value of the bond, thereby driving up the net interest rate paid by the company. Similarly, if the rate is too high, then investors will pay extra for the bond, thereby driving down the net interest rate paid.

A number of features may be added to a bond in order to make it more attractive for investors. For example, its terms may include a requirement by the company to set up a sinking fund into which it contributes funds periodically, thereby ensuring that there will be enough cash on hand at the termination date of the bond to pay off all bondholders. There may also be a conversion feature that allows a bondholder to turn in his or her bonds in exchange for stock; this feature usually sets the conversion ratio of bonds to stock at a level that will keep an investor from making the conversion

until the stock price has changed from its level at the time of bond issuance, in order to avoid watering down the ownership percentages of existing shareholders. In rare instances, bonds may be backed by personal guarantees or by a corporate parent.

There are also features that bondholders may be less pleased about. For example, a bond may contain a *call feature* that allows the company to buy back bonds at a set price within certain future time frames. This feature may limit the amount of money that a bondholder would otherwise be able to earn by holding the bond. The company may also impose a *staggered buyback feature*, under which it can buy back some fixed proportion of all bonds at regular intervals. When this feature is activated, investors will be paid back much sooner than the stated payback date listed on the bond, thereby requiring them to find a new home for their cash, possibly at a time when interest rates are much lower than what they would otherwise have earned by retaining the bond. The bondholder may also be positioned last among all creditors for repayment in the event of a liquidation (called a subordinated debenture), which allows the company to use its assets as collateral for other forms of debt; however, it may have to pay a higher interest rate to investors in order to offset their perceived higher degree of risk. The typical bond offering will contain a mix of these features that impact investors from both a positive and negative perspective, depending on its perceived level of difficulty in attracting investors, its expected future cash flows, and its need to reserve assets as collateral for other types of debt.

Bonds are highly recommended for those organizations large enough to attract a group of investors willing to purchase them, since the bonds can be structured to precisely fit a company's financing needs. Bonds are also issued directly to investors, so there are no financial intermediaries, such as banks, to whom transactional fees must be paid. Also, a company can issue long-maturity bonds at times of low interest rates, thereby locking in modest financing costs for a longer period than would normally be possible with other forms of financing. Consequently, bonds can be one of the lowest-cost forms of financing.

Bridge

A bridge loan is a form of short-term loan that is granted by a lending institution on the understanding that the company will obtain longer-term financing shortly that will pay off the bridge loan. This option is commonly used when a company is seeking to replace a construction loan with a long-term note that it expects to gradually pay down over many years. This type of loan is usually secured by facilities or fixtures in order to obtain a modest interest rate.

Debt-Equity Hybrid

Also known as an enhanced trust-preferred, this new type of financial instrument is intended to take advantage of the best aspects of both debt and equity. It does this by having an extremely long term, usually in the range of 50 years, which makes it look like equity. It makes regular payments to investors with a fixed interest rate, which makes it look like debt, but the issuer does not have to pay the interest if the company's creditworthiness falls below a preset limit (which makes it look like equity). The reason

for using this unusual mix of features is that the interest payments are deductible for tax purposes, while credit rating agencies treat portions of it as equity, which gives the issuer a better credit rating. It also allows an issuer to use the proceeds to buy back stock without significantly impacting its debt/equity ratio.

Though this complex financial instrument is great for the issuer, it can be dangerous for the investor, who could see all returns vanish during an economic downturn. Another risk is that the Internal Revenue Service has not yet issued a definitive ruling on the tax-deductibility of payments made by this type of financial instrument.

Economic Development Authority

Various agencies of state governments are empowered to guarantee bank loans to organizations that need funds in geographic areas where it is perceived that social improvement goals can be attained. For example, projects that will result in increased employment or the employment of minorities in specific areas may warrant an application for this type of loan. It is usually extended to finance a company's immediate working capital needs. Given these restrictions, an economic development authority loan is only applicable in special situations.

Long-Term Debt

There are several forms of long-term debt. One is a long-term loan issued by a lending institution. These loans tend to be made to smaller companies that do not have the means to issue bonds or commercial paper. To reduce the risk to the lender, these typically require the company to grant the lender senior status over all other creditors in the event of liquidation. This is a standard requirement, because the lender is at much greater risk of default over the multiyear term of the loan, when business conditions may change dramatically. If there is no way for a lender to take a senior position on collateral, then the company should expect to pay a much higher interest rate in exchange for dropping the lender into a junior position in comparison to other creditors. If the lender also wants to protect itself from changes in long-term interest rates, it may attempt to impose a variable interest rate on the company. However, if the lender simply creates the loan and then sells it to a third party, it may be less concerned with future changes in the interest rate.

A long-term loan nearly always involves the use of fixed payments on a fixed repayment schedule, which will involve either the gradual repayment of principal or else the gradual repayment of interest, with the bulk of the principal being due at the end of the loan as a balloon payment. In the latter case, a company may have no intention of paying back the principal, but instead will roll over the debt into a new loan and carry it forward once again. If this is the case, review the trend of interest rates and choose to roll over the debt to a new loan instrument at an earlier date than the scheduled loan termination date, when interest rates are at their lowest possible levels.

In summary, long-term debt is a highly desirable form of financing, since a company can lock in a favorable interest rate for a long time, which keeps it from having to repeatedly apply for shorter-term loans during the intervening years, when business conditions may result in less favorable debt terms.

Mezzanine Financing

If a company wishes to avoid an excessive loss of control, but wants to obtain financing for multiple years, it could consider the use of mezzanine financing. This is a form of debt that can have a term of up to ten years, commonly with larger principal repayments towards the end of the loan period, and which is obtained from a single lender. Mezzanine financing requires a relatively high interest rate, usually in excess of 10 percent, as well as warrants to purchase company stock that can bring the total cost of the debt to somewhere in the range of 15 to 20 percent. This form of financing is generally subordinate to an existing bank loan, and so is intended to provide additional debt financing beyond the comfort level of the primary lender.

Purchase Order Financing

A relatively rare form of debt financing can be obtained by using a customer purchase order as collateral. Under this approach, the lender advances funds to the company based on a proportion of the total amount of a purchase order received from a customer. The customer then remits payment directly to the lender, which extracts its principal and interest from the payment and forwards the remainder to the company.

Small Business Administration

The Small Business Administration (SBA) provides guarantees on small loans to small businesses. These loans tend to carry reasonable interest rates, because of the backup guarantee. However, the loans are issued by local lending institutions that must still pass their standard loan approval processes, so it is not that easy to obtain SBA loans if a company is in severe financial straits. The SBA tends to give guarantees to loans originating in economically depressed areas or where unemployment is high. For these reasons, SBA loans will only be available in a minority of situations, and not in sufficiently large amounts to cover many business needs.

Short-Term Debt

The most common type of business loan extended by banks is the short-term loan. It is intended to be repaid within one year. The short time frame reduces the risk to the bank, which can be reasonably certain that the business's fortunes will not fall so far within such a short time period that it cannot repay the loan, while the bank will also be protected from long-term variations in the interest rate.

The short-term loan is intended to cover seasonal business needs, so that the cash is used to finance inventory and accounts receivable buildup through the main selling season, and is then repaid immediately after sales levels drop off and accounts receivable are collected. It can also be used for short-term projects, such as for the financing of the production requirements for a customer project that will be repaid as soon as the customer pays for the completed work. For these reasons, the timing of repayment on the loan should be right after the related business activity has been completed.

Commercial paper is debt that is issued directly by a company, typically in denominations of $25,000. It is generally unsecured and can be sold in a public market, since it is not registered to a specific buyer. Interest rates are typically at or slightly below the prime rate. Commercial paper is not an option for smaller companies, since the cost of placing the paper, as well as its level of acceptance in the public markets, will limit its use to only the largest organizations.

In some cases, a company may obtain such a loan if it really needs a long-term loan but feels that it will obtain lower interest rates on long-term debt if it waits for interest rates to come down. However, this strategy can backfire if interest rates are on an upward trend, since a company will be at risk of large changes in interest rates every time that it pays off a short-term debt instrument and rolls the funds over into a new short-term loan.

MERCHANT CARD ADVANCES

Under a merchant cash advance program, the lender issues cash to the borrower, and then takes repayment in the form of a percentage of the borrower's credit card sales, through the credit card processing service. The loan is repaid once the lender recoups the principal, plus a premium. Because this transaction is characterized as the purchase and sale of future credit card receivables, rather than a loan, lenders sidestep local usury laws and charge what are, in effect, very high interest rates.

A merchant card advance can work for a company whose sales are declining, since there is no fixed payback requirement—repayments are based on a proportion of credit card sales, so the repayment requirement falls as sales decline. However, some merchant card advances include a *balloon date*, after which the lender has the right to demand full repayment of the loan.

This approach is most useful for smaller companies that cannot obtain financing by other means, and that have significant credit card sales volume (such as retail establishments).

PREFERRED STOCK

Preferred stock contains elements of both equity and debt, since it generally pays interest on the amount of funding paid in. However, the interest may be withheld on a cumulative basis by order of the board of directors, the shares do not have to be repaid, and they may be convertible to common stock. Also, the interest on preferred stock is considered a dividend under the tax laws, and so is not tax deductible. As a result, the cost of preferred stock tends to be higher than other forms of debt, and, if the stock is convertible, shareholders may find that their ownership has been diluted by the preferred shareholders who have converted their shares to common stock.

Preferred stock is a good solution for those organizations looking for a long-term source of funds without a requirement to make fixed interest payments on *specific* dates (since preferred stock dividends can be deferred). It is also useful for companies being forced by their lending institutions to improve their debt/equity ratios, but who do not

want to reduce the ownership percentages of their existing common stockholders through the infusion of new equity (only an option if the preferred shares are not convertible to common stock).

Preferred stock is becoming increasingly common as a form of purchase consideration for corporate mergers, due to the elimination of the pooling of interests accounting method. That approach used to require mergers to be paid for solely with common stock. With the demise of that approach to mergers, the fixed-income component of preferred stock makes it the equity of choice for acquirees. It is especially attractive for establishing a merger's tax-free status, since acquirees will still maintain a ''continuity of interest'' in the acquirer. However, the tax-free status may not be allowed by the IRS if the preferred stock can be redeemed in the short-term, since this reduces the ''equity attributes'' of the stock.

SALE AND LEASEBACK

Under this arrangement, a company sells one of its assets to a lender and then immediately leases it back for a guaranteed minimum time period. By doing so, the company obtains cash from the sale of the asset that it may be able to more profitably use elsewhere, while the leasing company handling the deal obtains a guaranteed lessee for a time period that will allow it to turn a profit on the financing arrangement. A sale and leaseback is most commonly used for the sale of a corporate building, but can also be arranged for other large assets, such as production machinery.

A sale and leaseback is useful for companies in any type of financial condition, for a financially healthy organization can use the resulting cash to buy back shares and prop up its stock price, while a faltering organization can use the cash to fund operations. It has the added advantage of not burdening a company's balance sheet with debt; furthermore, it puts cash back *into* the balance sheet, allowing a company to obtain additional debt. It is especially useful when market conditions make other forms of financing too expensive. Obviously, it is only an option for those organizations that have substantial assets available for sale.

SUMMARY

The previous discussion shows that there are a large array of approaches available to solve the problem of obtaining financing. For the reader's convenience, the various types of debt financing are summarized in Exhibit 13.1.

The best types of debt financing by far involve the reduction of a company's working capital needs through internal management and process-oriented streamlining techniques, thereby reducing or eliminating the need for any financing. Once this approach has been maximized, a company that properly forecasts its cash needs and then makes long-range plans for the procurement of financing in the required amounts will be in a much better position to obtain the lowest-cost financing, as opposed to those organizations that must scramble for funding at the last minute.

EXHIBIT 13.1 Summary of Debt Financing Types

Debt Financing Type	Features	Cost
Accounts payable payment delay	Short-term funding obtained by paying suppliers late	No direct cost, but impacts supplier relations
Accounts receivable collection acceleration	Short-term funding obtained by heightened collections activity and tighter credit policies	No direct cost, and one of the easiest sources of ready cash
Credit cards	Short-term funding, with small balances available per card	Very expensive, and may require personal guarantees
Employee trade-offs	Short-term funding based on exchanging employee wages for stock or profits	No immediate cost, but may lose employees, dilute investor shares
Factoring	Short-term funding based on accounts receivable	Expensive, but greatly accelerates cash flow
Field warehouse financing	Short-term funding based on inventory	Cost is somewhat higher than the prime rate, and may require detailed inventory tracking
Floor planning	Short-term funding based on retailer inventory	Cost is somewhat higher than the prime rate, and may require detailed inventory tracking
Inventory reduction	Short-term funding based on permanent inventory elimination	No credit cost, but requires better inventory planning and tracking systems
Lease	Medium-term funding that backs the purchase of specific assets	Cost can be hidden within lease agreement
Line of credit	Short-term revolving funding collateralized by a variety of assets	Cost is near the prime rate, but bank can refuse additional funding and it must be paid off in the short term
Loan, asset-based	Long-term funding with asset collateral	Cost is near the prime rate, but may require frequent reporting on collateral status
Loan, bond	Long-term funding based on obligations issued by the company	Cost varies based on market conditions and bond terms
Loan, bridge	Short-term funding used to carry a debt position until longer-term financing is found	Cost is near the prime rate, but secured by facilities
Loan, debt-equity hybrid	Very long-term funding, some equity features	Cost is near the prime rate
Loan, economic development authority	Short-term funding backed by the government in special social improvement situations	Cost is near the prime rate

(*continued*)

EXHIBIT 13.1 (*continued*)

Debt Financing Type	Features	Cost
Loan, long-term	Long-term funding issued by a lender	Cost is near the prime rate, but requires senior debt status and can involve balloon payments
Loan, mezzanine	Long-term funding that may include warrants	Cost is high when equity rights are added to the interest cost
Loan, purchase order	Short-term funding to support the working capital requirements of a specific purchase order	Cost is high, with significant administrative expenses
Loan, Small Business Administration (SBA)	Long-term funding from a lender, with an SBA guarantee	Cost is near the prime rate, but not usually available in large amounts
Loan, short-term	Short-term funding based on seasonal cash-flow needs	Cost is near the prime rate, but can require collateral
Merchant card advances	Short-term funding based on credit card sales volume	Extremely high cost
Preferred stock	Long-term funding from the sale of equity that carried a dividend	Higher cost, since dividends paid are not tax deductible, but improves debt/equity ratio
Sale and leaseback	Long-term funding from selling a building or major asset and leasing it back for a long period	Low cost, but requires a long-term ease commitment

CHAPTER FOURTEEN

14 Obtaining Equity Financing

A KEY FUNCTION OF the CFO is to acquire equity financing. This chapter is primarily concerned with the offering memorandum, which is the key document used by investors to determine if they wish to invest in a company. This memorandum is designed for private offerings; for more information on a public offering, refer to Chapter 15, ''Initial Public Offering.'' In addition, stock registration filings are described in Chapter 16, ''Reports to the Securities and Exchange Commission.''

Besides the offering memorandum, this chapter also covers the establishment of a valuation for the offering memorandum, as well as equity financing alternatives, such as swapping stock for expenses or cash, issuing stock warrants or shares, and private investments in public equity (PIPEs). Further, we cover the essential elements of a stock buyback, in case a company finds itself in the reverse situation of having more cash than it needs or wanting to increase earnings per share by reducing the number of shares outstanding. Finally, we address the use of Rule 144 to remove stock restrictions, and Rule 10b5-1 to sell stock in accordance with a predetermined plan.

In the first section, we briefly discuss the general features of common and preferred stock, which are relevant to the subsequent discussion.

TYPES OF STOCK

The owners of *common stock* are the true owners of the corporation. Through their share ownership, they have the right to dividend distributions, to vote on various issues presented to them by the board of directors, to elect members to the board, and to share in any residual funds left if the corporation is liquidated. If the company is liquidated, they will not receive any distribution from its proceeds until all creditor claims have been satisfied, as well as the claims of holders of all other classes of stock. There may be several classes of common stock, which typically have different voting rights attached to them; the presence of multiple types of common stock generally indicates that some

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shareholders are attempting some degree of preferential control over a company through their type of common stock.

Most types of stock contain a par value, which is a minimum price below which the stock cannot be sold. The original intent for using par value was to ensure that a residual amount of funding was contributed to the company that could not be removed from it until dissolution of the corporate entity. In reality, most common stock now has a par value that is so low (typically anywhere from a penny to a dollar) that its original intent no longer works.

Preferred stock comes in many flavors, but essentially is stock that offers a variety of incentives, such as guaranteed dividend payments and preferential distributions over common stock, to convince investors to buy them. The dividends can also be pre-configured to increase to a higher level at a later date, which is called *increasing rate preferred stock*. This is an expensive form of funds for a company, since the dividends paid to investors are not tax deductible as interest expense.

The dividends provided for in a preferred stock agreement can only be distributed after the approval of the board of directors (as is the case for dividends from common stock), and so may be withheld. If the preferred stock has a cumulative provision, then any dividends that were not paid to the holders of preferred shares in preceding years must be paid before dividend payments for any other types of shares. Also, some preferred stock will give its owners voting rights in the event of one or more missed dividend payments.

Because this stock is so expensive, many companies issue it with a call feature that states the price at which the company will buy back the shares. The call price must be high enough to give investors a reasonable return over their purchase price, or else no one will initially invest in the shares. Preferred stock may also be converted by the shareholder into common stock at a preset ratio, if the preferred stock agreement specifies that this option is available.

PRIVATE PLACEMENT OF STOCK

A company may find itself with an excessive proportion of debt in relation to its equity, or there is no way to obtain additional debt, forcing the CFO to go in search of equity. A private company accomplishes this through a private stock placement, where shares are sold to a limited number of individuals or business entities. Company management might be able to sell shares on an informal basis to friends and family, but this is at best a limited source of equity. When more equity is needed, the CFO must search outside this circle of acquaintances.

A formal private placement of stock might require the services of an investment banker whose connections are considerably more far-reaching than those of the CFO. A reputable investment banker will require an in-depth review of the company to ensure that it is an acceptable investment vehicle for potential investors. Next, the banker will work with the CFO to construct an offering memorandum, which describes the type and terms of stock to be offered, its price, the company, and how the company plans to use the funds. Details concerning an offering memorandum are described in the next

section. The offering memorandum will then be sent to a group of prospective investors, followed by investment meetings where the CEO and CFO make presentations to investors. If all goes well, the investment banker then coordinates a closing where the investors pay the company for the proffered stock.

Sounds easy? It is not. Finding the right investment banker who works well with the company is difficult, as is the writing of an offering memorandum (mostly the CFO's chore), while presentations require long preparation and role playing. And do not forget the investment banker's fee. This can vary substantially, but expect some variation on the *Lehman Formula,* which is 5 percent of the first million dollars raised, 4 percent of the second million, 3 percent of the third million, 2 percent of the fourth million, and 1 percent of all funds raised above that amount. For example, if an investment banker raises $5 million on behalf of the company, his fee will be $150,000. Investment banker fees have increased over the years, so fees higher than the Lehman Formula are common. In addition, sometimes bankers request a large number of warrants on the purchase of company stock, so they can take advantage of any potential increase in the company's value at a later date.

LAYOUT OF THE OFFERING MEMORANDUM

The offering memorandum is a crucial document that is the foundation of any successful effort to raise equity capital, since it contains all the information an investor needs in order to make an investment decision. A CFO will likely create such a document several times in his or her career, and so should be familiar with its content and general layout, which are described in detail in this section. The ten major components of the memorandum do not have to be addressed in the exact order or even in the format used here, but should be included somewhere in the document so that investors have a clear idea of the business, how it intends to use their money, and the general risks to which their funds will be subject. The general structure of the offering memorandum is to begin with contact information and an executive summary, which are the only parts many investors read; if the general concept does not interest them, they will not proceed past the summary. The next section covers the proposed offering and the rights to be accorded to investors. If an investor is interested in these terms, he or she will want to read more about the company, a description of which covers the remaining sections of the memorandum. The format of the memorandum, with selected textual examples for many sections, is as follows:

1. *Contact information.* If an investment banker is being used, then contact information should be restricted to the personnel of that entity. If not, then the CEO and CFO are the most common contacts to list in this section.
2. *Executive summary.* Many investors do not have time to wade through a large prospectus in order to determine a general level of interest in making an investment. Instead, they need a quick summarization of the offering, from which they can decide if a more in-depth review is in order. The summary should include the following elements:

a. *Proposed transaction.* Describe the amount of money needed, and the requested size of commitments from individual investors.
b. *Use of proceeds.* Point out the general uses to which the funds will be put, including the proportions assigned to each use.
c. *The exit.* Describe the range of possible exit strategies that the company is contemplating on behalf of its investors. Any discussion of timing should be extremely broad, so investors cannot claim reliance on a specific date.
d. *The company.* Briefly address the company's general activities and products or services offered. It is appropriate to include a table showing revenues and profits for the past few years.
e. *Customers.* Note the number of total customers, the distribution of revenues among them, and name some of the more prominent ones.
f. *The management team.* Generally describe the management team's experience level, such as ''the management team has a total of 128 years of experience in this industry.'' Do not get into individual resumes, which are listed later in the memorandum.

3. *Description of the offering.* This section contains the basic terms of the stock offering, including the minimum and maximum number of shares the company is willing to sell, the price per share, and other rights, which typically include:
   a. *Information rights.* These rights entitle investors to receive financial and related explanatory information, which usually includes audited annual results as well as unaudited quarterly results. Sample text is:

      > Investors will be entitled to receive, within 90 days following the fiscal year-end, audited annual financial statements accompanied by a general description of the company during the relevant period. Also, investors will be entitled to receive, within 45 days following the end of the quarter, unaudited quarterly financial statements accompanied by a description of material events during the relevant period.

   b. *Registration rights.* A common feature is for the company to include investor shares in any future public placement of stock, at the company's expense. This allows investors to ''piggyback'' their shares onto an offering initiated by the company. Sample text is:

      > In the event that the company proposes to register any of its equity securities under the Securities Act for sale in an underwritten public offering prior to the fifth anniversary of the Final Closing Date, the company would be obligated to permit any shares of Common Stock, upon request of the holders, to be included in the securities to be registered in such underwritten public offering; provided that the company shall not be required to include any holders' shares in such public offering unless such holders accept the terms agreed upon between the company and the underwriters selected by it, and then only in such quantity as will not, in the opinion of the underwriters, jeopardize the success of the offering by the company. The company will bear the expenses of the registration of the holders' shares, except any underwriting discounts and commissions.

c. *Demand rights.* Demand rights are similar to the piggyback rights just discussed, except that investors can demand of the company a separate public registration of their stock, which they will then have the right to sell to the general public. Sample text is:

> In the event that the company completes an initial public offering of its equity securities prior to the fifth anniversary of the Final Closing Date, the holders of a majority of the shares of Common Stock may, by written request, demand one time that the company file a registration statement under the Securities Act, and to use its best efforts to cause such registration statement to become effective with respect to such Common Stock, and all holders of Common Stock shall be entitled to participate ratably in such registration. The company will bear the expenses of registration of the holders' Common Stock, except any underwriting discounts and commissions, and will pay the reasonable fees and expenses of one legal counsel for the holders.

d. *Conversion rights.* The holder of preferred stock may want the right to convert his or her shares into common stock, which may result in a higher return on investment. Typical wording is:

> Each share of Preferred Stock will be convertible, at the holder's option, at any time into one share of Common Stock (subject to adjustment for stock splits, combinations and other similar events).

e. *Dividends.* Company management may feel that a better stock price can be obtained if it promises a dividend payment on the sale of preferred stock to investors. More commonly, management does not anticipate doing so (since it creates a liability), so the best approach is to clearly state that dividend payments are not planned. Typical wording is:

> There are no stated dividends. Dividends are payable when, as, and if dividends are declared and payable on the Common Stock out of funds legally available and in an amount equal to the amount which the Preferred Stockholders would have been entitled to receive if they had converted their Shares of Preferred Stock into Common Stock and had been holders of Common Stock on the record date for such dividends on the Common Stock.

f. *Voting rights.* If preferred stock is being issued, the voting rights may vary from those of the common shareholders, and so should be enumerated within the offering memorandum. These rights may include final approval of the issuance of any other classes of stock, the incurrence of additional debt, sale of the business or large assets, or any other actions that may reduce the value of the shareholders' investment or increase the level of financial risk of the business. Typical wording is:

> Any proposed sale of the company or the sale of substantially all of its assets shall require the approval of the holders of at least two-thirds of the Preferred Stock then outstanding.

g. *Liquidation preference.* A preferred shareholder may be entitled to a flat-fee payment in the event of a corporate liquidation, which can be a significant incentive to purchase the stock if the business is expected to be sold in the near term. Less commonly, preferred shareholders may be offered a liquidation preference on a payment scale that slides in proportion to the total sale price of the business. Typical wording is:

> In the event of a liquidation, dissolution, or winding up of the company, all holders of Preferred Stock will be entitled to receive a liquidating distribution equal to $_____ per share in preference to the Common Stock. Upon the payment of such liquidating distributions, the holders of the Preferred Stock will not be entitled to any further distribution from the Company.

h. *Preemptive rights.* Shareholders may want to avoid dilution of their ownership interests, in which case preemptive rights can be written into the stock agreement. These rights entitle existing shareholders to purchase enough shares in future stock issuances to ensure that they continue to retain the same percentage of ownership in the company. Typical wording is:

> In the event the company proposes to sell, or to grant rights or options to purchase, any shares of any class of capital stock or any securities convertible into or carrying rights or options to purchase any shares of any class of capital stock (collectively, ''Other Securities''), each holder of Preferred Stock shall have the preemptive right to purchase that number of such Other Securities as shall enable the holder to retain its then current pro rata equity ownership interest in the company on a fully diluted basis, and at a price not less favorable than the price at which such Other Securities are proposed to be offered by the company.

4. *Description of the company.* This description is meant to give an investor a general overview of a company's history, operations, and market positioning. It is not meant to be a lengthy essay, but rather, a succinct review. An example is:

> The company was founded in 2008, experiencing first-year sales of $5 million that have since grown to $25 million, with all sales in the motorized garden products market. The company now has 40 major distributors in the United States, as well as 12 retail locations in California, Oregon, and Washington. Its products are designed and manufactured in a single facility in Salt Lake City. The company retains a tight focus on developing niche gardening products of the highest quality for professional and serious hobbyist gardeners.

5. *Risk factors.* This is an extremely important part of the offering memorandum. Investors must be informed of a wide range of potential risks that could impact the company's success in using their money to achieve the goals stated in this memorandum. It is best to include every conceivable risk, thereby avoiding the potential for a later lawsuit on the grounds that investors were not fully informed.

The full list of potential risks should be preceded by the following general statement, in caps:

> ANY INVESTMENT IN THE COMPANY INVOLVES A HIGH DEGREE OF RISK AND ONLY PERSONS WHO CAN AFFORD TO SUSTAIN A TOTAL LOSS OF THEIR INVESTMENT SHOULD CONSIDER MAKING SUCH AN INVESTMENT. THERE CAN BE NO ASSURANCE THAT THE BUSINESS PLAN DESCRIBED HEREIN WILL BE COMMERCIALLY VIABLE. IN ADDITION, ACTUAL RESULTS OF OPERATIONS MAY REQUIRE SIGNIFICANT MODIFICATIONS OF ALL OR PART OF SUCH PLAN. PROSPECTIVE INVESTORS SHOULD CAREFULLY CONSIDER, AMONG OTHER FACTORS, THE FOLLOWING:

A sample of risks, with attendant sample text, is:

a. *Absence of dividends.* "The Company does not expect to declare or pay any cash dividends in the foreseeable future."
b. *Competitive risk.* "The Company will face competition in its chosen markets. There is no assurance that the Company can continue to compete successfully for business, or that Company products and services will be sold for a profit. Many potential competitors have substantially greater financial resources and significantly greater accumulated experience in marketing products."
c. *Dependence on key individuals.* "The success of the Company depends to a large degree on the knowledge, personal efforts, and ability of *(name)*, the loss of whose services may have a materially adverse effect on the Company."
d. *Dilution.* "In order to meet the projections set forth in the Financial Projections, the Company does not currently envision the need to raise additional capital or funds through the sale of equity securities or convertible debt instruments. If the Company is unable to achieve the requisite sales needed to achieve desired results within the required time frame, then the Company may attempt to raise additional rounds of private equity or convertible debt. In addition, the Company may determine it advisable to raise additional equity to support more rapid sales growth, product development, or other business needs. In any case, if the Company issues additional equity securities or convertible debt (and such securities were subsequently converted), investors who invest in the round contemplated within this document would sustain dilution, and said dilution may be substantial."
e. *Government contracting risks.* "Approximately _____% of the Company's total revenues are derived directly and indirectly from contracts with the government. Government contracts, by their terms, generally can be terminated at any time by the government, without cause, for the convenience of the government. In addition, all government contracts require compliance with various contract provisions and procurement regulations. The adoption of new or modified procurement regulations could adversely affect the Company or increase its costs of competing for or performing government contracts. Any violation (intentional or otherwise) of these regulations could result in the termination of such government contracts, imposition of fines, and/or debarment from the award of additional government contracts."

f. *Growth management.* ''The Company expects to experience a period of significant revenue growth, which will result in new and increased responsibility for management personnel and place significant strain on the Company's management, operating and financial systems, and resources. The Company's future success will depend to a significant extent on the ability of its current and future management personnel to operate effectively, both independently and as a group. There can be no assurance that the Company's personnel, systems, procedures, and controls will be adequate to support the Company's future operations.''

g. *Need for additional financing.* ''The Company may need additional financing to support its projected level of operations. No assurance can be given as to the availability of additional financing or, if available, the terms upon which it may be obtained. Any such additional financing will most likely result in dilution of an Investor's equity investment in the Company.''

h. *No public market for shares.* ''There is no public market for the Common or Series _____ Preferred Stock of the Company, and none will result from this offering. The sale of the _____ Stock is not being registered under the Securities Act of 1933, as amended (the ''Securities Act''), and the Shares may not be resold or otherwise transferred unless they are subsequently registered under the Securities Act and qualified under applicable state laws or unless exemptions from registration and qualification are available. Accordingly, purchasers may not be able to readily liquidate their investment.''

i. *Product liability.* ''The Company has not experienced any product liability claims to date. However, the sale and support of its products by the Company may entail the risk of such claims. A successful product liability claim brought against the Company could have a material adverse effect on the Company's business, operating results, and financial condition.''

j. *Risk of infringement.* ''The Company is not aware that it is infringing any proprietary rights of third parties. There can be no assurance, however, that third parties will not claim infringement by the Company of their intellectual property rights. Any such claims, with or without merit, could be time-consuming to defend, result in costly litigation, divert management's attention and resources, cause product shipment delays, or require the Company to enter into royalty or licensing agreements.''

k. *Technological change.* ''Certain intellectual property is proprietary to the Company. However, new developments are occurring and there can be no assurance that such developments will not render the Company's products obsolete.''

l. *Uncertainties regarding new business.* ''Although the Company has sold many of its products and services, there can be no assurance that the Company's products and services will continue to find market acceptance or will be saleable at a price that is profitable to the Company.''

m. *Uncertainty of future operating results.* ''Revenues are not predictable with any significant degree of accuracy. Accordingly, the Company believes that period-to-period comparisons of its operating results are not necessarily meaningful and should not be relied on as indications of future performance. Although the Company has recently experienced revenue growth, such growth should not be

considered indicative of future revenue growth, if any, or as an indication of future operating results. Failure by the Company, for any reason, to increase revenues would have a material adverse effect on the Company's business, operating results and financial condition.''

6. *Use of proceeds.* State in general terms the uses to which management plans to put the proceeds of the offering. Too much detail could cause legal problems later on, if investors sue for the return of their money on the grounds that the company has misappropriated funds. It is also important to note the types of investments in which the money will be placed until they are used. An example is:

> The principal purposes of this offering are to obtain additional working capital, to create a commercial product from existing technology, to bring these products to market, and to facilitate the Company's future entry into public equity markets. The Company expects to use the net proceeds of this offering for working capital and general corporate purposes. A portion of the net proceeds of the offering may also be used to acquire or invest in products, technologies, or businesses that broaden or enhance the Company's current product or service offerings. Pending such uses, the Company intends to invest the net proceeds in short-term, investment grade, and interest-bearing securities.

7. *Selected financial data.* A summary-level income statement and balance sheet should be included that shows company performance over at least the past three years, and preferably five. The level of summarization should be sufficient to group all of this information on a single page.
8. *Discussion of the business.* The intent of this section is to give investors a clear idea of what key success factors drive the business. This may include varying degrees of industry fragmentation, pricing or quality issues, as well as a discussion of the firm's product or service offerings. The discussion should include all key parts of the business, including the market in which the company operates, sales and distribution, legal issues, customers, and its investment in research. Possible areas to include in this section are:
   a. *Industry background.* Describe the general structure of the industry in which the company operates. If it crosses multiple boundaries, then describe the ones having primary impact on the company. The description can include the estimated total industry revenue, market segmentation, and key players. An example is:

> The land data market is an approximately $500 million market. It is composed of several thousand ground surveying firms, several hundred aerial surveying firms, about two dozen land database firms, and two major purveyors of software for geographical information systems. The bulk of the profits in the industry flow to the two software firms, whose products are in a monopoly position. The database firms tend to be quite small, with occasional regional consolidation resulting in mid-size entities that are soon bought by the major oil and gas companies. The land and aerial surveying firms have minimal barriers to entry, resulting in low price points and minimal profit margins.

b. *Products.* The memorandum should describe each major company product or service in a separate paragraph. It is not necessary to reveal sales by product—rather, the intent is to give investors a feel for the general areas in which products have been created, as well as their capabilities. An example is:

> The Lease Sale System provides a vastly improved approach to the tasks of researching and analyzing competitive Oil and Gas Lease Sale information. It combines a powerful search engine with government oil and gas lease sale information to enable the user to quickly identify areas of interest, track competitor trends, identify opportunities and potential partners, highlight overlooked parcels to acquire, and analyze costs of accruing prospective parcels. This product is designed for land professionals who nominate and acquire federal parcels, regularly attend government oil and gas lease sales, or expend time and effort to research and study oil and gas lease sale information.

c. *Customers.* This statement should summarize the type and number of customers, as well as identify the major customers. For example:

> The company has obtained business from a total of 240 customers during the past two years, of which 180 purchase services from the company at least once a month. Of the total amount of business, 20 percent is spread among the top five customers, with 28 percent among the total ten customers. The top ten customers in terms of dollar purchases from the company are as follows . . .

d. *SWOT analysis.* This acronym stands for the strengths, weaknesses, opportunities, and threats that the management team foresees. Each of these items should be listed in a table in summary format. Strengths should be paired with associated advantages, so investors can see how current strengths can be capitalized on. Weaknesses are similarly paired with curative actions, while opportunities are linked with harvesting strategies and threats are shown alongside defensive posturing. A sample SWAT analysis is shown in Exhibit 14.1.

e. *Sales and marketing.* This section should reveal the basic structure of the sales and marketing function, including the use of different sales channels and geographical distribution of the sales effort. An example is:

> The company uses multiple distribution channels, including a direct sales force, co-marketing relationships with software manufacturers, and value-added resellers. The sales staff compensation is primarily based on commissions, thereby keeping the company's fixed costs low. Sales are conducted in the western United States, with current planning for new sales efforts in the northern Midwest region.

f. *Teaming agreements.* If a company obtains significant sales from its teaming agreements, these should be stated. If there are teaming agreements but no significant results from them, this section can be omitted.

g. *Distribution.* If the company has obtained a competitive advantage through its distribution system, then this should be mentioned. An example is:

EXHIBIT 14.1 Strengths, Weaknesses, Opportunities, and Threats

Strengths →	**Associated Advantages**
• Knowledge base	• Competitive advantage
• The company's products and services provide a unique and compelling value proposition in targeted markets.	• High client return on investment and therefore high client retention.
• Broad application potential in several government and commercial markets with a total market potential of over $ _____ million.	• Excellent near- and long-term revenue growth potential.
• No direct competition in primary target markets.	• Noncompetitive access to large and potentially lucrative markets.
• Strong financial trend with multiyear history of solid revenue growth.	• Demonstrated market acceptance and company financial performance.
• Experienced and industry knowledgeable management team in place.	• Ability to identify opportunities with capability to deliver quality products in a profitable manner.
Weaknesses →	**Curative Action**
• Limited market size for existing products to current markets.	• Broadening of existing product capability to reach an expanded market by virtue of ease of access via the Internet and the addition of new products aimed at allied market segments.
• Limited number of employees to handle accelerated growth.	• New funding will allow for additional staffing.
• Limited resources	• Strategic marketing programs
Opportunities →	**Harvesting Strategies**
• The newly completed e-commerce capability greatly expands the market accessibility of the company's products from major companies into a much larger number of mid-size companies.	• Initiate marketing and public relations program aimed at mid-size companies in their respective markets.
• The expanded sales force will open additional opportunities in existing and allied markets.	• Hire experienced sales personnel to pursue new and existing markets.
• The impact of the new GSA contract is yet to be fully realized.	• Promote awareness of the GSA contract throughout the federal government.
• The recently signed teaming agreement with _____ provides access to millions of dollars in new business opportunities.	• Assign a business development manager to this partner and selectively pursue opportunities.
Threats →	**Defensive Posturing**
• Loss of one or more of the top employees could slow the progress of the company.	• The company has obtained a $1 million life insurance policy on each of its key employees, with benefits payable to the company.
• A competing product could be developed and released by another company.	• Being first to market with a high quality, effecient, and reasonably priced product has created a strong barrier to entry, which should allow the company to successfully defend its markets.
• Changes in the federal government's patent application laws could impact the amount of time over which the company will enjoy patent protection for its products.	• The company plans to hire additional legal staff in order to more vigorously pursue patent enforcement during the reduced period when are in effect.

> The company operates 1,450 retail stores throughout the North American region, which exceeds the retail locations of its nearest competitor by a factor of three. This allows the company to roll out new products into a much larger geographical area than any of its competitors.

h. *Employees.* Employees are a key factor, both positively and negatively, in any business. Be sure to state any employee problems, such as high turnover rates or the presence of unions, as well as factors that investors may feel are key to its success, such as the presence of a high proportion of Ph.D. employees on the research staff. An example is:

> The company's Michigan production facility is unionized. This facility produces 45 percent of the company's furniture products, so a work shutdown or slowdown in this plant would have a major impact on company revenues. Labor costs in this facility are approximately 15 percent higher than in the company's other production facilities.

i. *Intellectual property.* If a company has a significant investment in research and development, it should state the size of this effort, or the percentage of revenues that are allocated to this function. If there are a number of patents, they should be mentioned in general terms. The presence of trademarks or copyrights are generally not worth stating. An example is:

> In an industry where research and development expenditures are typically 2 percent of gross revenues, the company's allocation of 11 percent of gross revenues to this activity shows its strong commitment to the creation of innovative new products. This significant investment supports a development team of 200 scientists, who have generated 140 patents in the past three years.

j. *Competition.* This section is closely read by many investors. Be sure to note the company's position in the industry versus its primary competitors, noting market share when this information is available. Though speculative, it may be useful to project possible changes in market share as a result of likely structural changes within the industry. An example is:

> The industry in which the company operates is dominated by the eight largest oil and gas companies based in the Gulf Coast states, which extract roughly 45 percent of the oil and gas in the United States. This leaves a $120 billion share of the market that is split evenly between large independent drillers and much smaller ''mom and pop'' drilling operations that typically lease less than one thousand acres of land and operate fewer than ten wells. Recent improvements in oil extraction technologies make it likelier for the largest drillers to reenter smaller oil fields they had previously exited, thereby possibly increasing their share of the total market to 55 percent of the total.

k. *Regulatory issues.* If there is a modest chance that regulatory issues will impact the company, then they must be addressed in the memorandum. These issues can also be shifted to the ''risks'' section of the report. An example is:

> The recent Clean Air Act requires coal-burning utility plants to install clean air scrubbers in their smokestacks. Given the timelines under which these changes must be implemented, the company expects to incur capitalized costs of $150 million over the next three years in order to bring itself into compliance with this federal law.

l. *Facilities.* Investors generally assume that company premises are leased over a modest time period and at market rates. If this is not the case, such as with company ownership of facilities, unusually high or low lease rates, or an especially long lease term, then this information should be revealed. An example is:

> The company leases 50,000 square feet at $18.50 per square foot under a lease that expires in 12 years, with annual escalation clauses based on the Consumer Price Index.

9. *Management.* Investors will be extremely interested in this section of the memorandum, since they realize that the composition and experience of the management team are the key factors leading to company success. Investors will also be interested in any pay levels that depart substantially from current standards. Key disclosures are:
   a. *Resumes.* There should be a brief resume describing each key member of the management team, which should address their experience and education. A sample resume would be:

> Richard B. Smith, President and CEO: Mr. Smith is responsible for all operations of the Company. He has an MBA in finance from the University of Florida, as well as a BS in marketing from Iowa State University. Mr. Smith has demonstrated capabilities at officer-level executive positions in public and private corporations, including large multibillion-dollar corporate environments as well as smaller rapidly growing entrepreneurial environments. His previous experience includes: president of a farm cooperative, senior vice president of an insurance company, president of a plastic injection molding company, vice president of finance for a multibillion-dollar consulting company, and director of the strategic planning group for a multibillion-dollar shipping company.

   Expect investors to spend a considerable amount of time poring through the resumes of those management team members in key positions. They will be looking for a history of success in growing companies, while also looking for evidence of failure in the past. Canny investors may conduct independent inquiries about managers to verify what is stated in the offering memorandum.
   b. *Compensation.* The memorandum does not need to include compensation levels, but in the interests of full disclosure it is better to note all forms of compensation earned by key members of the management team. The format in Exhibit 14.2 could be used.
   c. *Employment agreements.* Investors want to know if there are any onerous payout requirements associated with employment agreements. If so, they must be disclosed. A sample disclosure is:

EXHIBIT 14.2 Sample Executive Compensation Table

Name	Salary	Bonus	Total
Smith, Richard (CEO)	$175,000	$50,000	$225,000
Doe, John (COO)	$155,000	$35,000	$190,000
Alvin, James (CFO)	$150,000	$25,000	$175,000
Done, Davis (CTO)	$150,000	$40,000	$190,000

> An employment agreement exists between the company and Mr. Smith. Under its terms, he is guaranteed one year of pay in the event of termination for any reason, as well as fully paid medical insurance for a period of 18 months.

10. *Benefits.* Investors are primarily interested in the additional compensation aspect of employee benefits, so do not bother to itemize other types of benefits, such as medical insurance or vacation time. There are three key items:
    a. *Stock option plans.* Investors want to know not only if there are many options outstanding that could potentially reduce the value of their shares, but also the proportion vested (indicating how many could be converted in the near future) and the names of the principal option holders. A sample table of options held is shown in Exhibit 14.3.
    b. *401(k) plans.* Investors are not interested in the general presence of a 401(k) plan, but rather, in the presence of a substantial funds-matching facility that could result in a substantial drop in profits. Consequently, the wording of a 401(k) plan description could be:

> The company offers a 401(k) plan to those of its employees who have been with the company for at least one year. At that time, the company offers a 6 percent match to any funds employees contribute to the plan, with immediate vesting. The company contributed a total of $153,000 in matching funds to the plan in the past year; based on budgeted staffing levels and the past history of employee participation rates, the company expects its matching expense to be in the range of $140,000 to $180,000 in the upcoming year.

EXHIBIT 14.3 Sample Option Holder Table

Option Holder	Total Options	Options Vested	Vesting in 1 Year	Vesting in 2 Years
Smith, Richard	525,000	175,000	175,000	175,000
Doe, John	148,000	0	50,000	50,000
Alvin, James	73,000	0	0	24,000
Done, Davis	50,000	50,000	0	0
All Others	210,000	129,000	41,000	40,000
Totals	1,006,000	354,000	266,000	289,000

EXHIBIT 14.4 Distribution of Prospective Bonus Payments

Name	Bonus Payment
Smith, Richard	$110,000
Doe, John	$ 60,000
Alvin, James	$ 30,000
Done, Davis	$ 80,000
Total	$280,000

c. *Bonus plans.* As was the case with 401(k) plans, investors are most interested in the potential impact that bonuses may have on profits. As a secondary issue, they are also interested in who may be receiving bonuses and the general nature of the plans. A sample text for this item is:

> The company operates two bonus plans. One is for the production staff, and pays out a maximum of $10,000 per month, based on reported levels of efficiency and the attainment of a minimum number of no-injury days. In the past year, payouts from this monthly pool were achieved in four months, resulting in a bonus expense of $40,000. The company expects similar bonus amounts to be paid out under the terms of this plan in the upcoming year.
>
> The second bonus plan is a management incentive plan that pays out a maximum of $280,000 at year-end if the management team meets both its revenue and profit targets for the full year. At this time, the management team expects to achieve this bonus. A distribution of prospective bonus payments under this plan could look like Exhibit 14.4.

ESTABLISHING A VALUATION FOR THE OFFERING MEMORANDUM

The offering memorandum includes a fixed price at which shares are being offered to investors, which implies that the company must establish a valuation for itself prior to issuing the memorandum. There are a number of methods available for making this determination, as noted in the following bullet points:

- *Comparables method.* In brief, this is the "what is everyone else worth?" method. The CFO determines the valuations of similar companies and assumes that the company is worth the same multiple of revenues. For example, if X Company's current stock price yields a total valuation of $200 million on sales of $40 million, then a CFO could apply its revenue multiple of 5 to company's sales of $3 million to arrive at a valuation of $15 million. This approach does not work as well if there are no public companies against which a valuation can be measured. Also, if a company has few sales, then comparisons to other measurements, such as the customer base, number or value of patents, measured natural resources, or new

products must be used. The resulting valuation for a private company may also suffer some discounting from a comparable generated from a public company, on the grounds that its shares are more difficult to sell. Investment bankers keep databases of the prices at which many privately held companies have sold, and so can give a good estimate of valid comparables.

- *Net present value (NPV) method.* Net present value was discussed in Chapter 9, ''Capital Budgeting.'' Discounting a company's cash flows is a valid valuation approach, but is of less use in cases where a company has not yet developed significant cash flows. For example, a company that has spent millions to develop a truly unique product would have no valuation under this approach up until the point when it begins selling it, even though the product may be quite valuable. Also, it is difficult to develop an accurate discount rate for the calculation of cash flows for a privately held company whose beta may be substantially different from that of a public company in the same industry. Further, the NPV method assumes a constant discount rate, which is not the case in highly leveraged buyout deals where rapid declines in the proportion of debt will result in a gradual increase in the cost of capital over time. For these reasons, it is best to develop a high-low NPV estimate using a range of discount rates, and then consider other factors, such as the comparables method, in narrowing down the valuation to a tighter valuation range.
- *Venture capital method.* This is a quick ''back of the envelope'' approach to deriving a valuation. First, the investor estimates a firm's value at the time of liquidation of the venture capitalist's shares. He then discounts this value back to the present using a target rate of return, which is high (40 to 50 percent). He then divides the amount of the proposed investment by the discounted value to determine his prospective ownership percentage in the company. He incorporates the impact of dilution from future rounds of financing by dividing the required final ownership percentage by the percentage of ownership subsequent to dilution. An example is shown in Exhibit 14.5.

The main disadvantage of this approach is the extremely high (and arbitrary) discount rate, which gives the investor an unusually high ownership percentage in a company.

Investment bankers tend to recommend a slightly lower valuation for the purposes of issuing stock on the grounds that this ensures a complete subscription of all shares offered. The fact that a stock offering was fully subscribed or (better yet) oversubscribed is a useful marketing tool for subsequent rounds of equity financing, and may therefore be worth the incremental loss in equity resulting from it.

SWAPPING STOCK FOR EXPENSES

Equity is frequently obtained in order to pay off short-term expenses. This is a two-step process of obtaining the equity from one party and then using the resulting cash to pay off suppliers. One can sometimes shortcut this process by issuing stock directly to suppliers in exchange for their services. Though it can be an effective way to eliminate debts, it also

EXHIBIT 14.5 Calculation of the Venture Capital Method

Assumptions	Venture Capital Valuation
Net earnings	$ 6,778,000
P/E multiple	15
Terminal value	$101,670,000
Discount rate	50%
Discounted terminal value	$ 45,186,667
Amount of proposed investment	$ 4,500,000
Required final percent ownership	10.0%
Additional percentages of firm to be sold in future rounds of financing	10%
Retention ratio	90.5%
Required current percent ownership	11.0%

sends a clear message to suppliers that the company is short on cash. Thus, this approach usually only works once—when suppliers have already sent their bills to the company and it responds by negotiating a stock payment in lieu of cash. If a company tries to convince suppliers in advance to take stock as payment, it is unlikely to have many takers.

SWAPPING STOCK FOR CASH

An unusual approach for a privately held company to obtain cash is to buy another company with stock, with the intent of shutting down or scaling back the acquiree and taking its cash. This approach is most common when a company has venture capital (VC) funding, and the VC wants to merge a failing company from its portfolio of investments into the acquirer.

The primary difficulty in such a case is the potential presence of hidden liabilities on the books of the acquiree that may make the acquisition much more expensive than the value of the acquired cash. Nonetheless, this is an option in a limited number of situations.

STOCK WARRANTS

A stock warrant is a legal document that gives the holder the right to buy a specific amount of a company's shares at a specific price, and usually for a limited time period, after which it becomes invalid. The stock purchase price listed on the warrant is usually higher than the market price at the time of issuance.

A stock warrant can be used as a form of compensation instead of cash for services performed by other entities to the company, and may be attached to debt instruments in order to make them appear to be more attractive investments to buyers. For example, a CFO may be interested in obtaining debt at an especially low interest rate, and attaches

stock warrants to a new bond offering in order to do so. Investors attach some value to the warrants, which drives them to purchase the bonds at a lower effective interest rate than would have been the case without the presence of the attached warrants.

A stock warrant is rarely sold on its own by a company in the expectation of receiving a significant amount of cash in exchange. Consequently, this is not a good approach for directly obtaining equity funding, but rather, is used to reduce the cost of other types of funding or to reduce or eliminate selected supplier expenses.

STOCK SUBSCRIPTIONS

Stock subscriptions allow investors or employees to pay a company a consistent amount over time and receive shares of stock in exchange. When such an arrangement occurs, a receivable is set up for the full amount expected, with an offset to a common stock subscription account. When the cash is collected and the stock is issued, the funds are deducted from these accounts and shifted to the standard common stock accounts.

Stock subscriptions can be arranged for employees, in which case the amount invested tends not to be large and is not a significant source of new equity financing. When it is used with investors, it typically involves their up-front commitment to make payments to the company as part of a new share offering, and so tends to occur over a short time period rather than involve small, incremental payments over a long time frame.

PRIVATE INVESTMENT IN PUBLIC EQUITY

A *private investment in public equity* (PIPE) involves the sale of a public company's equity to accredited private investors, usually at a discount of about 10 to 20 percent from the market price. Because a PIPE is a private investment, it does not require registration with the Securities and Exchange Commission, can be completed quickly, and involves less administrative expense than would be the case for a large public offering. Since stock is sold in large blocks under this method, a company tends to gain larger, more long-term investors, especially if the issuing company sells the shares directly, and so can select which investors it wants. A variation on the standard PIPE agreement is the *registered direct deal*, where shares are registered in advance with the Securities and Exchange Commission and then marketed to a small group of investors who are typically restricted from reselling the shares for a specific period of time. This approach is more valuable to investors, who are assured of having registered shares before they buy the shares.

However, some PIPE agreements also require a company to pay out additional shares if its stock price falls within a certain time period, which can result in a considerable level of ownership dilution for other investors. It may also be necessary to sweeten the PIPE deal with warrants or a variety of conversion options that are highly favorable to the investor. Another problem arises when an investment bank is used to find investors, since the company no longer has control over who is buying its shares.

The investor pool might have short-term cash-out expectations. This last problem can be handled to some extent by forcing investors to sign agreements declaring they will not sell their shares for a certain period of time.

The worst-case scenario is when the PIPE agreement grants more shares to investors when the common stock price declines. When manipulated by short selling, a company may find that its share price declines precipitously, requiring more stock to be issued, followed by more short selling, and so on, until the company's ownership shifts to the PIPE investors. This is known as a *death spiral* PIPE. To avoid this problem, the PIPE agreement should specify a floor price below which no further shares of compensatory stock will be issued to investors.

BUYING BACK SHARES

This chapter is about obtaining equity financing. However, sometimes a company's stock price drops so low that it becomes advantageous to do the reverse and buy back shares. By doing so, a company can reduce the number of shares outstanding without impacting its reported income, thereby increasing its earnings per share. One would then expect the price of the remaining outstanding shares to increase.

Unfortunately, this logic does not always hold. The underlying logic of a share buyback is that an increase in earnings per share should increase the value of the company and therefore the price of all remaining shares. However, the company must use cash to buy back outstanding shares, so cash flow declines as a result of this action, and a reduction in cash flow reduces the value of a company. Also, a share buyback announcement sends a signal to investors that a company has no better use for its money, which may lead them to believe that the company's future prospects are bleak. This is a particular concern when company managers sell their shares back to the company as part of the general buyback program, which sends a clear signal to investors that the management team does not feel the share price can go any higher. Thus, a good approach to retaining the value of all remaining stock after a buyback is to inform the market that the management team is not allowing the company to buy back *any* of its shares.

One situation in which earnings can be expected to rise as a result of a buyback is when debt is acquired and the proceeds are used to buy back shares. By doing so, company management swaps high-cost equity for lower-cost debt, and also obtains the tax deduction associated with interest expenses. However, this approach should only be used if there is clearly enough future cash flow to support the extra debt burden.

If management decides to buy back shares, it has the following three methods available for doing so:

1. *Buy shares through a tender offer.* The company sets a fixed price, typically somewhat above the current market rate, at which it is willing to buy back shares during a fixed time period of usually one month.
2. *Buy shares on the open market.* The company can buy back shares on the open market, but this approach is limited by SEC rules to one-quarter of the average daily

traded volume for the past four weeks on a rolling basis, so it can take a very long time to complete a large stock buyback.

3. *Buy shares through an auction.* Under this approach, shareholders can post the prices at which they will sell their shares back to the company and the number of shares they will sell at those prices. The company then selects those shares offered at the lowest prices until it has bought enough shares to meet its goal. This approach is described more fully in Chapter 15, ''Initial Public Offering.''

The auction approach is the most cost-effective way to buy back large quantities of shares, since the prices paid tend to be lower than what a company will realize through a tender offer. For small volume buybacks, open market purchases are the most cost effective.

RULE 144

When an investor acquires restricted securities, the SEC requires that the securities be registered before the investor can sell them to another party. Restricted securities are typically issued through a private stock placement, Regulation D offering, or through an employee stock benefit plan. Also, if unrestricted securities are sold by a ''control'' person (one with the ability to either directly or indirectly influence management decisions), the securities become restricted once sold. These securities (except those issued by a control person) bear a restrictive legend, stating that the securities may not be resold unless they are registered with the SEC or exempt from its registration requirements.

Since resale of a security is critical to an investor's eventual liquidity, registration is an extremely important goal. However, registration can be both an expensive and prolonged task that many public companies avoid. Fortunately for investors, Rule 144 presents a possible exemption from the SEC's registration requirement.

Rule 144 allows for the resale of restricted securities if five conditions are met, which primarily involve the passage of time:

1. *Holding period.* If the securities issuer is subject to the periodic reporting requirements of the Securities Exchange Act of 1934 (e.g., issues 10-Q, 10-K, and other periodic reports—see Chapter 16), then the securities holder must hold the securities for at least six months. If the securities issuer is not reporting under the Exchange Act, then the holding period is one year.
2. *Adequate current information.* The securities issuer must be current in its reporting under the Exchange Act.
3. *Trading volume formula.* If the securities holder is an affiliate of the company (i.e., one who is in a control position), then the number of securities available for sale during any three-month period cannot exceed the greater of 1 percent of the outstanding shares of the same class being sold, or if the class is listed on a stock exchange or the NASDAQ, the greater of 1 percent of the average reported weekly trading volume during the four weeks preceding the investor's filing of a notice of

sale using a Form 144. If the securities issuer's stock is only traded over the counter, then only the 1 percent rule applies.

4. *Ordinary brokerage transactions.* If the securities holder is an affiliate, the securities sale must be handled as a routine trading transaction, where the broker cannot receive more than a normal commission. The seller and broker cannot solicit orders to buy the securities, other than to respond to various types of unsolicited inquiries.
5. *File a notice of proposed sale.* If the securities holder is an affiliate, the proposed sale must be filed with the SEC on a Form 144 if the sale involves more than 5,000 shares or the aggregate dollar amount is greater than $50,000 in any three-month period. The completed form shall be filed concurrently with either the placing with a broker of a sale order or the execution with a market maker of such a sale. The sale must take place within three months of filing the form, or else an amended notice must be filed. If the securities are admitted for trading on a national securities exchange, then one copy of the completed form must also be transmitted to the exchange.

If a securities holder has held the restricted securities for at least one year, and has not been a company affiliate for at least the past three months, then the securities can be resold without regard to the preceding conditions. If the company is fulfilling its reporting requirements under the Exchange Act, then the holding period is reduced to six months.

Once these conditions are met, the securities holder must have the restrictive legend removed before the securities can be sold. Legend removal must be done by the company's stock transfer agent, which will only do so with the written approval of the issuing company's counsel. This written approval is in the form of an opinion letter.

RULE 10b5-1

In a public company, a number of people may come into possession of material, nonpublic information about the company. When this happens, and they want to trade in the company's stock, they are unable to do so on the grounds that this can be construed as illegal insider trading. The SEC's Rule 10b5-1 gives them a defense against this insider trading liability by allowing them to create a *trading plan*. This trading plan creates a preestablished buying or selling program of a specific duration. With such a plan in place, an individual cannot be held liable under insider trading allegations. The seller must follow three key concepts in order to make use of this defense:

1. Before becoming aware of material, nonpublic information, the person entered into a binding contract to buy or sell the security, instructed another entity to conduct these trades for the person's account, and adopted a written plan for doing so.
2. The contract specified the amount of securities to be purchased or sold and the price at which and the date on which the trades were to occur, or included a formula for

determining the amount, price, and date of purchase or sale, and did not permit the person to subsequently alter the trading instructions in the plan.

3. The person must be able to prove that subsequent trades were pursuant to the contract. This proof is not possible if the person subsequently altered or deviated from the plan, or entered into a hedging transaction with respect to those securities.

The SEC has held that individuals are allowed to cancel a trading plan, on the grounds that they cannot be held liable for trades that have not yet occurred. Given

EXHIBIT 14.6 Sample investor trading plans

Option A: Sale based on price. The number of shares by trading price should be indicated as well as the range of trading dates.

Nbr of Shares	Trading Price		Trading Date Range	
	Minimum Price	Or at Market		

Option B: Sale based on timing. The number of shares to be traded within a certain window should be designated. Trades will be executed regardless of price, unless a minimum price is indicated.

Nbr of Shares	Minimum Trading Price	Trading Date Range	

Option C: Sale based on pricing and timing. The number of shares to be traded, at or above a minimum trading price (if possible) by a final trading date, are designated.

Nbr of Shares	Minimum Trading Price	Final Trade Date

All requests for trading activity must be received and accepted by ABC Brokerage a minimum of two business days before trading activity can begin.

Approved by Shareholder:

_____ _____

Name Date

Printed: _____

Approved by ABC Brokerage:

_____ _____

Name Date

Printed: _____

this SEC position, someone with access to insider information could cancel a plan in order to avoid selling stock at unusually low prices. It is also possible to enact a series of short-duration trading plans, so that a person could constantly adjust the plan to more closely match short-term market prices. These methods of trading plan management remove much of the downside risk from using a trading plan. However, they *increase* the risk of an allegation being raised that an employee is attempting to circumvent the intent of the Rule. Several policies noted later in the Policies section reduce the risk of such allegations.

The primary downside of adopting a trading plan is the reduced level of trading flexibility, since a person cannot precisely tailor his or her trades to daily market conditions.

Every brokerage uses its own 10b5-1 trading plan. The basic format of such plans adheres to the layout shown in Exhibit 14.6, where the person engaging in securities trading specifies the type of trading program to use (the exhibit assumes only share sales).

EXHIBIT 14.7 Trading Plan Agreement

This Rule 10b5-1 Trading Plan is adopted by [name] on [date], in order to establish a systematic program by which ABC Brokerage will use its reasonable best efforts to sell on the Seller's behalf the common stock of [company name].

Sales Program:

1. The Seller's sales program consists of either (1) vested options or (2) currently owned stock.
2. The Seller appoints ABC Brokerage as the Seller's agent to effect sales under this Plan.
3. The Seller agrees to pay ABC Brokerage the commissions stated later in this agreement.

Modification or Termination:

1. The Seller may modify this Plan only if the Seller represents in writing on the date of such modification that he or she is not aware of any material, nonpublic information regarding the Company, and that the modification is not being made as part of a scheme to evade Rule 10b5-1.
2. This Plan will terminate upon ABC Brokerage's receipt of notice of the Seller's death or petition for bankruptcy, or upon the termination date noted in the Plan, or two business days after ABC Brokerage receives written notice from the Seller to terminate the Plan.

Representations:

The Seller represents that he or she (1) is not aware on the Plan adoption date of any material, nonpublic information with respect to the Company, (2) is entering into the plan in good faith and not as part of a scheme to evade the prohibitions of Rule 10b5-1, (3) that the stock and options subject to this Plan are not subject to any liens or other impediments to transfer, (4) has not entered into a hedging transaction with respect to the Stock and will not do so during the term of this Plan, and (5) will not attempt to influence any sales of stock by ABC Brokerage pursuant to this Plan.

The Seller also represents that he or she will only sell stock outside of this Plan to the extent that the sales do not affect the amount of stock that may be sold under this Plan in compliance with the volume limitations of Rule 144.

In addition to the trading programs already noted, brokerages require that the person engaging in a trading plan sign a trading plan agreement, for which a summary-level version is shown in Exhibit 14.7.

SUMMARY

This chapter has dealt with the principal means of obtaining equity financing, which is a private placement via an offering memorandum. This option is available to far more companies than the public offering, which requires one to navigate the difficult initial public offering (IPO) process. IPOs are discussed in the next chapter.

PART FIVE

Publicly Held Company

CHAPTER FIFTEEN

15 Initial Public Offering

THE INITIAL PUBLIC OFFERING (IPO) is considered by many business owners to be the true sign of success—they have grown a business to the point where its revenue volume and profitability are large enough to warrant public ownership. However, the road to an IPO is both expensive and time consuming and requires significant changes to a company. This chapter describes the pluses and minuses of going public, as well as the steps required and costs to be incurred in order to achieve that goal.

REASONS TO GO PUBLIC

Though a management team may not say it, a major reason for going public is certainly to create a market for the shares they already own. Although these shares may not be available for sale for some time after the IPO (see the ''Restrictions on Stock in a Publicly Traded Company'' section), they will eventually be able to cash in their shares and options, potentially generating considerable profits from doing so. This reason is not publicized to the public, since they will be less likely to invest if they think the management team is simply cashing in and then leaving the business.

A slight variation on the wealth creation theme is that, by having a broad public market for their shares, original shareholders are likely to see a rise in the value of their shares even if they have no intention of selling the shares. The reason is that there is no longer a penalty for not having a ready market for the shares, which adds a premium to what the shares would have been worth if the company had remained privately held.

The same logic can be used as a tool for employee retention. A private company can issue options to its employees, but they are worth little to the employees unless there is a market in which they can sell the shares. By going public, a company may experience increased employee retention, since they wish to wait until their options vest so they can cash in the resulting shares for a profit.

The New CFO Financial Leadership Manual, Third Edition
by Steven M. Bragg

Going public is also useful from the estate planning perspective. If the owner of a private company dies, his or her heirs are frequently forced to sell the entire business in order to pay estate taxes (though with proper planning, life insurance payouts can be used instead). By taking the company public, the heirs are only forced to sell a portion of the company to pay estate taxes, at least leaving them some portion of the business as a residual.

From an operating perspective, going public gives a company a large pot of cash, which it can use to increase its competitiveness by increasing its asset base, improving marketing, hiring qualified staff, funding more product research, and so on. This can be such a competitive advantage that other companies in the same market segment may be forced to go public as well, just to raise enough funds to survive against their newly funded competitor.

Along the same lines, having publicly held shares allows a company to more readily include its shares in the purchase price of an acquisition. The acquiree is much more willing to accept this form of compensation, since it can sell the shares for cash to other investors. This is a powerful tool for some companies, who use it as the primary method for consolidating a group of small, privately held organizations within an industry.

From a financing perspective, going public lowers a company's cost of capital. The main reason is that investors are willing to pay a higher price for a company's stock than if the shares had been privately issued, since they can easily sell the shares. This premium can reduce the cost of capital by several percent. In addition, issuing shares to the public reduces the power that private investors previously may have had over the business, which could have included restrictions on operations, guaranteed dividend payments, or their prior approval of a potential sale of the business. Also, by being publicly held, it is much less time-consuming and expensive to raise funds through subsequent rounds of financing.

Another financing reason to go public is that new equity drastically lowers the proportion of debt to equity that is recorded on the corporate balance sheet, which is looked on with great favor by lenders. With the new equity in hand, a company can then ask lenders for a larger amount of debt, which they will be likely to lend until the amount handed over results in a significantly higher debt/equity ratio.

Thus, there are excellent wealth-creating, operating, and financing reasons to pursue an IPO. However, there are just as many reasons *not* to do so, which are itemized in the next section.

REASONS NOT TO GO PUBLIC

One of the best reasons for not going public is its cost. These costs are detailed in the following section, while the fees for trading on an exchange are listed later in the ''Trading on an Exchange'' section. In brief, a small company will be fortunate indeed to incur less than $0.5 million in up-front fees as part of an IPO. A large company can expect to pay many times these base-level expenses. Also, a company conducting a small offering will find that the proportional cost of obtaining equity funding is extremely high,

since the underwriter will charge a higher fee as a percentage of the amount raised in order to cover its costs and still earn a profit on the transaction.

Besides the initial cost of going public, there will be incremental increases in ongoing expenses. Most obviously, additional staff must be hired into the accounting department, whose job will be to keep up with all reports required by the Securities and Exchange Commission (SEC). In addition, the cost of directors' and officers' (D&O) insurance will skyrocket from what would have been paid when a company was privately held, assuming that the insurance can be obtained at all. The reason for this increase is the vastly increased pool of investors who may be tempted to sue the company on the grounds of material misstatements in its public comments (such as its registration statement for the IPO) in the event that the stock price drops. You can reasonably expect the cost of this insurance to increase by a factor of at least ten.

Another problem is that a smaller company with a modest market capitalization will have difficulty establishing a market for its stock. If it is too small, institutional investors (who like to buy and sell in large blocks of stock) will have minimal interest in making an investment. Because of this small market, a company's stock will be more likely to be subject to manipulation by a small number of investors, who can short-sell it to drive the stock down and then purchase large blocks of stock at a reduced price in order to gain some measure of control over the company.

Loss of control is possible unless the owner has retained a large proportion of corporate stock or unless a separate class of super voting stock has been established that gives the owners additional votes at shareholder meetings. Otherwise, outside investors can either buy up shares to create large voting blocks or band together to create the same result.

Information disclosure is yet another problem. In addition to the expense of having additional accounting staff to organize and report this information, there is the problem of disclosing information to a company's competitors, who only need to go to the SEC's Web site to access all required reports filed by the company. Though many pundits claim that the types of information disclosed will not harm the competitive posture of a public company, competitors can tell from its financial statements when it has put itself out on a financial limb by obtaining too much debt and can easily start a price war at this point that could cause the company to miss debt payments and therefore possibly go into bankruptcy.

A serious concern is the risk of shareholder class action lawsuits. These arise when there is a drop in the stock price that shareholders claim was the result of material misstatements in the registration statement or in any other information releases thereafter. These lawsuits are the reason for much more expensive D&O insurance. They will be targeted at the company as a whole, the corporate directors, whoever signed the registration statement, any experts who have given statements on behalf of the company, and its underwriters. The threat of lawsuits is one of the main reasons why IPO prices are frequently set somewhat low—there is less chance that the price will drop further, giving investors no reason to sue.

Another issue is the constant pressure from investors and analysts to show improved results every quarter. If a company were private, it could easily stand lower profits for a year or so while it ramped up new products and markets, but being public

makes this completely practical approach to growing a business more difficult to implement. Investors can attempt to unseat the management team by approving a different board of directors if growth rates are below their expectations. This issue can only be dealt with by continually informing the investing public of management's intentions for corporate growth so that investors will adopt a longer-term perspective.

Finally, the management team must understand that it now exists not to serve itself, but to serve the investing public. This major shift in focus calls for the elimination of unusually high compensation packages to the managers, as well as a commitment to increasing shareholder value over other objectives that may have been in vogue at the company prior to going public. Management may be uncomfortable with this paradigm shift, resulting in investor unhappiness with a perceived lack of attention to their needs by management.

There are so many negative reasons for going public that the managements of many perfectly good private companies have elected to stay away from the public markets. In addition, a great many companies that have gone public find these issues to be so burdensome that they have elected to take themselves private once again (which is addressed in Chapter 18, ''Taking a Company Private'').

COST OF AN IPO

Even a small company should expect to pay a minimum of $0.5 million to complete an IPO. This expense comprises a number of fees. Accounting and legal fees will consume the largest proportion of the total. Expect to pay at least $250,000 in legal fees. Audit fees will vary, depending on the size and complexity of the company, but certainly expect to pay at least three times the cost of a normal audit. This figure will increase if there are weak internal control systems that require the auditors to conduct more extensive audit tests. Further, printing costs for the prospectus will exceed $100,000 for all but the most ''Plain Jane'' documents, which will increase if a large number of revisions to the registration statement are required prior to printing. Also, initial filing fees with a number of government and regulatory bodies will likely consume a minimum of another $25,000.

In addition to these professional fees, the underwriter requires a significant payment that is based on the percentage of capital raised. The usual fee is in the range of 6 to 7 percent if an offering exceeds $20 million, with the percentage gradually increasing to as much as 15 percent of the total offering if it is quite small (in the $1 million to $3 million range). This cost can be reduced if a company accepts *best efforts* marketing by the underwriter, whereby it does not guarantee a full sale of the entire stock offering. In this case, the percentage fee will drop by 2 to 3 percent.

To make the situation worse, with the exception of the underwriter fee, most of these costs are incurred prior to the sale of any stock, so a company will be charged with the full expense of an IPO even if it is never completed. If the company withdraws from the IPO process, it must pay the fees incurred to that point by its underwriter, though this obligation is not usually required when the underwriter withdraws. Furthermore, if the IPO is merely delayed, many of the costs must be incurred again,

since the underlying operational and financial information on which the original offering was contemplated will have changed and must be reexamined by the lawyers and accountants.

PREPARING FOR THE IPO

Preparing for an IPO begins years before the actual event because the company must ''clean up'' prior to being presented to the investing public as a quality investment. The 12 steps to this housecleaning are as follows:

1. *Increase the competence of the management team.* The single greatest driver of corporate value is the quality of the management team. The owners must evaluate each management position and replace anyone who is not a team player, who does not drive efficiency and effectiveness throughout his or her department, and who does not have a tight strategic vision. Obtaining a manager who is well known at a national level can have a startling positive impact on the perceived value of the company as a whole. A key point is that a management team is not a one-man show. Investors need to see a competent supporting team that can readily take over the business in the event that one key manager dies or leaves the company.
2. *Create a reward system that is tied to strategy.* With the assistance of a compensation expert, design a reward system not only for the management team but also for the entire company that motivates them to focus their activities on those areas of the business that must be improved prior to the IPO (as described in all the points in this section). A key area is in the use of stock options, which can be issued several years prior to the IPO, when the company's value is substantially lower, resulting in significant gains for the recipients after the company goes public. To do this, one should set aside a large pool of stock for option conversions well in advance of the IPO in order to avoid having the new shareholders vote to create it.
3. *Obtain audited financials.* A reputable audit firm, and preferably one with a national presence, should audit the financial statements for the three years prior to the IPO. A review or compilation is not acceptable—these less expensive and less thorough forms of an audit will be rejected by the underwriter and the SEC when the registration statement is filed. Also, the auditor must be registered with the Public Company Accounting Oversight Board (PCAOB); audits completed by a nonregistered audit firm are not acceptable if a company plans to go public.
4. *Obtain a top securities law firm.* Though there may be little perceived need for a law firm well in advance of an IPO, it is useful to have such a firm examine the legal structure of the business and recommend changes that will properly position the company for the IPO. The need for this firm will rise dramatically during the IPO filing period, when its lawyers will review the company's prospectus and registration statement to ensure its completeness in accordance with SEC regulations. The lawyers will also channel all communications to and from the SEC in regard to both the initial registration and filings subsequent to the IPO.

5. *Strip out personal transactions.* The owners of a private business typically mesh their personal affairs with those of the company to a considerable extent. This can include keeping personal servants on the company payroll, having the company guarantee personal loans, loaning company money to their other businesses, and giving themselves inordinate levels of compensation. Stopping these practices can be quite difficult for an owner, whose overall level of compensation may drop substantially as a result.
6. *Show 25 percent annual growth.* Potential investors want to invest in companies with a record of strong growth, preferably at least 25 percent for each of the last few years. To create a business in line with these expectations, the business owner must close down or sell off those portions of the business that have no reasonable near-term prospect for growth, or (worse) those areas that are not only *not* growing, but that also require substantial cash infusions that could be better applied to higher-growth business segments.
7. *At least show breakeven profitability.* Investors understand that extra expenses must be incurred in order to ramp up sales, so they are not looking for inordinate profit levels in addition to high sales growth rates. However, there should be no losses appearing on the income statement for the past few years, since this would imply an inability by management to control costs, which brings into question the viability of the entire business model. This may also require a business to switch away from some tax-reduction strategies that it may have pursued as a private company in order to reduce its tax liability in favor of ensuring that some degree of profitability appears in the financial statements. Another alternative for ensuring some profitability is a tighter focus on cost controls, perhaps through the use of benchmarking or best practices implementations that are recommended by consultants.
8. *Fill the product pipeline.* Investors want to see a company that has established a clear competitive differentiation in the marketplace. This can be done through the advance funding of research and development projects that lead to the creation of a stream of new products. Since it takes a long time to create new products, the investment in this activity should begin far in advance of the IPO. It is particularly important not to appear like a ''one-hit wonder,'' with only a single winning product—be sure to create a process that reliably generates a continuing stream of products.
9. *Achieve critical mass.* In order to attract the attention of institutional investors, a company must have a market capitalization of at least $100 million. At this point, their participation will yield an active market for the stock, which can help to drive up the stock price. To reach this capitalization level, a company requires substantial revenue volume. Though roughly one-quarter of all public companies have revenues of less than $10 million, a much higher level is required to reach the crucial $100 million capitalization level. In order to do this, company management may need to concentrate on making acquisitions in the years leading up to the IPO, with the objective of building enough critical mass for the IPO.
10. *Expand high-growth segments.* Investors want to see a high rate of growth in areas where other public companies have been rewarded with high price/earnings (P/E)

multiples. To do this, the management team should be aware of P/E multiples for all companies in its market segment and allocate funding to those areas of the business that will reward the company with a high P/E multiple when it goes public. This capital allocation process is a difficult one, for the market can increase or decrease P/E multiples in a very short time period, depending on its perception of how "hot" a market segment may be.

11. *Pick an independent board.* Investors want a majority of the board of directors to be independent from the management team in order to place investor interests ahead of those of the management team. Though this group can be selected just prior to the IPO, it is better to do so at least a year in advance in order to give this group time to settle into their roles and learn about company operations.
12. *Protect owner wealth.* The owner of a company that has just gone public and who has sold some proportion of his or her shares to the public should expect to be paying a large amount of taxes. To reduce this tax burden, the owner can spend the previous few years gifting company stock to heirs, which can be given tax-free in blocks of $10,000 per year to each recipient (or $20,000 if the owner is married). In addition, if there are potential capital losses on any investments, this is the year in which they should be recognized in order to offset the gains from the IPO.

The main point of this section is to impress upon the CFO the need for advance planning for an IPO, preferably beginning a minimum of three years prior to it. Only by taking this long view to going public can a company position itself properly to achieve the maximum value for its shareholders, while minimizing the tax impact for its original owners.

FINDING AN UNDERWRITER

The process of becoming a public company begins with the search for a qualified underwriter who can lead the company through the maze of steps needed to go public. An underwriter is an entity that sells company shares either directly to individual investors or to institutional buyers, such as mutual fund managers. The largest underwriters operate on an international scale, while others have a regional focus or only concentrate their attention on specific market niches in which they have built up a considerable degree of expertise. A major underwriter may have built up a large retail brokerage operation as well as have significant institutional sales capacity, though some of these underwriters have elected to focus more on one of the two sales channels over the other.

It is better to use underwriters with an established reputation, despite their higher cost, because investors tend to trust them more, which can result in a higher stock price. Conversely, using an underwriter with a poor reputation (i.e., for drumming up the price of stocks that later crash) is much more likely to result in unhappy investors, potential investor lawsuits, and a thinly traded stock. It is also important to use an underwriter with a strong research capability and a commitment to use this resource to distribute information about the company and its industry to investors. A good way to determine

who has the best analyst coverage of an industry is to ask investors and other brokerage houses whose reports they feel are the most complete and accurate.

Underwriters have a tendency to sell shares to institutional investors, because these are sophisticated investors who buy in large volumes, thereby reducing the sales efforts of the underwriters. This can be a problem if a large percentage of the company's shares are being sold to the public, because institutional investors are much more likely to either gain control over the company or at least gain a formidable block of voting stock that can be used to influence the company's direction.

If an IPO is a small one, an underwriter may handle the entire issuance itself. However, it more commonly leads a team of underwriters as the managing underwriter if there is a substantial amount of stock to be sold to the public. It creates this syndication not only to spread its own risk in the transaction but also to ensure that shares are sold to a wide cross-section of the investing public, which is critical for creating a strong market for the company's stock.

A larger company with a strong track record will attract the attention of a number of underwriters who are eager to take it public. When selecting from among this group, one should look for a business with a strong reputation for successfully bringing new offerings to market, which can be easily discerned by reviewing the business press for the last few years. Another key factor should be its distribution capacity, since the company will want a broad range of investors, rather than a small number of powerful institutional investors. The underwriter should also be able to commit to the creation of a strong aftermarket in the company's stock, which can be verified by making reference calls to the CFOs of other companies that it has already taken public as the managing underwriter. These reference calls should include queries about the level of service provided, the level of underwriter expertise, the breadth of share placement among investors, and subsequent promotion through research reports. If the underwriter already employs an analyst for the company's industry, this is a strong indicator of the underwriter's commitment to an aftermarket. Further, ask if the analyst plans to issue regular research reports to the underwriter's clients about the company. Of particular concern should be the underwriter's history of bringing companies public as the *managing* underwriter, rather than as one of a large syndicate. If the underwriter has primarily been a syndicate member, this is a strong indication that it lacks experience in managing the IPO process.

Unfortunately, most companies are too small to attract a flurry of underwriter interest. Instead, they must work hard to attract the attention of just one or two. To do so, the owner should have already accomplished all of the long-range targets noted in the last section. In addition, the management team should construct a detailed business plan that dovetails with prior company results, while also showing exactly how it plans to use the cash received from the stock offering to achieve future growth and profitability. The plan should most certainly *not* describe any intent by management to sell off its shares, since this tells underwriters that they want to cash out of the company, potentially leaving investors to shift for themselves. This document should include a detailed description of all key members of the management team, since underwriters are well aware of the importance of a strong team. Further, the plan should itemize all risk areas and how the company plans to hedge those risks while

pursuing its growth plans. Above all, the plan must present a compelling story that will attract a quality underwriter.

If an underwriter is sufficiently interested in the company, it will conduct an exhaustive due-diligence process to verify that what the company says about itself is true. This is likely to include interviews throughout the company, a detailed analysis of all operations, company tours, and reference calls to company suppliers and customers. In particular, the underwriter will investigate the background of each key executive in detail to be sure that their published resumes are accurate. The underwriter must conduct this level of detailed review in order to protect itself in case problems arise after the IPO that it should have seen prior to the stock offering. If there is even a hint of the company trying to mislead the underwriter about material issues, the underwriter will walk away, so be certain to verify all information in the business plan prior to releasing it to the underwriter.

If the underwriter remains interested in the company after the due diligence phase, it will sign a letter of intent with the company. This letter outlines the following issues:

- *Type of agreement.* The letter will state if the arrangement with the underwriter will be a *firm commitment* deal or a *best efforts* deal. The firm commitment approach is used by most large underwriters and requires them to purchase a fixed number of shares from the company at a fixed price, which is discounted from the price at which they will then sell the shares to investors. This is the preferred approach, since a company will be guaranteed a fixed amount of cash. The alternative is a best efforts deal, under which the underwriter merely tries to sell as many shares as it can, and takes a commission on those shares it sells. This alternative does not guarantee a company any cash yet still requires it to meet with the various requirements of being a publicly held entity, so is much less preferable. A best efforts deal is most common when a company's prospects are considered sufficiently risky such that the underwriter is uncomfortable purchasing the entire stock offering and putting itself at risk of being unable to resell them.
- *Expenses.* The underwriter will outline the expenses it expects to charge the company. The largest portion of these costs will be a percentage of the stock offering. More information about this is listed in the earlier ''Cost of an IPO'' section. This is a good time for the CFO to consider swapping an issuance of warrants to the underwriter in exchange for a lower commission rate. Another significant cost listed in the agreement will be the legal expenses incurred by the underwriter for its legal counsel to review state *blue sky* laws to see how they apply to the offering. The CFO should insist on a cap to these expenses, which can be substantial. The underwriter may also require the company to pay for any out-of-pocket expenses incurred by the underwriter if the company withdraws from the IPO—if so, be sure to insert a maximum expense cap in the agreement. There should be no expense reimbursement requirement if the underwriter is the party who withdraws from the offering.
- *Overallotment option.* This option is another manner in which the underwriter can profit from a potentially lucrative stock offering. It allows the underwriter to purchase additional shares from the company, up to a specified maximum amount,

within a short time period following the IPO date. If the underwriter feels that it can sell additional shares at a high price, it will buy the extra shares from the company, sell them to investors, and pocket the difference. The overallotment option is usually acceptable to company management, unless the additional shares sold might potentially interfere with their control of the company.

- *Expected stock price.* The agreement will list a price at which the underwriter expects to sell the company's shares, though this is strictly a preliminary number that can vary considerably, depending on market fluctuations and the receptiveness of institutional investors to the proposed price during the subsequent road show.

During the period between when the company engages the services of an underwriter and 25 days after its securities begin trading, the company is in a so-called *quiet period*, when it should not issue any marketing statements or materials that could be construed as an attempt to promote the stock. For example, no projections about expected company performance should be issued. To avoid any chance of breaking the SEC's quiet period regulations, any company communications during this period should be cleared by legal counsel prior to release.

Once the letter of intent is signed by both parties, they jointly move forward into the IPO registration process, which is described in the next section.

REGISTERING FOR AND COMPLETING THE IPO

Registering for and completing the IPO process usually takes three to four months. The basic steps in the process are due diligence investigations of a company's operations and finances, followed by the creation of a registration statement, whose contents are then updated based on SEC comments. This is followed by a road show, final pricing of the stock, filing of the final prospectus with the SEC, and then closing the deal with the underwriter. The following discussion is based on a firm commitment deal with an underwriter. A best efforts deal differs from this discussion primarily in the length of time required to obtain payment from the underwriter, which may require two to three extra months following the registration effective date.

The due diligence process is conducted by the underwriter and is a vastly expanded version of the due diligence it went through when it was initially investigating the company. In this case, it will require outside auditors to comb the company's financial records at a level of detail significantly greater than a standard audit, and then issue a *comfort letter* to the underwriter, stating the additional procedures it completed at the request of the underwriter. These procedures usually relate to unaudited financial information that is included in the registration statement. The auditors send the comfort letter to the underwriter once the initial registration statement has been filed.

The registration statement is composed of a prospectus and additional information required by the SEC. The statement is the SEC's Form S-1, which is described in Chapter 16, ''Reports to the Securities and Exchange Commission.'' The prospectus portion of the statement is an overview of the company's operations and finances and is carefully designed to be a balance of marketing language intended to bolster the

stock and a tedious itemization of every conceivable risk to which the company is or may be subject, with the intent of avoiding liability in case the company's prospects sour after it goes public. It also includes all standard financial reports, such as the balance sheet, income statement, statement of cash flows, and shareholders' equity. It will also include interim financial statements if the registration statement is declared effective (more on that shortly) more than 134 days subsequent to the company's fiscal year-end.

The registration statement is then forwarded to the SEC, which usually takes about one month to review it, after which it issues a letter of comment containing required changes that must be added to the statement in order to bring it into compliance with SEC regulations. Their comments can include such issues as an expansion of risk disclosures, cross-referencing information within the prospectus, questions about the use of certain accounting policies, and adding information to support claims made. Once these changes are made in an amended filing, the SEC has the right to continue reviewing the document until it declares the statement to be effective.

The company must also submit the registration statement to the Financial Industry Regulatory Authority (FINRA), which wants to ensure that the underwriter's compensation is not excessive. The statement must also be sent to each state in which the company plans to offer its shares for sale, so they can verify that the offering meets individual state reporting requirements.

The prospectus portion of the registration statement is then sent to prospective investors. This *red herring* version of the statement may not yet have been approved by the SEC and will not include a final stock price, but will list a range within which the final price will fall. This version is used to educate investors in advance about the offering, but is not used to solicit the sale of stock. It is also sent to the syndicate of other underwriters that the primary, or *managing*, underwriter will assemble to help sell the stock.

After filing the registration statement and prior to its effective date, the CEO and CFO (sometimes accompanied by other members of management) go on a road show to visit a number of key institutional investors and analysts, where they make a sales pitch about the company but do not attempt to sell any shares. This is a physically exhausting process that typically lasts about two weeks. As an example of just one day in a typical road show circuit, the CEO of a Silicon Valley company boarded a private jet in San Francisco at 5 A.M. and flew to five cities across the United States, stopping for a one-hour presentation in each city (several being on the East Coast), before flying back to San Francisco—the same day. He did this for nine days in a two-week period. Preparing for the road show also requires long hours, frequently including training by speech coaches and even etiquette consultants.

While the management team is conducting the road show, its legal counsel will file an application with the stock exchange on which it wishes to be listed, while also selecting a registrar (who tracks all stock, pays out dividends of various types, and mails reports to shareholders) and a transfer agent (who handles the transfer of shares between parties) to handle subsequent stock-related issues. It will also submit filings in accordance with the securities laws of all states in which the company expects to sell shares.

Once the SEC is satisfied with all changes made to the registration statement, company management meets with the underwriter to set the final price of the stock. Price setting is part science and part art form. Ostensibly, the price should be based on a quantitative measure, such as the existing price/earnings multiple or price/revenue multiple for similar companies. Other operational issues may also be considered that will modify the price to some extent, such as backorder volume, sales trends, the proportion of expenses to sales, the quality of management, the outlook for the entire industry, the severity of current or potential competition, pending pollution issues, or the presence of valuable patents. However, the comments of institutional investors who were contacted during the road show will have a strong bearing on the final price. They are usually relied on to purchase a significant proportion of the company's stock, and if they show resistance to purchasing stock at a specific price, then the underwriter will recommend a price reduction. In addition, the underwriter will underprice the issuance slightly in order to ensure a complete sale of all shares offered to the public, while also giving it some grounds for avoiding a lawsuit in case the stock price later declines and investors claim that the initial price was too high. The extent of the underpricing tends to be greater during the IPO in comparison to secondary offerings, so management may want to consider selling slightly fewer shares at this time in order to avoid dilution.

Underwriters like to price IPO shares in the range of $10 to $20, on the grounds that this avoids penny stock status (which is $5 or less), and the perception that investors will be less likely to buy shares priced above $25. To achieve this range, the company may have to conduct either a stock split or a reverse stock split. For example, if the underwriter decides that a company's total valuation is $50 million and that the stock price will be $20, then there should be 2.5 million shares outstanding in order to achieve the designated price per share. If the company actually has 10 million shares outstanding, then it must conduct a four-for-one reverse stock split in order to bring the number of outstanding shares down to the required 2.5 million level.

The underwriter will also want to sell in excess of 1 million shares during the IPO, not only to create an active trading market for the stock, but also to meet the minimum outstanding shares rules of the stock exchanges (as noted further in the "Trading on an Exchange" section).

Once all parties agree to the stock price, this is included in the registration statement as an amendment along with the net proceeds by the company resulting from the offering and the underwriter's commission. The company then asks the SEC to declare the registration statement *effective*. This request is typically accompanied by a request to accelerate the SEC's standard 20-day waiting period between the filing date of the last amendment and the date when the registration is declared effective, which the SEC generally agrees to as long as the prospectus has already been sufficiently widely circulated to prospective investors in its "red herring" format. After the registration is declared effective, the company issues the prospectus to the investors who previously received the "red herring," as well as to any others who wish to review it.

The underwriter and the company will then sign a *lockup agreement*, under which management restricts itself from selling any company shares it owns for a minimum period, usually of at least a half-year.

Finally, at a closing meeting that usually takes place about one week after the registration effective date, the underwriter hands over payment for all shares proffered under the IPO offering in exchange for the share certificates. This delay of a few days is needed for the underwriter to collect cash from its investors, who will then receive the stock from the underwriter. The company is now officially a public entity.

ALTERNATIVES FOR SELLING SECURITIES

A traditional IPO may not be available to a company for a variety of reasons. Potential underwriters might think that a company's underlying technological prowess is too unproven to make a convincing case to potential shareholders. The same reasoning might apply to its rate of growth or the perceived quality of its management team. Or, the market might be saturated with other IPOs, so there is no room for another one without accepting an unreasonably low price. If any of these circumstances applies, a company may consider using the options listed in this section—an *open IPO* offering, reverse merger (the purchase of a shell corporation), or a SCOR offering.

Open IPO

One alternative to the traditional sale of stock through an underwriter is to use an open IPO auction. Under this approach, potential investors download a prospectus over the Internet from an underwriter that specializes in this type of offering. If they wish to bid on the shares, they open an account with the underwriter, select a bid price and the number of shares desired, and send the underwriter a check for that amount. This bid can be withdrawn at any time prior to the offering date. Based on the range of bids received, the underwriter then creates a public offering price at which share purchases will be accepted (which matches the price of the lowest bid received, below which all other bids exceed the number of shares to be offered). All investors bidding above this price will be issued their full share allocations, while those whose bids were below the price will be refunded their money. Those investors bidding the exact amount of the public offering price will receive some portion of their requested number of shares, depending on how many other investors requested shares at that price and how many shares are still available for sale. This approach tends to result in higher share prices, resulting in either more proceeds flowing to the company or fewer shares being sold (resulting in more control by the original shareholders).

For example, a company wishes to sell 1 million shares to the public. Investors bid for 500,000 shares at $14 each, while bids are also received for 300,000 shares at $13.50 and 600,000 at $12.00. Since the entire offering can be sold at a price of $12, this becomes the public offering price. All investors bidding at prices of $14 and $13.50 per share will receive their full allocations of shares and will pay $12 per share. Of the 600,000 shares bid at $12, investors will receive only one-third of their requested amounts, since this will result in 1 million shares being sold, which was the original target.

Reverse Merger

An initial public offering is extremely expensive and requires a great deal of management time to initiate. An alternative that uses less of both resources is the reverse merger. With this approach, a company buys the shell of a company that has already gone public and merges itself into the shell. A corporate shell is an entity that has suspended ongoing operations, and which generally has few assets.

The cost of a reverse merger ranges from $100,000 to $300,000, plus the cost to obtain the shell corporation (which will vary widely, depending on the value of its assets and the presence of any liabilities or other legal issues). A reverse merger can be completed in as little as 45 to 90 days, which allows management to rapidly return to a focus on operational issues.

Another advantage of the reverse merger is that the shell company has usually sustained losses in the past, resulting in a sometimes sizable net operating loss (NOL) that can be used to offset the earnings of the acquiring company. However, the use of these NOLs will likely be restricted if there is a change in control of the shell, which is the usual scenario.

A disadvantage is that a shell might have unsettled legal claims that could be brought against the acquiring company. A considerable amount of due diligence is needed to locate potential or existing claims, which also increases the cost of the reverse merger.

Another problem is that the shell may not have kept up its required filings with the SEC, in which case they must be brought up to date before the reverse merger can be completed.

Further, the acquiring company must issue some stock to the shareholders of the shell corporation to pay for the acquisition, possibly as much as 20 percent of all shares, resulting in dilution of the ownership interests of shareholders in the acquiring company, and possibly of the value of their stock.

A very likely additional problem is that the shell's original shareholders may sell their shares following the reverse merger, resulting in a sudden decline in the traded stock price. This issue can be mitigated by incorporating timing restrictions on stock sales into the acquisition agreement.

Finally, companies that go public through reverse mergers tend to have only modest revenues and growth prospects, and so are ignored by stock analysts and brokers who might otherwise increase investor interest in the stock.

To summarize the key issues, the reverse merger is an attractive alternative to the IPO, but the potential for hidden liabilities requires in-depth due diligence to ensure that the acquiring company does not become mired in lawsuits and the settlement of other liabilities.

SCOR

Another alternative is to file for a small corporate offering registration (SCOR). This is a simplified registration used by companies that want to raise up to $1 million within a 12-month period. You must complete the 50-question Form U-7 and file it with the state securities commission for the state in which the company operates. The

form requires no review by the SEC, but must be reviewed by the state securities commission. This form can then be used as a prospectus by the company in its search for investors (since this approach does not normally involve an underwriter). This approach can be taken by any entity incorporated in either the United States or Canada, except for investment or public companies.

The SCOR approach falls under the restrictions of Rule 504 of the SEC's Regulation D, which governs private and limited stock offerings. Rule 504 allows a company to sell shares to an unlimited number of investors, who do not have to meet any accreditation standards. It also allows the company to advertise the stock offering and does not restrict the resale of stock in any way. In short, the SEC is unusually liberal in its regulation of small stock offerings in the size range of a SCOR.

Although the SCOR approach is far less expensive than an IPO, it carries other risks and uncertainties. First, a company using this approach may try to avoid expenses by not using legal counsel. This approach may lay it open to potential shareholder lawsuits due to some unexpected oversight in the registration and solicitation process. The obvious mitigation approach to this risk is to bring the best legal counsel into the SCOR filing process as soon as possible and to solicit its advice at every step of the offering. Also, the management team must sell the shares to investors, an activity that may not fall within its range of expertise. Finally, due to the lack of an underwriter, there will not be a ready market for subsequent sales of the stock, making investment liquidations a chancy affair for investors.

TRADING ON AN EXCHANGE

Though a company has successfully completed an IPO, its stock is not yet traded on a stock exchange. If a company is not listed on an exchange, its securities will be designated as over-the-counter (OTC) stocks and will most likely appear in the pink sheets. The ''pink sheet'' name is derived from the color of stock price sheets that were distributed by the National Quotation Bureau starting in 1904, and that served as a pricing reference for stock trades through local stock dealers. This market is a dangerous one for investors, who must conduct their own research into prospective investments and are at considerable risk of losing their entire investments in companies that may be in distressed circumstances, or whose stocks are so thinly traded that they are subject to large price swings. Consequently, avoiding OTC status by enrolling in a stock exchange is considered highly advantageous.

Gaining entry to a stock exchange requires an application to it, in which the company states that it meets or exceeds all entry requirements of the exchange. These requirements are not just financial—for example, the major stock exchanges all require a listed company to have an audit committee, usually with at least a majority of the directors being independent of the company. If the exchange accepts an application, the company's shares are listed on the exchange and an exchange representative is assigned to the company in order to advise it on exchange rules and how to market itself most effectively to investors through the exchange. This service comes at a cost—both an initial listing fee and an ongoing annual charge.

The highest-volume stock exchanges in the United States are the American Stock Exchange (Amex), NASDAQ Stock Market (NASDAQ), and New York Stock Exchange (NYSE). Each of the three major exchanges have differing requirements for entry, with the Amex and NASDAQ Capital Market being the easiest to enter and the NYSE being the most difficult. An increasingly popular alternative is the Alternative Investment Market (AIM) of the London Stock Exchange, which allows companies to avoid many of the onerous rules required by U.S. exchanges.

AMERICAN STOCK EXCHANGE

The Amex targets smaller companies with modest market capitalizations. It is easily the most aggressive of the three exchanges in attracting new listings. Its staff regularly scans new stock registrations that are filed with the SEC, and contacts registrants about listing with them. They also send their staff out to prospects to discuss the advantages of listing. Thus, a micro-cap company is far more likely to be petitioned by the Amex than any other exchange.

The Amex provides a number of services to each listing company:

- *Specialist.* The key Amex benefit is an assigned trading specialist. The specialist is obliged, to the extent reasonably practical, to purchase and sell a listed company's securities for their own account in order to help maintain an orderly market, with minimal price changes between transactions. Listed companies have direct access to their specialist, who can tell them about the market activity in their shares.
- *Liaison.* The Amex assigns a liaison, called an Amex Issuer Services Director (ISD) to every listed company. The ISD assists each company in obtaining services provided by the Amex.
- *Strategy seminars.* The Amex makes available a pair of strategy seminars each year to listed companies. These seminars focus on topics in investor relations, investment banking, corporate governance, equity trading, and regulatory issues.
- *CEO dinners.* The Amex coordinates a series of CEO dinners throughout the country that allow CEOs to network with their counterparts in other Amex-listed companies.
- *Investor relations audit.* The Amex conducts a review of a listed company's communication materials, develops an investor fact sheet, and provides buy side and sell side contacts.

The Amex's listing requirements are designed to attract smaller companies with relatively small floats. A company can qualify under any one of the four standards shown in Exhibit 15.1 in order to be accepted for listing on the Amex.

In addition, there are stock distribution guidelines, which are intended to ensure that a sufficiently broad array of investors own a company's stock. They are shown in Exhibit 15.2.

A close reading of these listing guidelines reveals that the Amex is extremely amenable to listing almost any company, and it has created many variations on its

EXHIBIT 15.1 American Stock Exchange Initial Listing Guidelines

Requirements	Standard 1	Standard 2	Standard 3	Standard 4
Pretax income	$750,000			
Market capitalization			$50 million	$75 million or
Total assets				$75 million and
Total revenue				$75 million
Market value of public float	$3 million	$15 million	$15 million	$20 million
Minimum price	$3	$3	$2	$3
Operating history		2 years		
Stockholders' equity	$4 million	$4 million	$4 million	

acceptance criteria in order to attract the largest possible number of companies. For example, only Standard 1 even requires reported income; in all other cases, the Amex does not require evidence of profitability. Also, three of the standards do not require an operating history, so short-lived entities can very quickly become listed. Standard 4 was specially designed for telecommunications companies, which rarely report profits, but which have considerable revenue and assets. The only area in which the Amex has significant requirements across all standards is the market value of a company's public float. Thus, as long as a company has a sufficient volume of tradable stock, the Amex is interested in listing it.

Of some interest, the official Amex guidelines are literally ''guidelines.'' The Amex has been known to waive some listing requirements, so it is best to make inquiries, rather than to simply assume that certain initial listing standards are unattainable.

On an ongoing basis, a listed company must maintain a $1 million market value of public float. In addition, it must maintain $2 million in stockholders' equity if it has had losses in two of the most recent three years, or $4 million if it has had losses in three of the most recent four years, or $6 million if it has had losses in the five most recent fiscal years. If a company cannot satisfy these equity requirements, it can still remain on the Amex if it has

EXHIBIT 15.2 American Stock Exchange Stock Distribution Guidelines

Public stockholders	Option A: 800 Option B: 400 Option C: 400
Public float (shares)*	Option A: 500,000 Option B: 1,000,000 Option C: 500,000
Average daily volume	Option C: 2,000

*Public float is all shares not held directly or indirectly by any officer or director of a listed company, or by any other person who is the beneficial owner of more than 10 percent of the total shares outstanding.

a market capitalization of at least $50 million or total assets and revenue of $50 million each. The Amex does not have an ongoing minimum stock price requirement.

In short, the Amex is ideal for listing by smaller companies. Its main competition is the NASDAQ's Capital Market, which similarly caters to smaller entities.

OVERVIEW OF THE NASDAQ

NASDAQ stands for the National Association of Securities Dealers Automated Quotation. In brief, it is the largest electronic stock market in the United States. Being entirely electronic, it executes orders faster and at lower cost than most other stock exchanges. However, there is no assigned specialist who makes a market in a company's stock. This can result in somewhat greater stock volatility, as well as a larger relative spread (see the ''Comparing the Stock Exchanges'' section).

The NASDAQ operates the Market Intelligence Desk (MID), which monitors the activity of a listed company's stock. The IRO can contact the MID for updates about recent stock activity. This contact is through an MID Director, who is a predetermined point of contact for each company. In isolated instances, the MID may contact the IRO by phone or e-mail if there is unusual market activity.

The MID director arranges for additional services to its listing companies. These include a full-service corporate insurance broker, a research report service, and investor relations services. However, in most cases, a listed company will incur extra fees for these services.

NASDAQ Capital Market

The NASDAQ operates a stock exchange for smaller companies, called the NASDAQ Capital Market. This exchange competes with the American Stock Exchange.

A company can qualify under any one of the three standards shown in Exhibit 15.3 in order to be accepted for listing on the NASDAQ Capital Market. On an ongoing basis, a company must exceed one of the three standards shown in Exhibit 15.4 to continue to be listed on the exchange.

As was the case with the Amex, the NASDAQ Capital Market substantially reduces its continued listing requirements from the initial listing requirements, so that it is relatively easy to remain on the exchange.

NASDAQ Global Market

NASDAQ operates a stock exchange for larger companies, called the NASDAQ Global Market. This exchange competes with the New York Stock Exchange.

A company can qualify under any one of the three standards shown in Exhibit 15.5 in order to be accepted for listing on the NASDAQ Global Market.

In addition, an applicant must have either 450 round lot stockholders, or a total of 2,200 stockholders, and 1,250,000 publicly held shares.

On an ongoing basis, a company must exceed one of the two standards shown in Exhibit 15.6 to continue to be listed on the exchange.

EXHIBIT 15.3 NASDAQ Capital Market Initial Listing Standard

Requirements	Standard 1	Standard 2	Standard 3
Stockholders' equity	$5 million	$4 million	$4 million
Market value of publicly held shares	$15 million	$15 million	$5 million
Operating history	2 years		
Market value of listed securities		$50 million	
Net income from continuing operations (in the latest fiscal year or in two of the last three fiscal years)			$750,000
Publicly held shares	1 million	1 million	1 million
Bid price	$4	$4	$4
Round lot shareholders	300	300	300
Market makers	3	3	3

EXHIBIT 15.4 NASDAQ Capital Market Continued Listing Standards

Requirements	Standard 1	Standard 2	Standard 3
Stockholders' equity	$2.5 million		
Market value of listed securities		$35 million	
Net income from continuing operations (in the latest fiscal year or in two of the last three fiscal years)			$500,000
Publicly held shares	500,000	500,000	500,000
Market value of publicly held securities	$1 million	$1 million	$1 million
Bid price	$1	$1	$1
Round lot shareholders	300	300	300
Market makers	2	2	2

NEW YORK STOCK EXCHANGE

The NYSE specifically caters to the largest and wealthiest public companies in the world. It is considered prestigious to be listed on the NYSE. To keep this club exclusive, the NYSE has the toughest initial and continued listing standards of any exchange. Besides prestige, the main advantage of a NYSE listing is that some fund managers are only allowed to invest in NYSE-listed companies, so the pool of potential investors is quite large.

The NYSE hosts a number of virtual investor forums, which are Web conferences designed to provide investors with direct access to executives from companies listed on the NYSE. It also hosts industry-specific conferences, which the executives of NYSE-listed companies can attend.

EXHIBIT 15.5 NASDAQ Global Market Initial Listing Standards

Requirements	Standard 1	Standard 2	Standard 3
Pretax earnings	Aggregate $11 million in past three years, and $2.2 million in each of the past two fiscal years, and $0+ in past three years		
Cash flows		Aggregate $27.5 million in past three years, and $0+ in each of the prior three fiscal years	
Market capitalization (average over prior 12 months)		$550 million	$850 million
Revenue (previous fiscal year)		$110 million	$90 million
Bid price	$5	$5	$5
Market makers	3	3	3

The NYSE also assigns a client service team to each listed company, which fulfills the same role as the Amex's issuer services director and the NASDAQ's market intelligence desk director. Also, as was the case with the Amex, a newly listed company selects a specialist who is responsible for making a market in the company's stock.

The NYSE's listing requirements are designed to attract larger companies with significant market capitalizations and operating results. It requires minimum standards in two areas, which are stock distribution and financial results. Its stock distribution requirements are as follows:

EXHIBIT 15.6 NASDAQ Global Market Continued Listing Standards

Requirements	Standard 1	Standard 2
Stockholders' equity	$10 million	
Market value or Total assets/total revenue		$50 million or $50 million/$50 million
Publicly held shares	750,000	1.1 million
Market value of publicly held shares	$5 million	$15 million
Bid price	$1	$1
Round lot stockholders	400	400
Market makers	2	4

EXHIBIT 15.7 New York Stock Exchange Continued Listing Standards

Requirements	Earnings Standard	Cash Flow Standard	Pure Valuation Standard
Average closing price over a 30-day trading period	$1	$1	$1
Average market capitalization over a 30-day trading period	$75 million and	$250 million and	$375 million and
Total stockholders' equity	$75 million or		
Average market capitalization over a 30-day trading period	$25 million		
Total revenues for most recent 12 months		$20 million	
Total revenues for the most recent fiscal year			$15 million

- 400 round-lot stockholders, or
- 2,200 total stockholders and average monthly trading volume for the last six months of 100,000 shares, or
- 500 total stockholders and average monthly trading volume for the last 12 months of 1,000,000 shares.

An additional stock distribution requirement is to have 1.1 million public shares outstanding, with a market value of $100 million.

The NYSE also has multiple variations on its initial listing requirements relating to financial results:

- Aggregate pretax earnings over the past three years of $10 million, and a minimum of $2 million in each of the two most recent years, or
- Aggregate operating cash flow of $25 million over the last three years (only applicable for companies with at least a $500 million market cap and $100 million revenues during the most recent 12 months), or
- Revenues for the most recent fiscal year of at least $75 million, and a market capitalization of at least $750 million.

On an ongoing basis, a listed company must maintain performance under one of three standards, which are outlined in Exhibit 15.7. This is a simplified version of the complex NYSE standards—see www.nyse.com for a complete set of continued listing standards.

COMPARING THE STOCK EXCHANGES

There are significant differences in the fees charged by the various stock exchanges. Exhibit 15.8 shows the initial listing fees for the exchanges, showing the lowest and

EXHIBIT 15.8 Comparison of Stock Exchange Initial Listing Fees

Shares	Amex	NASDAQ Capital Market	NASDAQ Global Market	NYSE
Up to 5 million	$45,000	$50,000	$100,000	$150,000
50+ million	70,000	75,000	150,000	250,000

highest possible prices. For companies having in excess of 50 million shares, the maximum fees will apply.

The Amex has positioned itself to be slightly less expensive than the NASDAQ Capital Market, though the pricing difference is minor. Similarly, the NASDAQ Global Market has positioned its prices to be clearly below those of the NYSE. However, for companies with the resources to list on the NYSE, its higher fees are probably not a significant factor.

In addition, each exchange charges an annual listing fee, which is shown in Exhibit 15.9. Again, rather than showing the full range of prices, the table reveals the lowest and highest possible prices. The maximum annual listing fee for the NYSE is misleading, since it only applies to a very high share volume. Accordingly, an additional row is included for 50 million shares, to give some indication of pricing for a mid-range share volume.

The differences between the annual fees charged by the Amex and the NASDAQ Capital Market are insignificant. If a very large company lists on the NYSE, then its annual fees can substantially exceed those it would incur if it listed on the NASDAQ Global Market.

The number of required round-lot stockholders (those owning at least 100 shares) does not vary significantly amongst the exchanges, with the usual requirement varying between 300 and 500 round-lot stockholders. Once a company has been trading on an exchange for a few months, it usually exceeds these figures by a substantial amount.

All of the exchanges allow a company to be listed even if it does not report pretax income, by alternatively requiring a higher float, cash flow, or market capitalization. These alternative requirements are easier to meet on the Amex and NASDAQ Capital Market, and more difficult on the NASDAQ Global Market and NYSE.

The continued listing requirements are much lower than the initial listing requirements for all of the exchanges. For example, the Amex has no minimum stock bid price for a continued listing, while the NASDAQ Capital Market's bid price requirement drops from an initial listing requirement of $4 to $1, and the NASDAQ Global Market's requirement drops from $5 to $1.

EXHIBIT 15.9 Comparison of Stock Exchange Annual Listing Fees

Shares	Amex	NASDAQ Capital Market	NASDAQ Global Market	NYSE
Up to 5 million	$16,500	$27,500	$30,000	$ 38,000
50 million	32,500	27,500	45,000	46,500
Maximum	34,000	27,500	95,000	500,000

Amex directors do not sell products or services to their assigned companies, whereas NASDAQ directors' compensation is partially based on their ability to sell products and services to their assigned companies. A company may not experience any real difference in costs because of these differences, but there is certainly more selling pressure in the NASDAQ environment.

All of the exchanges require compliance with a variety of governance standards, such as a majority of independent directors, audit committees, and codes of conduct. There are no significant differences between the governance standards required by the various exchanges.

OVER-THE-COUNTER STOCKS

If a publicly traded company cannot meet the listing requirements of a stock exchange, then it can choose to have its shares traded over the counter. The best two vehicles for such trading are Pink Sheets LLC and the OTC Bulletin Board, which is operated by NASDAQ.

The OTC Bulletin Board operates an electronic exchange that handles bid and price information on about 3,300 securities of various kinds. For a company to have its securities quoted in the OTC Bulletin Board exchange, it must first find at least one market maker who is willing to quote the stock; this person must be an SEC-registered broker-dealer. Listing also requires that a company be registered with and send periodic required reports to the Securities and Exchange Commission (SEC). The exchange charges no fees for a security to be quoted in its system.

Pink Sheets LLC (www.pinksheets.com) operates an Internet-based, real-time quotation service for over-the-counter equities and bonds, of which about 5,000 are currently traded. It is not a registered stock exchange. For a company to have its securities quoted in the Pink Sheets exchange, it must first find at least one market maker who is willing to quote the stock; this person must be an SEC-registered broker-dealer. Pink Sheets LLC does not require that a company register with the SEC before being listed in its exchange service. Because of the lack of registration requirements, being listed by Pink Sheets LLC tends to give a company the reputation for having questionable financial results.

SUMMARY

The objective of many successful business owners is to take their companies public, so they can eventually sell off some portion of their shares in the business and retire. However, this reasoning does not always work out in practice because of the considerable expense of the IPO, the ongoing cost of reporting to the public, ongoing exchange listing fees, potential investor lawsuits, and the risk of loss of control of the business. Consequently, an increasing number of business owners have concluded that they would rather take their companies private. Doing so requires special reporting requirements, which are discussed in Chapter 18, "Taking a Company Private."

CHAPTER SIXTEEN

16 Reports to the Securities and Exchange Commission

THE CFO OF ANY publicly held company must deal with the Securities and Exchange Commission (SEC)—certainly on a quarterly basis, and frequently more than once a week on a variety of topics. Given the frequency of interaction, the CFO should have considerable familiarity with the various reports to be filed, and the information to include in each one.

OVERVIEW

A publicly held company must provide an extensive amount of information to the Securities and Exchange Commission on an ongoing basis. The most frequently filed report is the Form 8-K, which is required to disclose a material, previously undisclosed event. An active company may file a Form 8-K every few days. In addition, such a company must also disclose its quarterly financial results in a Form 10-Q, as well as its annual results in a Form 10-K. The contents of all of these reports are discussed in this chapter.

A key goal of a public company is to have its securities registered, so that it can more easily sell the securities, and so that its investors can freely trade them. A simplified registration is available through Form S-8, which only applies to securities issued through an employee benefit plan, while Form S-3 is an abbreviated registration that is only available to seasoned public companies. Form S-1 is the ''full'' version that all other public companies must use. This chapter also describes the applicability and content of the Forms S-1, S-3, and S-8.

The New CFO Financial Leadership Manual, Third Edition
by Steven M. Bragg

FORM 8-K

A public company is required to file a Form 8-K to report a material, undisclosed event. The form must be filed within four business days of the event. If the event occurs on a weekend or holiday, then the four-day rule shall begin on the next business day thereafter. However, if a disclosure is required under Regulation FD, then disclosure is considerably accelerated. A moderately active company will find itself filing this form quite frequently; possibly more than all other forms combined.

The SEC defines a number of types of material events that must be reported in a Form 8-K; they are described in the following table. For the more common Form 8-K disclosures, an example is also provided:

Section 1—Company's Business and Operations

Item 1.01 *Entry into a material definitive agreement.* This is for a material definitive agreement not made in the ordinary course of business. Disclose the date of the agreement, the parties involved, and a brief description of the agreement.

Example: On[date] we entered into an amendment to our senior secured credit facility with ABC Bank. which amends the borrowing base definition. Under the terms of the amendment, the percentage of receivables to be included in the borrowing base is changed from 70 to 80 percent.

Item 1.02 *Termination of a material definitive agreement.* This is for the termination of a material definitive agreement not made in the ordinary course of business. Disclose the termination date, the parties involved, and a brief description of the agreement, as well as the circumstances surrounding the termination and any material early termination penalties incurred by the company.

Example: On [date] the Company terminated its previously announced Agreement and Plan of Merger, dated as of [date], with XYZ Company. The Company's board of directors did not believe that the merger could be finalized.

Item 1.03 *Bankruptcy or receivership.* This is for a company's entry into bankruptcy or receivership. Identify the proceeding, the identity of the court, the date that jurisdiction was assumed, and the identity of the receiver. If a plan of reorganization or liquidation has been entered, then disclose the court, confirmation date, and the material features of the plan.

Example: On [date], ABC Company filed a voluntary petition for relief under chapter 11 of the United States bankruptcy code in the United States Bankruptcy Court, Southern District of New York (case number 01234). The Debtors will continue to operate the business as ''debtors-in-possession'' under the jurisdiction of the Court and in accordance with applicable provisions of the Bankruptcy Code and orders of the Court. The filing is attached hereto.

Section 2—Financial Information

Item 2.01 *Completion of acquisition or disposition of assets.* For the purchase or sale of a significant amount of assets, disclose the transaction date, the other party, the amount of consideration involved, and the source of funds used for an acquisition.

Example: On [date], stockholders of ABC Company (''ABC'') approved and adopted the Agreement and Plan of Merger, dated as of [date] by and among XYZ Company (''XYZ'') and ABC, which contemplated that XYZ will merge with and into ABC, with ABC surviving the merger as a wholly owned subsidiary of XYZ. On [date], the merger was consummated.

Pursuant to the terms of the Merger Agreement, former ABC common stockholders are entitled to receive $1.15 in cash in exchange for each share of ABC common stock, outstanding immediately prior to the effective time of the merger.

Item 2.02 *Results of operations and financial condition.* Note the date of the release of any material, nonpublic information regarding the company's results of operations or financial condition, and attach the text of the release.

Example: On [date], the Company announced its financial results for the quarter ended September 30, 20XX. The full text of the press release issued in connection with the announcement is furnished as an exhibit to this Form 8-K.

Item 2.03 *Creation of a direct financial obligation or an obligation under an off-balance-sheet arrangement of a company.* When the company enters into a material obligation, disclose the transaction date and the amount and terms of the obligation.

Example: ABC Company (''ABC'') will become obligated on material direct financial obligations pursuant to the Credit Agreement dated as of [date], among ABC and Big Bank (''Big''). Under the terms of the Credit Agreement, Big will make available to ABC up to a $100,000,000 term loan commitment and up to a $50,000,000 revolving loan commitment. Proceeds of the credit agreement may be used for general corporate purposes. The principal amount outstanding of all term loans and revolving loans is due and payable on [date]. Loans will bear interest at Big's base rate plus an applicable margin ranging from 0 percent to 0.2 percent, based on ABC's credit rating. Interest on base rate loans is payable on a quarterly basis on the last day of March, June, September, and December, and interest is payable at the end of the applicable interest period.

Item 2.04 *Triggering events that accelerate or increase a direct financial obligation or an obligation under an off-balance-sheet arrangement.* If a triggering event occurs, note the date of the event and provide a brief description of it, as well as the amount of the obligation.

Example: On [date], the Company received notices from ABC Advisors, holder of the Company's convertible debentures, claiming that the Company was in default of the terms of the debentures for failure to maintain current financial statements in the registration statement relating to the sale of the Company's common stock issuable upon conversion of one of those debentures, and as a result that ABC Advisors was exercising its right to accelerate payment of the full principal amount of the debentures. Approximately $25 million, including interest, is currently outstanding on the debentures.

Item 2.05 *Costs associated with exit or disposal activities.* If the company commits to an exit or disposal plan, note the date of the commitment, the course of action to be taken, and the expected completion date. For each major type of cost, also estimate the range of amounts expected to be incurred.

Example: On [date], the Company committed to a restructuring plan that includes a reduction in force of approximately 500 positions. The restructuring plan is intended to improve operational efficiencies. The Company anticipates that it will complete the restructuring by [date]. In connection with the restructuring, the Company expects to incur total expenses relating to termination benefits of $21 million to $24 million, all of which represent cash expenditures. The Company expects to record the majority of these restructuring charges in the quarter ending December 31, 20XX.

Item 2.06 *Material impairments.* If the company concludes that one or more of its assets are impaired, then disclose the date of the decision, describe the asset, and note the circumstances leading to the conclusion. Also note the amount of the impairment.

Example: During the quarter ended September 30, 20XX, as part of the Company's ongoing strategic review of the business, an impairment analysis was performed on the Aerospace segment goodwill and intangible assets. On [date] the Company concluded that noncash goodwill and intangible asset impairment charges of $10 million were required, and such charges were recorded in the quarter ended September 30, 20XX.

Section 3—Securities and Trading Markets

Item 3.01 *Notice of delisting or failure to satisfy a continued listing rule or standard; transfer of listing.* Disclose the date when the company received notice from a national exchange that a class of its common equity does not satisfy its continued listing, or that the exchange expects to delist it. Also note the rule being violated that led to the notification, and the action the company expects to take in response. If company has caused an exchange listing to be withdrawn, then describe the action taken and the date of the action.

Example: ABC Company today announced it has received notice from Nasdaq that its common stock is subject to potential delisting from the Nasdaq Capital Market because the bid price of the Company's common stock closed below the minimum $1.00 per share requirement for 30 consecutive business days prior to [date]. The Company has been granted an initial 180 calendar days, or until [date], to regain compliance.

Item 3.02 *Unregistered sales of equity securities.* In the event of an unregistered security sale, state the date of sale, the type and amount of securities sold, the consideration paid, the type of exemption from registration being claimed, and any convertibility terms. This report only need be filed if the shares issued are more than 1 percent of the shares outstanding. For a smaller reporting company, the reporting threshold is 5 percent of the shares outstanding.

Example: On [date], accredited investors purchased an aggregate of 25,000,000 shares of common stock at $2.00 per share for an aggregate purchase price of $50,000,000 from ABC Company (''ABC''). The funds raised will be utilized by ABC for working capital and research purposes. The shares were offered and sold to the accredited investors in a private placement transaction made in reliance upon exemptions from registration pursuant to Section 4(2) under the Securities Act of 1933. Each of the Investors are accredited investors, as defined in Rule 501 of Regulation D promulgated under the Securities Act of 1933.

Item 3.03 *Material modification to rights of security holders.* Disclose the date of modification, the type of security involved, and the effect of the modification on the rights of the security holders.

Example: On [date], ABC Company entered into an amendment to its Preferred Stock Rights Agreement dated [date] with XYZ Trust Company to amend the exercise price of a right to purchase one share of its Series A Preferred Stock to $25.00 per share, and to make certain conforming changes related to the change in exercise price.

Section 4—Matters Related to Accountants and Financial Statements

Item 4.01 *Changes in the company's certifying accountant.* If the company's auditor resigns or is dismissed, disclose whether the change was a resignation or dismissal, and whether the auditor's report for either of the past two years contained an adverse opinion or disclaimer of opinion, or was qualified. Also state whether the change was recommended or approved by the company's board of directors or its audit committee, and whether there were any disagreements with the auditor during the two most recent fiscal years that were not resolved to the satisfaction of the auditor.

Example: On [date], our client-auditor relationship with XYZ Auditor (''XYZ'') ceased. As of that date, ABC Company (''ABC'') had no disagreements with XYZ on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedure. We have provided XYZ with a copy of the disclosures we are making in response to this Item 4.01. XYZ has furnished us with a letter dated [date], addressed to the Commission, and stating that it agrees with the statements made herein.

Item 4.02 *Nonreliance on previously issued financial statements or a related audit report or completed interim review.* If the company concludes that any previously issued financial statements cannot be relied on because of an error, disclose the date of this decision and describe the facts underlying the decision. There are multiple additional steps to be taken besides filing this Form 8-K.

Example: On [date], management of the Company, with concurrence of the audit committee of the Company's board of directors (''Audit Committee''), concluded that the Company's previously issued financial statements for the three months ended March 31, 20XX (''Financials'') incorrectly valued an allowance against deferred tax assets. As a result, the Financials should no longer be relied on. The Company intends to file amended financial statements in a Form 10-Q/A for the three-month period ended March 31, 20XX, no later than May 31, 20XX. During the first quarter of 20XX, in accordance with Statement of Financial Accounting Standards No. 109, ''Accounting for Income Taxes'' (''FAS 109''), the Company recorded a valuation allowance of $125 million to reduce certain net deferred tax assets to their anticipated realizable value. The Company later realized it had incorrectly determined the valuation allowance against deferred tax assets. The Company and its auditors have reached a preliminary conclusion that an additional valuation allowance of $45 million should have been recorded at March 31, 20XX.

Section 5—Corporate Governance and Management

Item 5.01 *Changes in control of the company.* Identify the person acquiring control of the company and the date of the change, and describe the transaction resulting in the change of control. Also note the amount of consideration used to effect the change, and the source of the person's funds to do so.

Example: On [date], Current Investor, the controlling shareholder of ABC Company (''ABC'') entered into a Securities Purchase and Sale Agreement with XYZ Company (''XYZ''). Pursuant to the Securities Purchase and Sale Agreement, Current Investor agreed to sell all of his shares of the Company's common stock to XYZ. Upon the closing of the Securities Purchase and Sale Agreement on [date] (the ''Closing''), a change in control of the Company occurred. Pursuant to the Securities Purchase and Sale Agreement, XYZ has acquired 5,000,000 shares of the Company's common stock from Current Investor. XYZ paid $15,000,000 to acquire such shares. Funds for the acquisition were from the working capital of XYZ. XYZ now owns 80 percent of ABC's issued and outstanding shares.

Item 5.02 *Departure of directors or certain officers; election of directors; appointment of certain officers.* If a director resigns, is removed, or refuses to stand for reelection because of a disagreement with the company, note the date of the event, the director's committee positions held, and the nature of the disagreement. If the director has provided any written correspondence related to the disagreement, then this must be attached as an exhibit.

Example: Mr. Alfred Director resigned as a director of ABC Company (''ABC''), effective on [date]. Mr. Director was a member of ABC's audit committee and governance committee. He gave no reason for his resignation.

Item 5.03 *Amendments to articles of incorporation or bylaws; change in fiscal year.* For such amendments that were not previously disclosed in a proxy statement, disclose the amendment date and describe the change.

Example: On [date], ABC Company filed with the Secretary of State of New York a Certificate of Amendment to its Certificate of Incorporation establishing the terms of a new class of Series A Preferred Stock.

Item 5.04 *Temporary suspension of trading under the company's employee benefit plans.* For such a suspension, note the reason for the blackout period, the plan transactions to be suspended, the class of equity securities affected, and the duration of the blackout period.

Example: On [date], the audit committee of the board of directors of ABC Company (''ABC'') concluded that the Company's financial statements for one or more prior periods will likely need to be restated in conjunction with revising its sales return reserve calculations. Because of the potential restatement of this information and in order to ensure compliance with applicable securities laws, participants in the ABC Company 401(k) plan (the ''Plan'') will be temporarily subject to a blackout period during which they will be precluded from acquiring beneficial ownership of additional interests in the Company's common stock fund under the 401(k) plan. During the blackout period, Plan participants will be unable to direct investments into the Company's stock fund under the Plan. The blackout period began at 7:00 A.M. Eastern time on [date] and is currently anticipated to end at 7:00 A.M. Eastern time on the day immediately following the day on which the restated financial statements are filed with the Securities and Exchange Commission.

Item 5.05 *Amendment to company's code of ethics, or waiver of a provision of the code of ethics.* Note the date of any change that applies to the company's CEO, CFO, or principal accounting officer; the name of the person to whom it was granted, and describe the nature of the waiver.

Example: On [date], the board of directors of the Company approved a Code of Business Conduct and Ethics, which covers all employees and directors of the Company. The new Code of Business Conduct and Ethics encompasses and supersedes the Code of Business Conduct and Ethics for the Company's senior officers, which has been posted on the Company's Web site.

Item 5.06 *Change in shell company status.* If a company is no longer a shell company, disclose the material terms of the transaction.

Example: The disclosure regarding the reverse merger in Item 2.01 is hereby incorporated by reference. Prior to the effective time of the reverse merger, ABC Company was a shell company.

Section 6—Asset-Backed Securities (ABS)

Item 6.01 *ABS informational and computational materials.* Report any information and computational material filed in, or as an exhibit to, this report.

Item 6.02 *Change of servicer or trustee.* If a servicer or trustee has resigned or been removed, or if a new servicer has been appointed, state the event date and the circumstances of the change.

Item 6.03 *Change in credit enhancement or other external support.* If the company becomes aware of any material enhancement or support regarding one or more classes of asset-backed securities, then identify the parties to the agreement causing the change, and describe its date, terms, and conditions.

Item 6.04 *Failure to make a required distribution.* If a required distribution to holders of asset-based securities is not made, identify the failure and state the nature of the failure.

Item 6.05 *Securities Act updating disclosure.* If any material pool characteristic of the actual asset pool at the time of issuance differs by 5 percent or more from the description of the asset pool in the prospectus, then disclose the characteristics of the actual asset pool.

Section 7—Regulation FD

Item 7.01 *Regulation FD disclosure.* Disclose under this item only information that the company elects to disclose pursuant to Regulation FD.

Example: On [date], ABC Company (''ABC'') will make a presentation to potential lenders. A copy of the slides to be used in the presentation is furnished herewith as an exhibit.

Section 8—Other Events

Item 8.01 *Other events.* Disclose under this category any events that the company considers to be of importance to its securities holders.

Example: On [date], ABC Company (''ABC'') entered into a settlement agreement with the United States Department of Justice to settle all outstanding federal suits against ABC in connection with claims related to the Company's alleged off-label marketing and promotion of its ABC Product® to pediatricians (the ''Settlement Agreement''). The settlement is neither an admission of liability by ABC nor a concession by the United States that its claims are not well founded. Pursuant to the Settlement Agreement, the Company will pay approximately $10 million to settle the matter between the parties. The Settlement Agreement provides that, upon full payment of the settlement fees, the United States releases ABC from the claims asserted by the United States. As of [date], ABC accrued a loss contingency of $10 million for this matter.

The various types of disclosure in the preceding table were presented in summary format *only*, and should not be relied on as the basis for a Form 8-K filing. Only use the advice of corporate counsel for such disclosures.

FORM 10-Q AND FORM 10-K

Financial statements and supporting disclosures must be filed by publicly held companies with the SEC on a quarterly basis. Those statements issued for the first, second, and third quarters of a company's fiscal year are called 10-Q reports, while the year-end report is called a 10-K report.

The 10-Q and 10-K reports include a company's basic financial statements, as well as a number of additional disclosures that greatly exceed the size of the statements. These disclosures are itemized in great detail in Regulation S-K. Although a company may be accustomed to producing the financial statements in short order, it is the additional disclosures that require a considerable amount of additional time to complete. Exhibit 16.1 shows the additional contents of a 10-K report, as well as the likely timing of when each item can be completed.

The items described in Exhibit 16.1 are general SEC requirements that apply to all public companies. Companies in specialized industries, such as insurance or

EXHIBIT 16.1 Sampling of 10-K Report Contents

Item Header	Include in 10-Q	Description
Item 1. Business		Describes the company's general purpose, its history, business segments, customers, suppliers, sales and marketing operations, customer support, intellectual property, competition, and employees. It is designed to give the reader a grounding in what the company does and the business environment in which it operates.
Item 1A. Risk factors	Yes	An exhaustive compilation of all risks to which the company is subjected, and serves as a general warning to investors of what actions might negatively impact their investments in the company.
Item 1B. Unresolved staff comments		If an accelerated or large accelerated filer received written comments from the SEC at least 180 days before its fiscal year-end and those comments are unresolved, then disclose all material unresolved issues.
Item 2. Properties		Describes the company's leased or owned facilities, including square footage, lease termination dates, and lease amounts paid per month.
Item 3. Legal proceedings	Yes	Describes current legal proceedings involving the company, and the company's estimate of the likely outcome of those proceedings.
Item 4. Submission of matters to a vote of security holders	Yes	Describes any matters submitted to shareholders for a vote during the fourth quarter of the fiscal year.
Item 5. Market for company stock		Notes where the company's stock trades, the number of holders of record, and high and low closing prices per share, by quarter.
Item 6. Selected financial data		Provide in tabular comparative format, for the last five years, selected information from the company's income statement and balance sheet.
Item 7. Management's discussion and analysis (MD&A)	Yes	Involves multiple areas of required commentary, including opportunities, challenges, risks, trends, key performance indicators, future plans, and changes in revenues, cost of goods sold, other expenses, assets, and liabilities.
Item 7A. Quantitative and qualitative disclosures about market risk	Yes	Quantifies the market risk as of the end of the last fiscal year for its market risk-sensitive instruments. Several presentation formats are available.
Item 8. Financial statements and supplementary data	Yes	Includes all disclosures required by GAAP, including descriptions of acquisitions, discontinued operations, fixed assets, accrued liabilities, related party transactions, income taxes, stock options, segment information, and many other possibilities, depending on the nature of a company's transactions.

EXHIBIT 16.1 (*continued*)

Item Header	Include in 10-Q	Description
Item 9. Changes in and disagreements with accountants on accounting and financial disclosure		State the existence and nature of any disagreement with the company's auditors when the company elects to account for or disclose transactions in a manner different from what the auditors want.
Item 9A. Controls and procedures	Yes	A statement generally describing the company's system of internal controls, testing of controls, changes in controls, and management's conclusions regarding the effectiveness of controls.
Item 10. Directors, executive officers and corporate governance		Identifies executive officers, directors, promoters, and control persons.
Item 11. Executive compensation		Itemizes various types of compensation received by company executives.
Item 12. Security ownership of certain beneficial owners and management and related stockholder matters		Notes the number of shares of all types owned or controlled by certain beneficial owners and management.
Item 13. Certain relationships and related transactions, and director independence		Describe any transactions with related parties during the past fiscal year involving amounts greater than $120,000.
Item 14. Principal accountant fees and services		Disclose the aggregate fees billed for each of the last two fiscal years for professional services rendered by the company's auditor for reviews and audits, for audit-related activities, taxation work, and all other fees.
Item 15. Exhibits and financial statement schedules	Yes	Item 601 of Regulation S-K requires the attachment of numerous exhibits to the 10-K, including such issues as a company's code of ethics, material contracts, articles of incorporation, bylaws, and acquisition purchase agreements.

banking, must make extensive additional industry-specific disclosures in the financial statement footnotes. Also, certain activities require additional footnote disclosures, such as stock options, business combinations, pensions, and the use of variable interest entities.

Exhibit 16.1 also included a column noting which of the reportable items must be included in the quarterly 10-Q report. In addition to the 10-Q items already noted, the 10-Q must disclose the unregistered sales of equity securities and use of proceeds, as well as any defaults on senior securities.

FORM S-1

Form S-1 is the default registration form to be used if no other registration forms or exemptions from registration (such as would be applicable under Regulations A or D) are applicable.

A key factor in the preparation of a Form S-1 is whether the company can incorporate a number of required items by referencing them in the form, which can save a great deal of work. Incorporation by reference is *only* available if the company has not been for the past three years a blank check company, a shell company, or a registrant for an offering of penny stock. The company must also be current with its various filings of financial information. These requirements are a particular burden for any private company that has gone public by acquiring a shell company, since it cannot incorporate its other SEC filings by reference until three years have passed from the date of acquisition.

The 17 main informational contents of the Form S-1 are as follows:

1. *Forepart of the registration statement.* Include the company name, the title and amount of securities to be registered, and their offering price. Also describe the market for the securities and a cross-reference to the risk factors section. Include a legend stating that the SEC has not approved or disapproved of the securities, and then identify the underwriters and state the nature of the underwriting arrangement.
2. *Summary information.* Provide a summary of the prospectus contents that contains a brief overview of the key aspects of the offering, as well as contact information for the company's principal executive officers.
3. *Risk factors.* Discuss the most significant factors that make the offering speculative or risky, and explain how the risk affects the company or the securities being offered.
4. *Ratio of earnings to fixed charges.* If the registration is for debt securities, then show a ratio of earnings to fixed charges. If the registration is for preferred equity securities, then show the ratio of combined fixed charges and preference dividends to earnings. These ratios must be shown for the past five years and the latest interim period.
5. *Use of proceeds.* State the principal purpose for which proceeds from the offering are intended.
6. *Determination of offering price.* Describe the factors considered in determining the offering price, both for common equity and for warrants, rights, and convertible securities.
7. *Dilution.* Disclose the net tangible book value per share before and after the distribution, the amount of the change in net tangible book value per share attributable to the cash payments made by purchasers of the shares being offered, and the amount of the immediate dilution from the public offering price that will be absorbed by these purchasers.
8. *Selling security holders.* For those securities being sold for the account of another security holder, name each security holder, as well as each person's relationship with the company within the past three years, and the before-and-after ownership percentages of each security holder.

9. *Plan of distribution.* For securities offered through an underwriter, name all underwriters involved and their relationship with the offering. Also outline the plan of distribution for any securities to be registered that are offered otherwise than through underwriters. If the securities are to be offered on an exchange, then name the exchange. Also reveal the compensation paid to the underwriters, dealers, and finders. Further, describe any stabilization transactions that the underwriter intends to conduct during the offering period, and how these transactions will affect the security's price.
10. *Description of securities to be registered.* For equity securities, state the title of the security and related rights, such as voting rights, liquidation rights, dividend rights, and terms of conversion. For debt securities, state their title, the principal amount being offered, and terms, such as maturity, interest, conversion, amortization, and so on. The description should also address liens, rights subordination, operational and financing restrictions, default events, warrants, and so forth.
11. *Interests of named experts and counsel.* Identify any experts and counsel that are certifying or preparing the registration document, or providing a supporting valuation, and the nature of their compensation relating to the registration. This can be excluded if their compensation does not exceed $50,000.
12. *Information with respect to the registrant.* This section makes up the bulk of the document. It includes a description of the business and its property, any legal proceedings, the market price of the company's stock, financial statements, selected financial data, and management's discussion and analysis of the company's financial condition and its results of operations. It also requires disclosure of any disagreements with the company's auditors, market risk analysis, and several ownership and governance issues.
13. *Material changes.* Describe material changes that have occurred since the company's last-filed annual or quarterly report.
14. *Other expenses of issuance and distribution.* Itemize the expenses incurred in connection with the issuance and distribution of the securities to be registered, other than underwriting discounts and commissions.
15. *Indemnification of directors and officers.* Note the effect of any arrangements under which the company's directors and officers are insured or indemnified against liability.
16. *Recent sales of unregistered securities.* Identify all unregistered securities sold by the company within the past three years, including the names of the principal underwriters, consideration received, and the type of exemption from registration claimed. Also state the use of proceeds from registered securities until all proceeds have been applied or the offering is terminated.
17. *Exhibits and financial statement schedules.* Provide exhibits, with a related index, for such items as the underwriting agreement, consents, and powers of attorney. A table showing the complete list of possible exhibits is noted in Item 601 of Regulation S-K.

The preceding summary addresses the essential disclosure requirements for a Form S-1, but not all; the detail for these reporting requirements is located in Regulation S-K. The reader should understand that the Form S-1 is a serious

undertaking that will likely result in a document having the size of a small book. It requires massive internal effort, as well as substantial input by and review of the company's auditors and counsel. The result is a major expense, and results in the diversion of management time away from operational matters. Thus, there is any excellent reason why companies use every other means at their disposal to avoid raising funds through a Form S-1. One reduced type of informational reporting is available through the Form S-3, which is covered in the next section.

FORM S-3

Form S-3 allows a company to incorporate a large amount of information into the form by reference, which is generally not allowed in a Form S-1. Specifically, the company can incorporate the information already filed in its latest Form 10-K, subsequent quarterly 10-Q reports, and 8-K reports, thereby essentially eliminating the ''information with respect to the registration'' that was just described with regard to Form S-1. This represents a considerable time savings, so companies file a Form S-3 whenever possible. However, the Form S-3 is restricted to those companies who meet all four eligibility requirements:

1. It is organized within and has principal business operations within the United States.
2. It already has a class of registered securities, or has been meeting its periodic reporting requirements to the SEC for at least the past 12 months.
3. It cannot have failed to pay dividends or sinking fund installments, and cannot have defaulted on scheduled debt or lease payments since the end of the last fiscal year.
4. The aggregate market value of the common equity held by nonaffiliates of the company is at least $75 million.

If a company has an aggregate market value of common equity held by nonaffiliates of less than $75 million, it can still use Form S-3, provided that it meets three conditions:

1. The aggregate market value of securities sold by the company during the 12 months prior to the Form S-3 filing is no more than one-third of the aggregate market value of the voting and nonvoting common equity held by its nonaffiliated investors.
2. It is not a shell company, and has not been one for the past 12 months.
3. It has at least one class of common equity securities listed on a national securities exchange.

In addition, if the form is to be used to register nonconvertible securities, the securities must be rated ''investment grade securities'' by one of the nationally recognized statistical rating organizations.

Clearly, the eligibility requirements of the Form S-3 restrict its use to larger public companies. Smaller *nano-cap* firms must search for a registration exemption, such as is provided by Regulation A and Regulation D, or use the highly restricted Form S-8, which is described in the next section.

FORM S-8

Form S-8 allows a company to register securities that it offers to its employees and consultants under an employee benefit plan. Such a plan can involve a broad array of securities-related issuances, such as common stock, stock options, restricted stock units, purchases under an employee stock purchase plan, and so on. People covered by this type of registration include employees, officers, directors, general partners, and consultants. Securities issued to consultants can only be registered through a Form S-8 if they provide bona fide services to the company and those services are not related to the sale of its securities or making a market in them. Family members are also covered if they received company securities through an employee gift.

There are two significant advantages to using a Form S-8. First, the form is effective immediately upon filing, rather than the usual interminable process of waiting for and responding to SEC comment letters. Second, it is extremely simple to complete. The company must merely state that its regular periodic filings are incorporated by reference, and note the manner in which the company indemnifies its officers and directors. There are a few other requirements that are generally not applicable. The principal accompanying document is the employee benefit plan.

This form of registration is available only if a public company has been current with its filing requirements for at least the past 12 months and has not been a shell company for at least the preceding 60 days.

In short, Form S-8 presents significant advantages over the normal securities registration process. However, since it is applicable only to employee benefit plans, it usually applies to only a small proportion of a company's outstanding securities.

SHELF REGISTRATION

Shelf registration is the registration of a new issue of securities that can be filed with the SEC up to three years in advance of the actual distribution of such securities. This allows a company to obtain funds quickly when needed, rather than compiling a registration document and then waiting for the SEC to declare the registration effective. It is especially useful for debt offerings, since a public company can wait for interest rates to decline before issuing any securities.

A shelf registration is governed by the SEC's Rule 415. It can be accomplished through a Form S-3 filing, which, in turn, is restricted to certain companies that meet the SEC's eligibility rules (see the preceding Form S-3 section for details). It is also possible to use a Form S-1 to initiate a shelf registration, but only if the intent is to sell the securities ''on an immediate, continuous, or delayed basis,'' with all sales being completed within the next two years.

A shelf registration must be declared effective by the SEC before any securities sales related to it can be initiated. However, the SEC's Rule 462(e) allows for some registration statements to be declared effective immediately upon their dates of filing. This automatic shelf registration is available only to *well-known seasoned issuers* (WKSI). A WKSI is a

company whose common stock belonging to nonaffiliates has a market value of at least $700 million, or that has issued at least $1 billion of nonconvertible securities within the past three years and will register only nonconvertible securities other than common equity. In addition, such filings have reduced information filing requirements.

DECLARING A REGISTRATION STATEMENT EFFECTIVE

A registration statement is reviewed by the SEC staff, and if they find that it conforms to SEC regulations and clearly states key information about the company, then they declare it *effective*. Once declared effective, either the company or those investors on whose behalf it is registering the securities can initiate selling activities.

The problem is obtaining that ''effective'' status. The SEC's examiners delve into registration statements with great vigor, and it is a rare document indeed that is immediately granted ''effective'' status. Instead, the usual situation is for the SEC to spend one month reviewing the registration document, and then send back a comment letter. The letter begins with the following boilerplate comments:

> We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with supplemental information so we may better understand your disclosure. After reviewing this information, we may or may not raise additional questions.
>
> Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements, and to enhance the overall disclosure of your filing.

The letter then continues with potentially dozens of questions about various items of information contained within the filing. The company then sends back a response, after which the SEC spends about one month reviewing the information again, and then respond with either another (hopefully reduced) list of questions or declares the document to be effective. A new public company can reasonably expect anywhere from two to four iterations of this process, with each iteration taking an additional month. A more experienced public company whose filings have been reviewed by the SEC in the recent past will occasionally not be reviewed at all, or will be subjected to only one or two rounds of questions.

The key issues involving the effectiveness declaration are the time and expense involved. The company's attorneys and auditors are deeply involved in every question and answer iteration with the SEC, so the cost of their services builds over time. Further, being declared effective in anything under two months is an excellent achievement, with previously unreviewed companies sometimes being subjected to a half-year of effort.

REPORTING INSIDER SECURITIES OWNERSHIP AND TRADING

The SEC requires that a public company's directors, officers, and larger shareholders report the extent of their ownership of the company. This information is posted for public access, and can also be used by the SEC or other organizations as evidence for any investigations they conduct of the company or its shareholders.

Who must report their ownership? Any director or officer of the company must file reports. For the purposes of this filing, an officer is a company's:

> . . . president, principal financial officer, principal accounting officer (or, if there is no such accounting officer, the controller), and vice president of the company in charge of a principal business unit, division, or function (such as sales, administration or finance), any other officer who performs a policy-making function, or any other person who performs similar policy-making functions for the company.
>
> Securities and Exchange Commission

In addition, any beneficial owner of greater than 10 percent of a class of registered equity securities must file reports, although this does not apply to such institutions as banks, brokers, and employee benefit plans where the securities are held for the benefit of third parties. A *beneficial* owner means that the person either directly or indirectly, through any contract or relationship, has or shares a direct or indirect interest in the equity securities. For example, a person would be considered to have a beneficial interest in securities held by immediate family members sharing the same household (such as the person's spouse). This also applies to a person's right to acquire equity securities through the exercise of any derivative security. For example, if an investor acquires shares with attached warrants, then the additional shares represented by the warrants must be included in the calculation, even if the exercise price of the warrants is currently well above the market price.

As an example of the determination of a 10 percent beneficial owner, ABC Company sells one million shares of its common stock to Investor Smith, along with 100 percent warrant coverage. Prior to the sale, ABC Company had 20 million shares outstanding. Is Investor Smith a 10 percent beneficial owner? The calculation of ownership follows:

$$\begin{aligned}\text{Ownership interest} &= \frac{\text{1 million shares} + \text{1 million warrants}}{\text{20 million existing shares} + \text{1 million new shares} + \text{1 million warrants}} \\ &= \frac{2,000,000}{22,000,000} \\ &= 9.1\%\end{aligned}$$

Thus, though Investor Smith initially seems to have acquired a 10 percent ownership interest, the newly issued shares and warrants must also be added to the

denominator of the calculation, which pushes his ownership below the 10 percent level.

Given the time and effort of filing the various ownership forms, it is worth looking for an exclusion from the filing requirement. The broadest exemption is that no reporting is needed if an individual receives stock splits or stock dividends, since there is no net change in the person's proportion of ownership.

There are three ownership forms to be completed by the applicable investors just noted. The first is Form 3. This is a statement of a person's initial ownership in the equity securities of a company, and must be filed within ten days of the event that results in that person becoming a director, officer, or 10 percent beneficial owner. However, a reporting person of a company that is registering securities for the first time must file Form 3 no later than the effective date of the registration statement.

The information to be reported on Form 3 is shown in Exhibit 16.2. Essentially, the filing person should itemize each type and quantity of the company's securities that he holds, as well as the type of beneficial ownership, and note the existence of all derivative securities.

The same individuals are also subject to the filing requirements of Form 4. The information filed on Form 4 reveals any changes in a designated person's beneficial ownership of a company's securities. The Form is shown in Exhibit 16.3. Form 4 must be filed before the end of the second business day following the day on which a transaction resulting in a change in beneficial ownership has been executed. The filing person must file a separate form for each company for which there are reportable transactions. Both direct and indirect beneficial ownership changes must be reported. Transactions that are directly beneficially owned should be reported on a different line from those that are indirectly beneficially owned.

If an individual engages in an ongoing series of buying or selling transactions, such as selling off shares on a daily basis over many months, every transaction must be filed on a separate Form 4. Transactions that occur within the same two-day filing period can be reported on the same form. Luckily, there is an exemption from filing a Form 4, but only for *acquisitions* of equity securities that do not exceed $10,000. Thus, barring the noted exemption, Form 4 filings can be onerous if someone is engaged in long-term buying or selling.

The Form 4 reporting requirement continues past an individual's tenure in office with the company. If an officer or director resigns, that person must continue to file Form 4 reports for any changes in beneficial ownership of the company's equity securities for six months following the date of resignation.

Form 5, shown in Exhibit 16.4, is an end-of-year cleanup form, meant to capture transactions that should have been reported on Form 4 but were not, or that were subject to an exemption from filing in a Form 4 (such as the just-noted acquisition of equity securities totaling less than $10,000). Thus, its primary purpose is to bring current an individual's reportable transactions. If needed, Form 5 is filed within 45 days of the company's fiscal year end.

For all three forms, the person who is obligated to file each form is liable for doing so—the company is not liable. However, the company is obligated to report in its

EXHIBIT 16.2 Form 3

FORM 3: INITIAL STATEMENT OF BENEFICIAL OWNERSHIP OF SECURITIES

1. Name and Address of Reporting Person _____ (Last) (First) (Middle) _____ (Street) _____ (City) (State) (Zip)	2. Date of Event Requiring Statement (Month/Day/Year)	3. Issuer Name and Ticker or Trading Symbol	
		4. Relationship of Reporting Person to Issuer (Check all applicable) ___ Director ___ 10% Owner ___ Officer ___ Other (specify below) _____	5. If Amendment, Date Original Filed 6. Individual or Joint/ Group Filing ___ Filed by One Person ___ Filed by Multiple People

Table I - Nonderivative Securities Beneficially Owned

1. Title of Security	2. Amount of Securities Beneficially Owned	3. Ownership Form: Direct (D) or Indirect (I)	4. Nature of Indirect Beneficial Ownership

Table II - Derivative Securities Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security	2. Date Exercisable and Expiration Date		3. Title and Amount of Securities Underlying Derivative Security		4. Conversion or Exercise Price of Derivative Security	5. Ownership Form of Derivative Security: Direct (D) or Indirect (I)	6. Nature of Indirect Beneficial Ownership
	Date Exercisable	Expiration Date	Title	Amount or Number of Shares			

_____ Signature of Reporting Person

_____ Date

EXHIBIT 16.3 Form 4

FORM 4: STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

1. Name and Address of Reporting Person	2. Issuer Name and Ticker or Trading Symbol	5. Relationship of Reporting Person(s) to Issuer (check all applicable)
_____ (Last) (First) (Middle)		___ Director ___ 10% Owner
_____ (Street)	3. Date of Earliest Transaction to be Reported	___ Officer ___ Other (specify below) _____
_____ (City) (State) (Zip)	4. If Amendment, Date Original Filed	6. Individual or Joint/Group Filing ___ Form Filed by One Person ___ Form Filed by More Than One Person

Table I - Nonderivative Securities Acquired, Disposed of, or Beneficially Owned

1. Title of Security	2. Transaction Date	2A. Deemed Execution Date	3. Transaction Code		4. Securities Acquired (A) or Disposed of (D)			5. Amt of Securities Owned Following Report	6. Ownership Form: Direct (D) or Indirect (I)	7. Nature of Indirect Beneficial Ownership
			Code	V	Amount	(A) or (D)	Price			

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date	3A. Deemed Execution Date, if Any	4. Transaction Code		5. Number of Derivative Securities Acquired (A) or Disposed of (D)		6. Date Exercisable and Expiration Date		7. Title and Amt of Underlying Securities		8. Price of Derivative Security	9. Number of derivative Securities Beneficially Following Report	10. Ownership Form of Derivative Securities: Direct (D) or Indirect (I)	11. Nature of Indirect Beneficial Ownership
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amt or Number of Shares				

_____ Signature of Reporting Person

_____ Date

annual proxy statement if it has knowledge that one of the forms has not been filed in a timely manner.

EDGAR FILING SYSTEM

EDGAR (Electronic Data Gathering, Analysis, and Retrieval system) is the SEC's primary online tool for automating the collection, validation, indexing, and forwarding of forms filed by companies that are legally required to do so with the SEC. Not only does EDGAR nearly eliminate the paperwork burden on the SEC, but it is also a superior tool for investors and analysts, who have almost immediate online access to the forms being filed. The rules and guidelines under which companies are required to make submissions to EDGAR are codified under the SEC's Regulation S-T.

The SEC requires all publicly held companies with more than $10 million in assets and 500 shareholders to file their registration statements and periodic reports through EDGAR. However, Form 144 (Notice of Proposed Sale of Securities), Forms 3, 4, and 5 (which are reports related to security ownership and transaction reports for corporate insiders), and the annual report to shareholders (except for investment companies) only have to be filed through EDGAR at the filer's option. Foreign companies do not have to file forms through EDGAR.

Transmissions may be sent to the SEC between the hours of 8 A.M. and 10 P.M., Eastern Standard Time, on any business day except federal holidays. The following types of documents must be filed in an electronic format:

- Registration statements and prospectuses
- Statements and applications required by the Trust Indenture Act
- Statements, reports, and schedules required by the Exchange Act
- Documents required by the Investment Company Act
- Documents required by the Public Utility Act

It is not necessary (or allowable) to make electronic submissions for some documents, where paper-based filings are still necessary. At the moment, these include the following:

- Applications for deregistration, filed under the Investment Company Act
- Confidential treatment applications
- Regulation A filings and any other offering that is exempt from Securities Act registration
- No-action, exemptive, and interpretive requests
- Shareholder proposal filings
- Litigation information filed under the Investment Company Act

If a company is attempting to meet a filing deadline with the SEC, an electronic submission that is filed on or before 5:30 P.M., Eastern Standard Time, will be presumed to have been filed on that business day, whereas any filing submitted after that time will

EXHIBIT 16.4 Form 5

FORM 5: STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

1. Name and Address of Reporting Person	2. Issuer Name and Ticker or Trading Symbol	5. Relationship of Reporting Person(s) to Issuer (check all applicable)
(Last) (First) (Middle)	3. Statement for Issuer's Fiscal Year Ended [date]	___ Director ___ 10% Owner ___ Officer ___ Other (specify below)
(Street)	4. If Amendment, Date Original Filed	6. Individual or Joint/Group Filing ___ Form Filed by One Reporting Person ___ Form Filed by More Than One Reporting Person
(City) (State) (Zip)		

Table I - Nonderivative Securities Acquired, Disposed of, or Beneficially Owned

1. Title of Security	2. Transaction Date	2A. Deemed Execution Date	3. Transaction Code	4. Securities Acquired (A) or Disposed of (D)			5. Amount of Securities Beneficially Owned at End of Issuer's Fiscal Year	6. Ownership Form: Direct (D) or indirect (I)	7. Nature of Indirect Beneficial Ownership
				Amount	(A) or (D)	Price			

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date	3A. Deemed Execution Date, if Any	4. Transaction Code	5. Number of Derivative Securities Acquired (A) or Disposed of (D)		6. Date Exercisable and Expiration Date		7. Title and Amount of Underlying Securities		8. Price of Derivative Security	9. Number of Derivative Securities Beneficially Owned at End of Issuer's Fiscal Year	10. Ownership Form of Derivative Securities: Direct (D) or Indirect (I)	11. Nature of Indirect Beneficial Ownership
					(A)	(D)	Date Exercisable	Expiration Date	Title	Amt or Number of Shares				

Explanation of Responses:

Signature of Reporting Person

Date

be presumed to have been filed on the next business day. However, this assumption shifts to 10 P.M. for the filing of registration statements.

Official submissions to EDGAR must be in either HTML (version 3.2 is the standard as of this writing) or plain text. Anyone who chooses to make a submission in the HTML format is allowed to use hyperlinks between different sections of the same HTML document, and may also include hyperlinks to exhibits that have been included in the same filing. One can also include links to other official filings within the EDGAR database if submissions are made with the new EDGARLink version; however, it is not allowable to include links to documents located outside of the EDGAR database. Hyperlinks are not allowed as a substitute for information that is required to be included in a specific document, even if the required information could be located through a linkage to another document that is also filed through EDGAR.

The SEC does not currently allow video or audio material to be included in submissions to EDGAR, though it is acceptable to include graphic and image material within HTML documents.

It is also possible to make a submission in a PDF (Acrobat) format, but this is considered an unofficial filing that must be accompanied by one of the other two formats. If a PDF file is submitted, only its formatting and graphics may differ from the official filing.

If the submitting entity makes an electronic submission that contains errors solely due to errors in the transmission, and if the submitter corrects the errors as soon as possible after becoming aware of the difficulty, then there shall be no liability under the antifraud portions of the federal securities laws.

In order to protect itself from computer viruses, the SEC will suspend the filing of any document that appears to contain executable code. If such a document is accepted and the code is discovered at a later date, then it may be deleted from EDGAR and the filer will be required to make a new submission of the required data.

There are two cases in which a company can plead hardship and avoid making an electronic submission of data. In the first instance, Rule 201 of Regulation S-T allows a temporary exemption for an electronic filer that is having unanticipated trouble in submitting a report, such as in cases where the transmitting computer fails. A paper-based filing, using Form TH (Notification of Reliance on Temporary Hardship Exemption) is still required in this instance, and must be followed within six days by an electronic submission. In the second case, Rule 202 of Regulation S-T allows a permanent exemption for a few cases where the information to be filed is so large that the filer would be caused undue hardship to do so. The first case requires no SEC approval, whereas the second case does.

The primary document needed for preparing an electronic document for the SEC is its *EDGAR Filing Manual.* This can be downloaded at www.sec.gov/info/edgar/filermanual.htm, or ordered from the Public Reference Room, Securities and Exchange Commission, 450 5th Street, N.W., Washington, D.C. 20549-0102.

FEDWIRE PAYMENTS

Most ongoing informational reports filed with the SEC, such as the Forms 10-Q, 10-K, and 8-K, require no fee. However, other forms, such as the registration Forms S-1 and

S-3, require a payment to the SEC. The SEC will not accept such filings if payment has not yet been received. The most common form of payment to the SEC is a wire transfer, which is called a *fedwire*.

The SEC periodically changes the bank to which these payments must be made. Currently, payments must be sent to the Bank of St. Louis. A company does not need to establish an account at the Federal Reserve Bank in order to remit filing fee payments. Instead, the simplest payment method is to initiate a wire transfer from the company's bank to the Federal Reserve Bank.

To issue a wire transfer, include in the wire instructions the American Bankers Association number for the Federal Reserve Bank, which is 081000210. Then include the SEC's account number at the Federal Reserve Bank, which is 152307768324, as well as the company's central index key (CIK). The SEC assigns a CIK to every company when it initially begins filing activities. The ''CIK'' designation should precede the CIK number; for example, the wiring instructions could read CIK0123456789. An example of the wiring instructions to the SEC follows:

Amount:	$10,000
Receiving bank ABA number:	081000210
Receiving bank name:	Federal Reserve Bank of St. Louis
Receiving account number:	152307768324
Receiving account name:	Securities and Exchange Commission
Originator to beneficiary information:	CIK0123456789

Given the speed with which most companies want their filings to be processed by the SEC, the fedwire is the most common method of payment. However, it is also possible to pay by check. To do so, make the check payable to the Securities and Exchange Commission. On the front of the check, include the SEC's account number (152307768324) and the company's CIK number. To send checks by overnight delivery service, mail to the following address:

Federal Reserve Bank
Government Lockbox 979081
1005 Convention Plaza
SL-MO-C2-GL
St. Louis, MO 63101

To send checks by regular mail delivery, mail to the following address:

Securities and Exchange Commission
P.O. Box 979081
St. Louis, MO 63197-9000

The SEC occasionally changes these payment instructions, so be sure to verify the most recent information on the SEC Web site, at www.sec.gov/info/edgar/fedwire.htm.

To calculate the fee to be paid to the SEC, the form instructions for every form requiring a payment begin with a table with calculation information, titled ''Calculation

of Registration Fee.'' In it, the company itemizes the amount of securities to be offered, the proposed maximum aggregate offering price, and the amount of the registration fee. A sample table follows:

Title of Each Class of Securities to Be Registered	Amount to Be Registered	Proposed Maximum Offering Price per Unit	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common stock, no par value under the ABC Company:				
20XX Employee Stock Purchase Plan	1,000,000	$2.50	$2,500,000	$100

For a company to ensure that it has paid in enough funds to process a filing, it should submit a test filing; the test will return whether there are sufficient funds on hand to complete the filing.

SUMMARY

The information noted in this chapter is applicable in other areas of this book. For example, Chapter 14, ''Obtaining Equity Financing,'' discusses the use of a prospectus that is modeled on the disclosure statement to the SEC described in this chapter. Similarly, Chapter 15, ''Initial Public Offering,'' notes the use of a registration statement that is also discussed here. Finally, Chapter 18, ''Taking a Company Private,'' is almost entirely concerned with the proper completion of the SEC's Schedule 13-E3. Thus, it is evident that the CFO of a public company must deal with the SEC on a variety of topics.

CHAPTER SEVENTEEN

17 Investment Community

INTRODUCTION

The investment market is divided into two halves—the sell side and the buy side. The sell side is the middleman who assists companies in locating funding, or who assists in selling company shares to investors. Sell-side entities include investment bankers and brokerage firms, and they employ analysts, stock traders, investment bankers, and institutional salespeople. The buy side is any entity managing capital funds, such as pension funds, mutual funds, or individual investors. A company can work through the sell side to reach the buy side, or work with the buy side directly. In this chapter, we'll cover how to deal with both sides of the market.

ANALYST'S PERSPECTIVE

A key player on the sell side is the analyst. This person is sometimes perceived as a partially mythical creature who can instantly accelerate or crash a company's stock price, who is constantly demanding more information than the management team is prepared to give, and who becomes decidedly cantankerous when the company's actual results do not attain expected levels. It is useful to understand the pressures faced by analysts and the environment in which they operate, so that the CFO can better support their needs.

The first factor to consider is that sell-side firms now budget for fewer analysts than in the boom years of the 1990s. Since the number of public companies has not declined, this means that analysts have withdrawn their coverage from some companies, usually those with smaller capitalizations. Small-cap companies suffer the most from the decline

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in analysts, because an analyst's recommendation must maximize commissions for the employing sell-side firm, and companies with small capitalizations have an insufficient float to generate much commission volume.

Second, consider the types of companies that an analyst is willing to cover. A large sell-side firm with a massive sales staff is likely to only authorize coverage for larger public firms, since they need to sell massive volumes of stock in order to earn sufficient commission volume. Conversely, an analyst employed by a smaller firm will be more willing to look at smaller companies that are not being provided coverage by larger firms. Thus, a company initially trying to attract analysts should ignore the larger sell-side firms and instead concentrate its efforts on smaller firms that are more likely to be receptive.

A third key factor to consider is the method by which analysts are paid. An analyst is paid to correctly predict the direction in which a company's stock price will move. If correct, the analyst's firm will earn trading commissions on the purchase of the company's stock. Conversely, analysts suffer reduced compensation or are fired if they incorrectly predict stock price movements. This explains why analysts are nonplussed when management reports unexpected earnings levels—analysts can lose their jobs over the resulting stock price decline. Thus, it is critically important to be conservative in providing guidance, as well as open and responsive in issuing changes to guidance. Analysts appreciate the notice, so that they can change their estimates in a timely manner.

Sell-side firms also try to pull in acquisition work or stock placement assistance by dangling the prospect of analyst coverage in front of a company. Since most companies will occasionally engage in either or both of these activities, it makes sense to obtain assistance from a firm that can also provide analyst coverage. Better yet, parcel out this business to multiple firms, so that coverage will be given by several analysts. However, such coverage can be short-lived if a company does not continue to dole out business to the same sell-side firms, so this is not a reliable source of coverage. Also, Section 501 of the Sarbanes-Oxley Act of 2002 states that employees of a broker/dealer who are:

> "... involved with investment banking activities may not, directly or indirectly, retaliate against or threaten to retaliate against any securities analyst employed by that broker or dealer or its affiliates as a result of an adverse, negative, or otherwise unfavorable research report that may adversely affect the present or prospective investment banking relationship of the broker or dealer with the issuer that is the subject of the research report."

Thus, obtaining analyst coverage as part of a broader services deal can be a two-edged sword, since there is no guarantee that the coverage will be favorable.

Finally, analysts are unwilling to anger a company's management with negative ratings, since this could lead to their being excluded from access to the company. Accordingly, they use a broad range of recommendation types that keep them from having to clearly label a company with either a buy, hold, or sell rating. Instead, the "buy" category is also divided into (in increasing order of fervor) moderate buy, long-term buy, outperform, and strong buy. Many analysts will assign a rating of *moderate*

buy, or some similar term, to a company's stock in order to ameliorate a management team when its company's earnings performance is mediocre, without taking the more drastic steps of assigning a hold or sell rating. In reality, a company whose stock is assigned a moderate buy rating might never be brought to the attention of the analyst firm's sales staff.

These observations lead to some conclusions regarding how to work with an analyst. First, do not repeatedly make outrageously high earnings claims, because this will result in wildly gyrating stock prices when earnings estimates are not met, and again when management makes stratospheric claims yet again. Under these circumstances, analysts will be at risk of not estimating earnings properly, and will likely drop their coverage of the company. Second, protect every analyst's job by issuing consistently conservative guidance that is based on clearly understandable assumptions. In addition, adopt and publicize a business plan that results in a quarterly earnings pattern consistent with the plan. Analysts will then feel that the company is providing them with sufficient information to anticipate and understand the reasons for changes in actual earnings. This approach may even result in coverage by additional analysts, because they know that any earnings estimates and recommendations they issue will very likely be correct. Thus, conservative guidance, consistently applied, is the key to the long-term happiness of an analyst.

FINDING THE RIGHT ANALYST

An analyst usually specializes in a single industry, and then on only a few companies within that industry. It takes a considerable amount of effort to thoroughly understand an industry, so analysts rarely depart from their chosen industries to provide coverage of companies in other areas. Also, they generally provide coverage to companies whose market capitalizations fall within a predetermined range. Thus, the pool of analysts who might be interested in providing coverage for a specific company is relatively limited. However, if they already cover a company's industry, they might be willing to provide coverage, since this represents a minimal amount of additional work for them. Consider using the following approaches to finding these analysts:

- Determine who provides coverage for comparable companies. Some public companies list on their Web sites the names and contact information of the analysts who cover them. This is especially common for smaller companies who have only limited coverage. Larger firms being covered by dozens of analysts rarely list analyst contact information.
- Hire an investor relations firm that has established contacts with the analyst community and that can provide a short list of the most likely analyst candidates.

Once a pool of likely analysts has been developed, the next step is to contact them. The best approach is to provide them with a stream of useful information, such as industry data that they do not already have. By doing so, analysts are more likely to at least include a company in their industrywide research reports. Also, providing this

service creates a sense of obligation, so that analysts are at least more likely to agree to an initial meeting in which the company can present an overview of its operations. This initial meeting is covered in the next section.

SELL SIDE: ANALYSTS

The following discussion assumes that a company is large enough to attract the attention of analysts. It is extremely difficult to obtain analyst coverage if a company's market cap is less than $100 million to $200 million. If a company's market cap is too small, the CFO should not waste time trying to attract analysts who are unlikely to be interested, and instead should shift the attention to specific types of brokers who are amenable to micro-cap situations, as discussed later in this chapter.

When planning for a meeting with analysts, always send them an advance packet of preparatory information. This packet should include a fact book about the company's strategy, performance, and products. Analysts must complete a considerable amount of analysis before issuing a recommendation, so issuing them the fact book will allow them to complete an initial set of questions, which they will then pose during the meeting. Thus, sending advance information allows an analyst to maximize his or her meeting time.

When preparing for an analyst meeting, it is extremely important to anticipate all questions that might be asked. If a manager were to appear befuddled by a question, the querying analyst might be concerned about the manager's ability to run the business, and so would decline to provide coverage of the stock. To avoid this problem, maintain a list of questions that have been asked during meetings with other analysts, and supplement the list with questions asked during investor conference calls or other investor meetings. In addition, brainstorm the types of questions that might be asked in response to current or prospective changes in the business. If other comparable companies are hosting conference calls prior to the analyst meeting, then listen to those calls to see if analysts are asking any new questions that have not been heard before. With these questions in hand, construct a standard set of answers, and have a dress rehearsal with the managers who will attend the analyst meeting.

An analyst expects to be provided with a considerable amount of information about the company. During the meeting, the CFO should address the types of products and services that the company sells, which ones provide the bulk of the company's revenues, and the geographic areas and markets in which the products and services are sold. This sales discussion should also include the overall size of the company's markets, the future of those markets, its share of those markets, the market growth rate, and management's expectation for its eventual market share. Analysts are very interested in competitors, so be prepared to discuss primary competitors, their sales volume and market share, and their strengths and weaknesses. If there have been acquisitions in the past or are likely to be in the near future, then also be prepared to discuss the criteria the company uses to select acquirees, and how it integrates acquirees into the rest of the organization. In addition, be prepared to talk about growth goals, how the company plans to meet them, and the company's recent track

record for meeting those goals. Finally, analysts concentrate heavily on how various risks will impact a company's prospects, so cover the key risks faced by the company and how the company is prepared to protect itself from them.

In addition, analysts are very interested in intangible issues, such as the ability of the management team to run the company. For this reason, they will likely probe management's commitment to long-term planning, profit planning, and control systems, all of which are cornerstones of long term management success. In addition, they will probably want to meet with the managers of the product development and marketing departments, to ascertain their skills in these two key areas. Given the likelihood of this level of questioning, the CFO should ensure that anyone who may come in contact with an analyst is coached in the legalities of disclosing information.

A key element of an analyst meeting that has a major bearing on the analyst's target price for the company's stock is the discussion of comparable companies. Unless persuaded otherwise, most analysts will base their target stock prices on the prices of the stocks of comparable companies in the same industry. For example, if the stock prices of comparable companies result in market capitalizations that are two times revenues, then analysts will assume the same ratio for all companies in the industry. The analyst might not even bring up this issue, assuming that the usual industry comparisons will be used. If the CFO feels that the company is more readily comparable to other companies, perhaps outside of the industry, then this is a good time to discuss which companies are better ''comps'' and why the analyst should use them as such. In short, define a group of comps for the company, or else analysts will independently do so, likely resulting in lower target prices being included in analyst reports.

If an analyst then decides to provide coverage of the company, part of her research will include in-depth discussions with the company's customers, suppliers, and employees to verify that the information presented to her by the company is correct. These discussions will also include a search for undisclosed issues that could potentially affect the company's financial performance. Though this may appear to be an undue degree of prying, the management team must become used to this detailed level of review on an ongoing basis. Indeed, the CFO can assist analysts with this review work by providing contact information.

After completing a detailed review of the company, the analyst creates a research report that includes an earnings estimate, a recommendation, and a price target for the stock. The analyst will periodically update the report as new information about the company or its industry appears, if that information will result in a material change in the earnings estimate and price target.

After an analyst issues a recommendation, the CFO should review it in detail. Analysts are among the most knowledgeable independent observers of a company and its industry, so their commentaries are worthy of considerable review and discussion within the management team. In particular, note any commentary regarding how an analyst has arrived at a particular estimate of revenue or profit, especially the assumptions used to arrive at those numbers. By understanding analyst assumptions, it is possible to predict their behavior when the company's metrics change in the future. Also, if an analyst points out in a report a perceived flaw in the company's

strategy or operating assumptions, the flaw might be indicative of a general marketplace perception that is keeping the company's stock from achieving its full valuation. If so, treat these perceived flaws as opportunities for strategic changes, or perhaps as grounds for additional education of the marketplace to mitigate the perceived impact of the flaw.

NEGATIVE ANALYST REPORT

The reason for attracting the attention of analysts is to obtain favorable research reports, which will presumably result in an increase in the price of a company's stock. However, favorable reports do not last forever. At some point, the stock price will reach an analyst's target level, after which the analyst will likely change from a buy recommendation to a hold or sell recommendation. Also, some analysts may occasionally act on incorrect information or incorrectly interpret information that results in a negative report. Further, junior analysts with little industry experience are more likely to issue earnings estimates that vary significantly from what a company expects to achieve. Management should expect these negative reports from time to time, and should not be flustered or react angrily to them. Instead, the best approach is to not comment on the reports at all, and instead provide a steady flow of information to the investing public, which helps analysts arrive at high-quality earnings estimates that will eventually result in renewed buy recommendations. The most aggressive action a CFO should ever consider is contacting an analyst's research director to discuss perceived factual errors in a research report that might have negatively impacted the recommendation. A key point is that analysts will publish earnings estimates no matter what information they have available, so it is always in the company's best interests to give them more information, rather than less.

The worst reaction to a negative analyst report is a public rant (which usually seems to occur during a quarterly conference call), which merely gives analysts an unflattering view of the management team. Also, it is not wise to cut off an analyst from access to company information or mailing lists, just because the analyst issued a negative report. By doing so, the analyst now has even less information to use for future reports, which might result in increasingly inaccurate recommendations.

SELL SIDE: BROKERS

There are more than 634,000 brokers registered with the Financial Industry Regulatory Authority (FINRA). Maintaining contact with each of these brokers over a long period of time is not cost-effective, given the relatively small volume of share purchases that each one may generate. Given this problem, the best way to maintain broker relations is to determine which ones are considered opinion leaders by their peers, and ply these key individuals with a continuing stream of information about the company. If the opinion leaders are convinced, they will pass along their

opinions to their broker networks, which, in turn, can create a significant amount of share purchase volume.

An excellent approach for meeting brokers is to sponsor a gathering at a public venue shortly after the markets close. Alternatively, consider sponsoring a luncheon at a brokerage firm (where participation rates are usually very high), or at a popular local restaurant. In either case, the company pays for all food and drinks provided. The presentation should be short, certainly no more than 30 minutes, and should give brokers an overview of the company's operations and prospects. The emphasis in this type of presentation is much less on numerical performance, and more on a company's story. Have written materials available for any brokers interested in additional information. Unlike analyst meetings, which are one-on-one, broker meetings usually include many participants, who are free to informally arrive or leave during presentations. The better brokers who will be of the most assistance in creating new stock sales may be difficult to identify or chat with, since they are so busy that they are likely to arrive late and leave early.

If a company has a low level of market capitalization (a *micro-cap*), it will have a difficult time attracting brokers, because most of them are told which stocks to pitch to their clients, and those stocks almost always involve companies with larger capitalizations. To avoid this problem, do not waste time contacting brokers with conservative clients (usually those approaching retirement age), since these clients are unlikely to put their money into a higher-risk investment. Also, only deal with brokers having at least ten years of experience with the same firm, since these individuals are more likely to have been given some leeway in making stock recommendations. These more senior brokers are also more likely to have high-net-worth individuals as clients, who are more likely to make investments in micro-cap companies if there is a significant level of perceived reward.

Another alternative for locating brokers willing to recommend micro-cap stocks is to call local brokerage firms after trading hours, and ask the branch manager if any of their brokers specialize in companies with lower market capitalizations. Another option is to hire an investor relations firm that already knows these brokers, and that can arrange introductions with the CFO.

Brokers do not need as detailed a set of information as would be required by analysts. Instead, they require information about only a few key issues, which they will pass along to their clients. They are looking for stock that is actively traded, so their clients can easily buy and sell without any liquidity problems. Also, a company should have a solid performance record, in the form of multiple quarters of gradually increasing profitability. Finally, a company should have excellent visibility in the marketplace, in the form of active public relations and investor relations programs. If these three factors are in place, a company has the capability to attract the attention of a large number of brokers.

Brokers are especially appreciative if the company creates for them a prepackaged set of sales pitches and supporting information that they can use to pitch the company to their clients. There can be several variations on the sales pitch, which the company can create based on conversations with key brokers. In addition to the sales pitches, consider issuing reprints of articles about the company, which brokers can pass along to their clients.

SELL SIDE: INVESTMENT BANKERS

An investment banker locates money on behalf of a company. The usual process is that the company and investment banker mutually create a multiyear forecasting model of the company's likely growth rate, cash flow, and valuation (based on the valuations of comparable public companies). The investment banker then sends a summary of the model and the company's operations and strategy to a select group of fund managers to obtain an initial expression of interest. If some interest is expressed, the investment banker helps the company's management team create a presentation that ranges in length from 30 to 45 minutes, and coaches them through several iterations of the presentation. Once ready, the management team goes on a road show to pitch their case to the fund managers who expressed initial interest. Usually, this means making multiple presentations per day in such cities as New York, Chicago, San Francisco, and Dallas, where many of the funds are located. The investment banker then contacts the fund managers to see who is interested in making an investment and under what terms, and then closes the deal. The investment banker is usually paid based on a sliding scale of the amount of funds raised.

When picking an investment banker, base the decision on their experience with the company's industry, because only certain fund managers will invest in that industry, and the investment banker must have relationships with those managers. Also, a company will very likely require additional funding at some point in the future, so it makes sense to select an investment banker who can be a trusted advisor and confidant.

SELL SIDE: INVESTOR RELATIONS SPECIALISTS

There are investor relations specialists who will represent a public company to brokers and analysts. They have extensive contacts with the sell side, and will make many contacts on behalf of a company. They do not engage in analyst or broker meetings, nor do they fulfill any public relations functions. Their stock in trade is strictly their sell-side contacts. These specialists are most frequently retained by smaller over-the-counter (OTC) companies with small floats and low stock prices, in hopes of achieving rapid stock price increases. Though the desired price increase may very well occur, the increase will likely be a short-term one if it exceeds the underlying fundamentals of the company.

Many sell-side specialists agree to be paid in stock, since smaller public firms are not always able to pay in cash. This gives the specialists a strong incentive to increase the price of the stock, since it increases their own compensation. However, given the thin trading volumes of the companies they represent, specialists can have difficulty liquidating their stock holdings.

If a company chooses to deal with sell-side specialists, they should supplement their investment in this activity with other public and investor relations activities and operational improvements, so that the resulting stock price increases are not short-lived, but rather, can form the foundation for long-term value for investors.

BUY SIDE: TYPES OF INVESTORS

There are several types of investors, each one with different reasons for buying, holding, and selling stock. The first type focuses on high *growth rates*; if a company can maintain a high rate of revenue or earnings growth, then investors will continue to buy its stock, but will also dump the stock at the first report of a slowdown in growth. Another investor type focuses on the *value play*. They will only buy when a stock is at a very low price, and will sell at a point when they think the stock is fully valued. This investor tends to retain stock longer than a growth investor, because it can take a considerable amount of time for the stock to reach their predetermined price point. This type of investor might snap up a large proportion of stock if the stock price has cratered, and can be very effective in keeping the price from heading even lower. A third investor type focuses on *assured returns*, and so will buy stock when the company offers dividends, and will disappear if dividends are cut. Yet another type of investor, variously known as a technical analyst or chartist, focuses on *stock momentum*. These investors forecast stock prices based on their historical behavior, rather than on a company's future prospects.

Within these categories, investors frequently restrict their activities to specific industries that they expect will achieve outsized returns. They may also focus on companies within a specific range of market capitalizations, which they feel will perform better under certain economic circumstances.

Although there is a tendency to pigeonhole all investors into the various categories just noted, a significant proportion of investors are holding the company's stock for no particular reason at all. In many cases, they have inherited the stock, and have no plans or expectations for it. These stockholders are unlikely to sell their existing holdings or to acquire new stock. Instead, they will passively retain their stock positions no matter what actions the CFO takes.

There are points in a company's life cycle when all of these types of investors will buy and sell its stock, resulting in a continually varying mix of investors. The CFO might consider many of these investors to be transient and therefore undesirable, as they continually shift in and out of company stockholdings. Nonetheless, a public company is likely to experience all of these types of investors at some point during its life.

BUY SIDE: INSTITUTIONAL INVESTORS

A professional investor is usually the manager of a fund, such as a pension fund or mutual fund, and is commonly described as an institutional investor. An analyst working for or serving the needs of a fund is considered a buy-side analyst.

Before contacting institutional investors about buying company stock, the CFO must determine their investment strategies to see if the company meets their criteria. For example, about 30 percent of all institutional stock portfolios invest in stock indexes, where the amount and mix of shares held are automatically determined by the index. If a company is listed on an index, then institutional investors will buy it. If not, then they have no interest.

Also, institutional investors do not usually invest in micro-cap companies, because their stock is so thinly traded. When there is minimal trading, a fund manager will have great difficulty acquiring a large volume of shares, and similarly will have difficulty later in selling those shares without initiating a stock price decline. Also, if a company's stock is not listed on an exchange, then a fund manager will not consider it to be a viable investment. In these situations, the CFO should not expend any effort to contact institutional investors, because they will not purchase company stock under any circumstances.

There is also a type of institution that a company does *not* want as an investor in its stock—the shareholder activist. These investors may attempt to have their nominees elected to the board of directors, or push unwanted measures onto the annual shareholder ballot, or publicly demand other changes to the company's operations or governance. To some extent, there is little a CFO can do to prevent such institutions from acquiring its stock. However, the CFO should certainly investigate the level of shareholder activism of any institution before arranging a meeting to pitch the company's prospects—it would hardly do to encourage these institutions to invest in the company!

The discussion thus far has been on those institutions *not* to pursue for an investment. Conversely, there are several ways to locate those funds that would be acceptable investors. First, contact an investor relations consultant who has contacts among the fund managers, and who knows the preferred investment types of those managers. Also, review the Web sites maintained by the various funds, where they frequently outline their investment strategies. In addition, continually review the industry news to see who is quoted in feature articles. In many cases, a company manager will discuss how the company grew following an investment by a specific institution.

Another option is to look for institutions that invest in peer companies having similar investment characteristics, such as being in the same industry, or having a similar growth rate in revenue, profits, or cash flow. It is also possible that these peer companies may not be in the same industry. Once this peer group is established, comb the institution Web sites to determine which ones are investing in the peer group. Then contact their investment managers to point out the similarities between the company and the companies in which they currently invest, and to ask for a familiarization meeting.

Whichever search method is used, the key point is to target fund managers, investment advisors, or buy-side analysts who either invest or recommend investments based on general guidelines within which they can choose the stocks of individual companies. If these people are locked into only very specific investments by their fund investment policies, then there is no point in contacting them.

If institutional investors are interested in investing in a company, one of their first actions is to delve into what is said in an analyst's report about that company, without paying much attention to the actual rating given. They understand that the rating is, to some extent, assigned based on the analyst's unwillingness to offend management, and so might not exactly reflect the contents of the report. Consequently, be thoroughly familiar with the contents of analyst reports, and be prepared to answer questions from institutional investors who are equally familiar with the same reports.

The CFO needs to understand how institutional investors expect to be treated. First, they expect a tailored one-on-one meeting, where management makes a private presentation to them, and sets aside sufficient time to answer all of their questions. Second, they will expect management to conduct a quarterly conference call, so that they can receive the latest information about the company's operational and financial results, and have an opportunity to pose questions to management. Third, they do not want to be buried with annual reports and promotional materials, since they are already wading through enormous amounts of material sent to them by other companies. Instead, prepare a summarized version of key information from public filings, and send it to them in the format they prefer. Although this is sometimes a great deal of work, retaining an institutional investor is important, so you must pay special attention to their needs.

Though most CFOs would love to have a few prominent funds invest in their company's stock, be aware that there are repercussions to having such investors. The main problem is that they accumulate so many shares that the trading environment becomes illiquid, with few remaining shares available for trading. Also, when institutions sell their stockholdings, the volumes sold are so large that there is a significant chance of a stock price decline.

BUY SIDE: INDIVIDUAL INVESTORS

In an ideal world, individual investors are the best kind of investor because they tend to be more loyal than institutional investors, holding their stock for much longer periods of time. These ''sticky'' investors are prized, because their steadfast refusal to sell stock keeps the stock price and volume of sales from gyrating excessively.

The best possible kind of individual investor is the high-net-worth investor, since a few contacts by the CFO may result in significant stock purchases. To locate these individuals, consider retaining an investor relations consultant who has a contact list. Alternatively, use the network of existing high-net-worth investors to determine who they use as advisors and reach out to these advisors to spread information about the company through their other contacts. Once high-net-worth investors become interested in the company, be prepared to assist them in obtaining additional information, because they are unlikely to have much research support.

Another source of new investors is the owners of the company's products. If a company is in the consumer products business and has a reputation for high quality, then it is a good bet that consumers will be sufficiently enamored of the company to buy and hold its stock. To attract these investors, put information about the company's public status on product packaging. Conversely, consider turning current investors into product consumers by offering discounts on company products to investors. The main risk with this approach is ensuring that products continue to have a high level of quality. If the company begins to have product problems, then the investors originally attracted by the product line may leave in droves.

It might also be possible to target investors in competing firms. If so, the CFO must prove to these investors why purchasing the company's stock represents a superior investment over that of the competitor. This can be a difficult sales proposition if the

competitor is the dominant player in the market, since these firms tend to generate the best investor returns. Another difficulty with this approach is that the targeted investors may feel that their current portfolio mix represents a sufficient weighting in the company's market, so they will only invest in the company if they also sell their holdings in the competing firm.

Another way to attract investors is through the brokers of existing investors. If the current group of investors bought the company's shares based on a broker recommendation, then building a direct relationship with that broker may very well result in the acquisition of new investors through the same broker. This requires a long-term commitment to excellent broker relations, including the retention of key brokers on all mailing lists, as well as invitations to them to participate in periodic investor conference calls. If a company drops its efforts in this key area, then expect those investors brought in by brokers to eventually sell their shares.

If a company has a low capitalization, then the CFO will have an especially difficult time locating investors. Usually, only high-net-worth individuals are willing to invest in micro-cap stocks. These people are typically looking for outsized growth rates in excess of 20 percent for revenue, income, or cash flow. They need high returns, because the transaction costs of buying and selling micro-cap shares are higher than for larger-cap stocks, and they must be reimbursed for the added risk. For example, a key transaction cost for a micro-cap stock is the impact that a large buy or sell order has on the market price, which can shift significantly as a result of the order. There is also a time delay in obtaining or selling stock (since there may be few shares available for trading), during which time the stock price may shift unfavorably for the investor. These costs can make it several times more expensive to deal in micro-cap stocks than in stock having a large float.

Another option for locating investors is the *non-deal road show*. This is a presentation to investors with the objective of spreading information about the company. Non-deal road shows are generally scheduled four times per year, immediately after the quarterly conference call. By using this timing, the CFO can speak on most topics without violating fair disclosure rules, since all key topics were fully disclosed during the preceding conference call. When scheduling non-deal road shows, consider setting them up in a broad range of geographic areas. The reason is that many CFOs focus their attention on the region near company headquarters, which eventually results in saturation of the local market. By shifting presentations away from this home market, the company can tap a much larger pool of investors.

When arranging a non-deal road show, it is best not to present directly to buy-side investors without the involvement of a sell-side firm. The reason is that the sell side can earn commissions from the eventual purchase of company stock that may result from the road show. The potential earnings may result in additional sell-side analyst coverage, which, in turn, yields more positive press, and therefore an even higher stock price. To maximize this effect, have a different sell-side firm arrange investor presentations in each city so that more sell-side firms are beholden to the company, resulting in more analyst coverage. If there is currently no interest from sell-side firms, then consider employing an investor relations firm with contacts in the targeted geographic regions to arrange for investor presentations.

Clearly, there are many ways to locate prospective investors. The real problem is doing so in a cost-effective manner. The CFO should try all of the options noted here at least once, and then narrow down the search methodology over time, based on which methods return the largest number of stock sales for the least effort.

BUY SIDE: PRESENTATIONS TO INVESTORS

It is customary to give presentations to groups of individual investors. Given the millions of potential investors available, this means that a company should have a perpetual schedule of investor meetings; some large public companies schedule as many as 200 investor meetings per year. Only institutional investors warrant one-on-one meetings, because they can potentially invest in a large proportion of a company's stock.

The goal of the investor presentation is to be short and to the point. Ideally, such a presentation should last no more than 15 minutes, and use a maximum of 30 slides, which the presenter should strictly adhere to in most situations. First, make a brief statement about the company's primary strengths and competitive factors, as well as the core concept that makes it a good investment. Second, describe its strategy as succinctly as possible. Third, describe the company itself: what it makes, how it distributes to customers, the size of its markets, and why the company chooses to be in those markets. If significant to the business, it may also be worthwhile to mention the barriers to entering the company's business, and how the company maintains those barriers. Finish with a description of the company's financial structure, and then open the meeting for questions. The focus of the presentation is on giving investors a taste of the company, so that they learn enough in a short period of time to decide if they should request additional information that could lead to an investment. The intent is *not* to bury attendees with an overwhelming amount of information.

And a final thought—never, ever cancel a scheduled presentation, even if there is an excellent reason for doing so. Following a cancellation, investors will think that something has happened at the company that management wants to hide, and will have a predilection to abandon the stock, or perhaps even sell stock short.

SUMMARY

The sell side of the investment market is of great use to the CFO, because it can not only attract capital for the company but also contribute greatly to increases in its stock price. For example, several studies have shown that the greater the number of analysts following a company (which implies greater publicity for the company), the higher the price-earnings multiple of the stock. Because of its importance, the CFO must deal with the sell side in an appropriate manner, which involves the consistent provision of conservative guidance to the marketplace that is supported by easily understandable assumptions.

A great deal of planning is required before making any buy-side contacts. The CFO should evaluate potential investors to determine how investor relations activities are

to be prioritized for each one and what types of communications are to be used. A crucial part of this analysis is determining which types of investors are underserved and which ones are the most likely to retain company stock over the long term. The ideal plan is one that results in a shift from a small number of owners with massive holdings to a larger shareholder base with each shareholder retaining proportionally fewer shares.

CHAPTER EIGHTEEN

18 Taking a Company Private

MANY COMPANIES FIND THAT the cost and liability of operating a publicly owned business is not worth the hassle, and elect to remove themselves from public trading. This involves the filing of a lengthy schedule with the Securities and Exchange Commission (SEC), which is described in this chapter.

GOING PRIVATE TRANSACTION

If a publicly held company wishes to go private, it must disclose information that is itemized under the SEC's Rule 13e-3, which is located in the Securities Exchange Act of 1934. This rule applies to situations where a company plans to buy back its securities, as described in the next section.

The information required under these circumstances must be filed on Schedule 13E-3, to which amendments must be added if there are material changes to the information presented on it. The primary information listed on the schedule includes complete company financial statements and various financial information on a per-share basis. The company must also include information regarding the identity of the persons filing the schedule, terms of the arrangement, future plans, the reason for going private, and the source and financing terms for the funding required to complete the transaction. A key goal of this filing (from the perspective of the SEC) is to force the company to describe the impact of the going private event on unaffiliated security holders.

RULE 13E-3

The SEC's Rule 13e-3 applies to any transaction where equity securities are being purchased by the issuing company, or when a tender offer for those securities is being made by the issuing company or an affiliate. Such a transaction must result in having

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less than 300 people hold the equity security or the removal of that class of equity securities from being listed on a national exchange.

When an equity security is withdrawn from circulation by the issuing company, the rule also states that information about the withdrawal shall not be misleading or attempt to defraud a security holder.

The rule requires the issuing company to file Schedule 13E-3 (see next section) prior to withdrawing a class of securities, as well as to file amendments to it to reflect any material changes in the information itemized in the original filing. These amendments will be concluded with an amendment reporting the final results of the withdrawal transaction.

The rule further requires that the issuing company disclose to security holders the following information:

- A summary term sheet
- The purposes, alternatives, reasons for, and effects of the transaction
- Fairness of the transaction to the security holder
- Reports, opinions, appraisals, and negotiations related to the transaction
- Information concerning the rights of the security holders to conduct appraisals
- All other information listed in Schedule 13E-3, except for exhibits (a ''fair and adequate summary'' can be substituted for this information.)

If there are changes to the information offered to security holders, then the rule requires that these changes be promptly reported to them. In any event, the original set of disclosures must be issued to the security holders no later than ten business days prior to any withdrawal transaction. If securities are held in trust for securities holders by a broker/dealer, then the issuer must forward these information materials to the broker/dealer, with instructions to forward it to the security holders.

These reporting requirements are not required if the issuer offers security holders another equity security in exchange for the one being retired, but only if the replacement security has essentially the same rights as the old security, including voting, dividends, redemption, and liquidation rights, or if common stock is offered. The reporting is also not required if the security withdrawal is already allowed under the specific provisions itemized in the instrument creating or governing that class of securities.

FILLING OUT SCHEDULE 13E-3

Schedule 13E-3 must be filed with the SEC prior to the withdrawal of securities by the issuing company. Some elements of this schedule may also be sent to the security holders, as noted in the last section. This schedule is essentially a full and complete disclosure of the withdrawal transaction.

The lead page of the schedule requires one to note the name of the issuing company, the name of the person filing the statement, and the title of the class of securities to be withdrawn under the terms contained within the schedule. The contents of the remaining 16 sections of the report are as follows:

1. *Summary term sheet.* This term sheet must describe the primary terms of the proposed transaction, yielding sufficient information for security holders to understand the basic structure and terms of it. All information in this summary should reference a more detailed discussion in a separate disclosure statement that is sent to the security holders.
2. *Subject company information.* State the name and address of the company. In addition, note the exact title and number of shares outstanding in the security class to be retired. Further, describe the market in which the securities are traded, as well as their high-low sale prices for each quarter in the past two years. Point out the frequency and amount of any dividends paid during the past two years, as well as any restrictions on the company's ability to pay dividends. Also, note the date and size of any public offering of the securities to be retired, if they occurred within the past three years. Finally, mention any prior purchases of the subject security within the past two years, including the amount and range of prices paid.
3. *Identity and background of filing person.* State the name and contact information for the person filing the schedule. Also list the person's current occupation and the name of his or her place of employment, as well as this information for the past five years. Finally, state whether the person was convicted of a criminal activity in the past five years, and if so, when and where the court proceedings took place. This includes any judgment blocking the person from future activities subject to federal or state securities laws.
4. *Terms of the transaction.* List the primary terms of the proposed purchase transaction, which should include the total number and class of securities that the company wishes to buy, the price offered for them, and the expiration date of the offer. Also, note if the offering period will be repeated or extended, and the date ranges when current security owners can withdraw from sale any securities they have tendered under the terms of this agreement. Further, describe the procedures to be used by security holders for tendering and withdrawing securities. If the company only intends to purchase some of the outstanding securities, then describe how purchases will be made on a pro rata basis, as well as what will happen in the event of an oversubscription. In addition, point out any material accounting treatment or income tax consequences as a result of the transaction. Also, list any variations on the standard set of purchase terms if they differ by security holder. For those security holders who may object to the transaction, itemize any appraisal rights they may have. Finally, if other securities are being offered as a trade for the subject securities, describe any arrangements the company may have to offer them for public trading.
5. *Past contacts, transactions, negotiations, and agreements.* List any transactions occurring in the past two years between the filing person and the company if they are more than 1 percent of the company's revenue, or between the filing person and an officer of the company if they are more than $60,000. Also, describe any transactions or discussions between the filing person and the company during the past two years that addressed any merger or acquisition, tender offers, director elections, or significant asset sales. Finally, as a blanket disclosure, note any other

arrangements between the filing person and any other person regarding the company's securities, which can include security transfers, security votes, joint ventures, loan arrangements, and loan or loss guarantees. This notation should include securities that are pledged in any manner, such that a different person could obtain security voting rights.

6. *Purposes of the transaction and plans or proposals.* Describe how any acquired securities will be treated, such as retirement or being held in treasury. Also, cover any plans for the company's subsequent merger, liquidation, or sale of major assets, as well as any prospective changes in the company's dividend policy, debt level, or capitalization. Further, note any planned changes in the size or structure of the board of directors, as well as any changes in the management team or its employment contracts. Finally, as a blanket disclosure, note any other prospective material changes to the company's structure or business.
7. *Purposes, alternatives, reasons, and effects.* Describe the underlying reason for the transaction, as well as any alternatives to it that were considered and why they were rejected in favor of the proposed transaction. Further, note the impact of the transaction on the company, which should include its federal tax consequences.
8. *Fairness of the transaction.* State whether the company thinks the proposed transaction is fair to those security holders not affiliated with the company, as well as the factors considered in determining fairness. If any company director either abstained from or rejected the vote for this transaction, list that person's name and the reason for his or her vote. In addition, state if the transaction was approved by a majority of the unaffiliated directors. Further, note whether the unaffiliated directors have retained an unaffiliated person who represents the interests of the unaffiliated security holders in constructing the terms of the transaction. Also point out if the transaction requires the approval of a majority of the security holders.
9. *Reports, opinions, appraisals, and negotiations.* State whether the company has received an outside party's appraisal of the proposed transaction; if so, list the appraiser's name, as well as his or her qualifications, and any material relationship between the appraiser and the company, either in the past or prospectively. Also, describe the method used to select the appraiser, and if the appraiser recommended the amount of consideration to be paid as part of the transaction. Further, summarize the contents of the appraisal report, including the procedures followed, its findings and recommendations, and any limitations imposed on the appraiser by the company. Finally, state that the full appraisal report is available for review by security holders.
10. *Source and amounts of funds or other consideration.* Note the source and amount of funds that will be used in the proposed transaction, as well as any material conditions that will be imposed on the company in order to obtain the required funds. Also, describe any alternative financing plans that have been arranged in case the primary source does not work. If the required funds are coming from a borrowing arrangement, then summarize the loan agreement. Further, describe all costs to be incurred as part of the transaction, such as legal, accounting, and appraisal costs.

11. *Interest in securities of the subject company.* List the number and percentage of the subject securities owned by each company officer or director. Also, describe all transactions involving the subject securities within the past 60 days, including the persons involved, the transaction dates, the amounts of securities involved, and the price per share.
12. *The solicitation or recommendation.* State if any company officer or director intends to sell securities owned by that person, as well as how each of these people intends to vote their securities in regard to this transaction. Also, state if any person listed in this section has made a recommendation in regard to this transaction, and the reasons therefore.
13. *Financial statements.* If this information is sent to security holders, one can instead include summarized financial information. If so, instructions must be included in the schedule for how the security holders can obtain more detailed financial information.
14. *Persons/assets, retained, employed, compensated, or used.* List all people who will make solicitations related to the proposed transaction, including the terms of their employment and compensation. This should include any company officers or employees working on the transaction.
15. *Additional information.* Provide any additional material information that will keep the information contained in the schedule from being misleading to the reader.
16. *Exhibits.* There are a number of exhibits to be attached to the schedule. They should include any additional disclosure materials issued to the security holders, such as going-private disclosure documents, related loan agreements, appraisals, and a detailed discussion of security holder appraisal rights.

The statement must be signed by the filing person or that person's representative (including the representative's authorization to sign). Once completed, file eight copies of the schedule with the SEC.

300-SHAREHOLDER LIMIT

In order to go private, a company must have fewer than 300 shareholders *of record*. This means that the company's stock transfer agent must have 299 or fewer shareholders listed in its database. However, some of those shareholders of record can be the brokers with whom shareholders have placed their stock certificates. Thus, a single broker in the stock transfer agent's database may represent the shares of a multitude of shareholders.

Because brokers can represent shareholders in the calculation of shareholders of record, a company can actually have far more than 300 shareholders and still qualify to go private. Thus, one would think that the most common strategy for going private is simply to encourage shareholders to shift their stock certificates to brokers. However, the possibility of a *broker kick-out* makes this a less tenable alternative. In a kick-out, a broker returns stock certificates to their owners once a company goes private. Since a kick-out is at the option of the broker, one can never tell when the number of shareholders of record may suddenly jump above the 300-shareholder limit.

Consequently, because of the danger of a broker kick-out, it is usually better to reduce the number of shareholders by other means.

FORM 15

The going-private transaction is much easier if a company has fewer than 300 shareholders. In this case, it can simply file the one-page Form 15, declaring that it no longer plans to fulfill any ongoing reporting requirements to the SEC. If the company has previously used the Schedule 13E-3 to reduce its shareholder base to a level below 300, then it also files the Form 15.

Thus, the going-private transaction is essentially a two-step process. If a company needs to reduce its shareholder base to a level below 300, then it begins with a Schedule 13E-3 and files a Form 15 once it has attained the sub-300 goal. If the company is already below 300 shareholders, then it simply files the Form 15.

SUMMARY

Filling out the 13E-3 schedule described in this chapter is a time-consuming process. The IRS estimates that an appropriate interval for doing so is 150 hours, so be well advised to use a project team to work through this lengthy document. Also, be sure to have legal counsel review it, and also subject it to accuracy reviews, so that security holders cannot later claim there are any inaccuracies in the schedule that give them a reason to sue for damages of any kind. If completed properly, the schedule is the foundation document for a successful withdrawal of securities from public ownership, so a company can go private.

PART SIX

Management

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CHAPTER NINETEEN

19

Risk Management—General Concepts

SOME WELL-MANAGED COMPANIES HAVE fallen because they did not pay attention to risk. For example, it is difficult to recover from a fire that destroys a data center or production facility, or from the theft of all one's securities and cash. Though rare, these occurrences can be so catastrophic that it is not possible to recover. An otherwise healthy organization is destroyed, throwing many people out of work and eliminating the equity stake of the owners.

On a lesser scale and much more common are the lawsuits that nearly every company must face from time to time. These may relate to employee injuries, customer or supplier claims regarding contracts, or perhaps sexual harassment or some form of discrimination. These lawsuits do not normally end a company's existence, but they can cripple it if awards are excessive or the company is not in a solid financial position to begin with.

This chapter covers the risk management planning, policies, and procedures that keep a company from being seriously injured by these and other types of risk-related problems. In addition, it notes the role of the risk manager in mitigating a company's risk by modifying internal systems as well as by purchasing insurance. The types of insurance that a company can buy are also discussed, as well as how to select a broker or underwriter to help service a company's needs and how to evaluate the health of an insurance carrier. The chapter concludes with coverage of how to administer insurance claims, and how to write a risk management report that clearly identifies a company's risks and how they are being addressed.

The more specialized area of foreign exchange risk management is addressed separately in the next chapter.

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RISK MANAGEMENT POLICIES

A company must determine the amount of risk that it is willing to undertake. When the board of directors attempts to quantify this, it frequently finds that it is uncomfortable with the level of risk that it currently has and mandates more action—through new policies—that reduce the level of risk. The policies can include a number of risk management issues, such as the financial limits for risk assumption or retention, self-insurance parameters, the financial condition of insurance providers, and captive insurance companies. The policies do not have to cover some issues that are already required by law, such as workers' compensation insurance. An example of a comprehensive insurance policy is noted in Exhibit 19.1.

There are several key points to consider in the exhibit. First, a company might be tempted to purchase very inexpensive insurance, which typically comes from an insurance provider that is in poor financial condition. If the company subsequently files a claim on this insurance, it may find that the provider is not in a position to pay it. Consequently, the first policy item defines the minimum financial rating that an insurance provider must attain before the company will purchase insurance from it. Another is that a company wants to put a cap on the maximum amount of all risks that it is willing to tolerate so that it cannot be blindsided by a large loss that is not covered by insurance. The second policy point, which requires a cap on self-insured risks, covers this problem. Finally, the board is sometimes more comfortable defining the precise amount of insurance coverage needed in specific areas. Though the policy shows a few specific insurance amounts, it is usually better to define a formula for calculating the appropriate amount of insurance, such as commercial property insurance, that will cover the replacement cost of structures and inventory. This keeps the amount defined on the policy from becoming outdated due to changing business conditions. These are some of the most important insurance issues that a risk management policy should cover.

There is a growing understanding that the use of insurance is essentially a direct substitute for a company's equity. If a company were to self-insure its risks and then incur losses, the loss coverage would be extracted from equity in the form of losses. If, however, insurance were to be used to cover selected risks, then a very large loss, paid

EXHIBIT 19.1 A comprehensive policy for risk management

1. ABC Company will obtain insurance only from companies with an A. M. Best rating of at least B++.
2. All self-insurance plans will be covered by an umbrella policy that covers all losses exceeding $50,000.
3. No insurance may be obtained from captive insurance companies.
4. The company must always have current insurance for the following categories, and in the stated amounts:
   - Director's and officer's insurance, $5 million.
   - General liability insurance, $10 million.
   - Commercial property insurance that matches the replacement cost of all structures and inventory.
   - Business interruption insurance, sufficient for four months of operations.

by the insurer, acts as a low-cost alternative to the equity that would otherwise have been depleted. The cost of the insurance ''capital'' would have been the insurance premium and any co-pay or risk sharing, divided by the amount of the claim paid by the insurer. Using this logic, another way of deciding upon how to handle a risk is to self-insure when the insurance premium divided by the most likely loss payout is greater than the incremental cost of capital, and vice versa. However, if there is a chance of an extremely large loss that could wipe out all equity, then this logic breaks down, and purchasing insurance, irrespective of cost, may be the more appropriate choice.

RISK MANAGEMENT PLANNING

Companies have a bad habit of structuring their risk planning to deal with events that have occurred before, rather than what may happen in the future. For example, if a lawsuit had previously been brought against a company for illegal software copying, the company will probably implement a comprehensive software auditing system, but make no plans to deal with the earthquake fault line running directly under corporate headquarters, because there has been no earthquake in the past century.

Risk management planning needs to encompass considerably more than systems that were installed to deal with past events. Even if it has not occurred yet, be aware of any significant risk of a possible natural disaster that could affect the company. This does not just mean earthquakes, fires, hail storms, floods, and tsunamis that can impact company facilities, but also their impact on key customers and suppliers and what that would mean for the company in terms of lost sales or reduced supplies.

Another problem area is catastrophes caused by complex system failure. For example, an airline manufacturer may need to consider the stresses caused on existing airframes if it installs satellite television reception nodules on the airframes; the airframes were not designed to have additional items bolted onto them, so the level of complexity has increased, resulting in a heightened chance of system failure (airframe cracking). The same concept applies to any business engaged in highly complex systems, such as chemical processing facilities, oil pipelines, and cruise ships. The same concept can even apply to the rewiring of an office building with additional cabling for a variety of purposes—power running through nearby cables may interfere with the data in a communications cable that was inadvertently run alongside it. The solution is to bring together engineers and maintenance personnel who are responsible for these systems, and have them review problem scenarios, as well as review ongoing incident reports to see if they are a prelude to a potential major problem.

Yet another risk area is acts of internal sabotage or terrorism from outside organizations, which can involve product tampering, theft of information, computer viruses, or even employee kidnappings. In this case, it is useful to have technical specialists from both within and outside of the company devise scenarios for destroying or at least penetrating company assets, and then have them create countermeasures to reduce the likelihood of an actual attack.

To coordinate the analysis of the above scenarios, it is useful to create a crisis management team (CMT) that determines which risks are most likely to happen. It can do this by creating a questionnaire that asks recipients, in a broad-based format, where they feel the company is most at risk. The questionnaire should be distributed to both managers and specialists in key operational areas throughout the company, so that responses represent a wide cross-section of the company. The result may be too many identified risks to properly address, so the CMT should then reduce the list to a more manageable size, perhaps the top one or two dozen, based on such issues as probability of occurrence and impact on the company. Given the large number of potential risks, it is useful to categorize the risks visually with a matrix such as the one shown in Exhibit 19.2, where each risk is identified by a letter (N = natural disaster, S = systemic problem, and X = external threat), and a number, both of which are identified in a table below the matrix. The table also identifies graphically how each risk is addressed; a square indicates a risk transfer through insurance, while a circle indicates a retained risk. For example, kidnapping is assigned the code X2 as an external threat, and has been mitigated through the use of kidnap and ransom

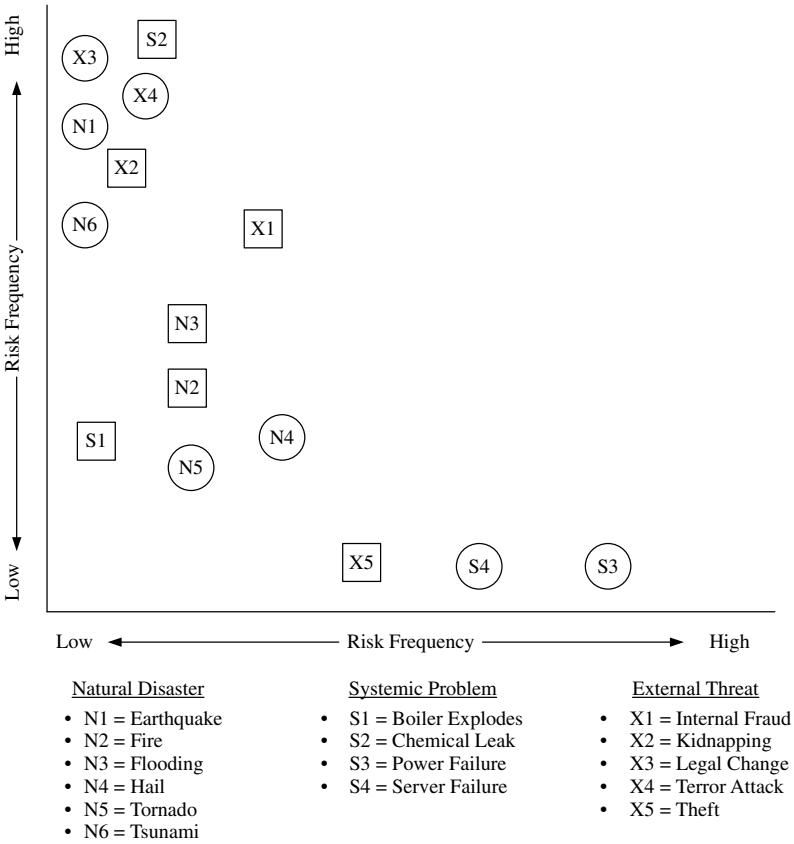

EXHIBIT 19.2 Risk Matrix

insurance, so it is situated in a square. This is an easy way to visualize the status of a company's principal risks.

The CMT should also create monitoring systems to spot the targeted risks as soon as they occur (or if events occur that make them more likely), and actively create systems to either prevent or deal with the selected set of risks. This group should regularly reevaluate its chosen set of most likely risks to see if they must be modified to deal with changing circumstances, which may include a new company strategy, sales into a politically at-risk country, a major acquisition, and so on.

Once the basic risk management system is in place, the CMT must ensure that risk examination becomes an ongoing process, which calls for policies and procedures as well as a monitoring system to verify that all parts of the company are regularly updating risk information. For larger entities with additional funding, it may also be possible to create computer systems that regularly extract data elements from legacy systems that are key indicators of risk factors, and present them in summary format to the CMT and the senior management team.

MANAGER OF RISK MANAGEMENT

In most large companies, the risk management function is assigned to a manager who reports to the chief financial officer, treasurer, or controller. This executive is charged with the responsibility of implementing procedures consistent with the corporate risk management policy (as noted earlier in Exhibit 19.1). This person works closely with other functional areas, such as engineering, safety and health, personnel and industrial relations, production, plant security, legal, and accounting. It is important that this person have a thorough knowledge of the company's operations, products, and services, as well as risk history, so that he or she can evaluate risks and exposure properly. Within these constraints, the job description of the typical risk manager includes the following:

- Ascertain and appraise all corporate risks.
- Estimate the probability of loss due to these risks.
- Ensure compliance with state, federal, and local requirements regarding insurance.
- Select the optimum method for protecting against losses, such as changes to internal procedures or by acquiring insurance.
- Work with insurance agents, brokers, consultants, and insurance company representatives.
- Supervise a loss prevention program, including planning to minimize losses from anticipated crises.
- Maintain appropriate records for all aspects of insurance administration.
- Continually evaluate and keep abreast of all changes in company operation.
- Stay current on new techniques being developed in the risk management field.
- Conduct a periodic audit of the risk management program to ensure that all risks have been identified and covered.

RISK MANAGEMENT PROCEDURES

Once the risk management policies have been defined, it is necessary to determine a number of underlying procedures to support them. These guide the actions of the risk manager in ensuring that a company has taken sufficient steps to ensure that risks are kept at a minimum. The procedures follow a logical sequence of exploring the extent of risk issues, finding ways to mitigate those risks internally, and then using insurance to cover any risks that cannot otherwise be reduced. In more detail, the procedures follow five steps:

1. *Locate risk areas.* Determine all hazards to which the company is subject by performing a complete review of all properties and operations. This should include a review of not only the physical plant but also of contractual obligations, leasehold requirements, and government regulations. The review can be completed with insurable hazard checklists that are provided by most insurance companies, with the aid of a consultant, or by reviewing historical loss data provided by the company's current insurance firm. However, the person conducting this review must guard against the FUD principle (*fear, uncertainty,* and *doubt*) that is cheerfully practiced by all insurance companies. That is, they tend to hone in on every conceivable risk and amplify the chance of its occurrence, so that a company will purchase lots of unnecessary insurance. The best way to avoid this problem is to employ an extremely experienced risk manager who knows which potential risks can be safely ignored. The following areas, at a minimum, should be reviewed:
   - *Buildings and equipment.* List the type of construction, location, and hazards to which each item is exposed. Each structure and major piece of equipment should be listed separately. The current condition of each item should be determined and its replacement cost evaluated.
   - *Business interruption.* Determine the amount of lost profits and continuing expenses resulting from a business shutdown as the result of a specific hazard.
   - *Liabilities to other parties.* Determine the risk of loss or damage to other parties by reason of company products, services, operations, or the acts of employees. This analysis should include a review of all contracts, sales orders, purchase orders, leases, and applicable laws to determine what commitments have been undertaken and what exposures exist.
   - *Other assets.* Review cash, inventory, and accounts receivable to determine the possible exposure to losses by fire, flood, theft, or other hazards.
2. *Determine the risk reduction method.* Match each risk area with a method for dealing with it. The possible options for each risk area include avoidance, reduction of the hazard, retaining the hazard (i.e., self-insurance), or transferring the risk to an insurance company. Note that only the last option in this list includes the purchase of insurance, for there are many procedures that a company can implement to reduce a risk without resorting to insurance. The selection of a best option is based on a cost–benefit analysis that offsets the cost of each hazard against the cost of avoiding it, factoring in the probability of the hazard's occurrence. The general categories of risk reduction are as follows:

- *Duplicate.* Retain multiple copies of records to guard against the destruction of critical information. In addition, key systems such as local area networks, telephone systems, and voice mail storage can be replicated at off-site locations to avoid a shutdown caused by damage to the primary site. For example, airlines maintain elaborate backup systems for their seat reservation databases.
- *Prevent.* Institute programs to reduce the likelihood and severity of losses. For example, some companies invite the Occupational Safety and Health Administration (OSHA) to inspect their premises and report on unsafe conditions; the companies then correct the issues to reduce their risk of loss. If a company requires employees to wear hard hats in construction areas, then a falling brick might still cause an accident, but the hard hat will reduce the incident's severity. Examples of prevention techniques include improving lighting, installing protective devices on machinery, and enforcing safety rules.
- *Segregate.* Split up key assets such as inventory and distribute it to multiple locations (e.g., warehouses). For example, the military maintains alternate command centers in case of war.

3. *Implement internal changes to reduce risks.* Once the types of risk avoidance have been determined, it is time to implement them. This usually involves new procedures or installations, such as fire-suppression systems in the computer processing facility or altered cash-tracking procedures that will discourage an employee from stealing money. Changes to procedures can be a lengthy process, for it includes working with the staff of each functional area to create a new procedure that is acceptable to all users, as well as following up with periodic audits to ensure that the procedures are still being followed.
4. *Select a broker.* Every company will require some insurance, unless it takes the hazardous approach of self-insuring virtually every risk. It is necessary to select a broker who can assist the company in procuring the best possible insurance. The right broker can be of great help in this process—not just in picking the least expensive insurance, but also in selecting the correct types of coverage, determining the financial strength of insurers, post-loss service, and in its general knowledge of the company's business and of the types of risk that are most likely to occur in that environment. Unfortunately, many companies look for new brokers every few years on the principle that a long-term broker will eventually raise prices and gouge the company. In reality, a long-term relationship should be encouraged, since the broker will gain a greater knowledge of the company's risks as problems occur and claims are received, giving it a valuable insight into company operations that a new broker does not have.
5. *Determine the types of insurance to be purchased.* Once the broker has been selected, the risk manager can show the preliminary results of the insurance review to the broker, and they can then mutually determine the types of insurance that are needed to supplement the actions already taken internally to mitigate risk. The types of insurance include the following:
   - *Boiler and machinery.* Covers damage to the boilers and machinery, as well as payments for injuries caused by the equipment. Providers of this insurance also review the company's equipment and issue a report recommending safety improvements.

- *Business interruption.* Allows a company to pay for its continuing expenses and in some cases will pay for all or part of its anticipated profits.
- *Commercial property.* The minimum ''basic form'' of this insurance covers losses from fires, explosions, wind storms, hail, vandalism, and other perils. The ''broad form,'' which is an expanded version, covers everything in the basic form plus damage from falling objects, the weight of snow, water damage, and some causes of building collapse. Optional coverage includes an inflation escalator clause, replacement of destroyed structures at the actual replacement cost, and coverage of finished goods at their selling price (instead of at their cost).
- *Comprehensive auto liability.* This coverage is usually mandatory and requires a minimum level of coverage for bodily injury and property damage.
- *Comprehensive crime.* Covers property theft, robbery, safe and premises burglary, and employee dishonesty; in the case of employee dishonesty, the company purchases a fidelity bond, which can cover either a named individual, a specific position, or all employees. Some policies will also cover ransom payments.
- *Directors and officers.* Provides liability coverage to corporate managers for actions taken while acting as an officer or director of the corporation. Directors' and officers' (D&O) insurance includes three types of agreements: the Side A agreement provides coverage to directors and officers for which the company cannot pay, while the Side B agreement reimburses the company for any payments it makes to directors and officers for the cost of claim settlements and legal defense work. The Side C agreement provides coverage to the company for claims made against the corporate entity. D&O insurance is increasingly difficult to obtain, due to massive insurer payouts in recent years, which obligates companies to accept large risk retentions or loss sharing, as well as the obligation to actively and materially assist the insurer in the defense of any litigation. There are also several clauses to be aware of in a D&O contract that can void or reduce coverage. Always look for the following clauses, and attempt to strike them from the contract or at least reduce their impact:
  - Claims caused by fraudulent acts are not covered. Only allow this clause if the fraudulent acts are based on criminal activity, since a claim settlement that does not include the admission of guilt will retain insurance coverage.
  - If the corporate financial statements are considered part of the company's D&O application, then any restatement of the financial statements can result in voided coverage.
  - If the D&O policy includes coverage for other types of risks, then the total policy limit may be exceeded by other types of claims, leaving no coverage for the directors and officers. Accordingly, always specify separate policy limits just for the D&O coverage.
  - Coverage could be terminated by the bankruptcy of the company.
  - Coverage could be denied if a claim is based on the release of pollutants.
- *General liability.* This covers claims involving accidents on company premises, as well as those caused by its products, services, agents, or contractors. An umbrella policy usually applies to liability insurance and provides extra coverage after the primary coverage is exhausted. An umbrella policy has few exclusions.

- *Group life, health, and disability.* There are several types of life insurance: *split-dollar life insurance* covers an employee, and its cost is split between the company and the employee; *key person insurance* covers the financial loss to the company in case an employee dies; and a *cross-purchase plan* allows the co-owners of a business to buy out the share of an owner who dies. *Health insurance* typically covers the areas of hospital, medical, surgical, and dental expenses. *Disability insurance* provides income to an individual who cannot work due to an injury or illness. The disability insurance category is subdivided into *short-term disability* (payments made while recovering one's health following an injury or illness) and *long-term disability* (continuing payments with no anticipation of a return to work).
- *Inland marine.* Covers company property that is being transported. Examples of covered items include trade show displays and finished goods being shipped.
- *Ocean marine and air cargo.* Covers the transporting vehicle (including loss of income due to loss of the vehicle), liability claims against the vehicle's owner or operator, and the cargo.
- *Workers' compensation.* Provides medical and disability coverage to workers who are injured while performing duties related to their jobs. The insurance is mandatory, the employer pays all costs, and no legal recourse is permitted against the employer. There are wide variations in each state's coverage of workers' compensation, including levels of compensation, types of occupations that are not considered, and the allowability of negligence lawsuits.

These steps allow a risk manager to determine the types and potential severity of a company's risks, as well as how to reduce those risks, either through internal changes or by purchasing various types of insurance coverage.

TYPES OF INSURANCE COMPANIES

There are several types of insurance companies. Each one may serve a company's insurance needs very well, but there are significant differences between them that a company should be aware of before purchasing an insurance contract:

- *Captive insurance company.* This is a stock insurance company that is formed to underwrite the risks of its parent company or, in some cases, a sponsoring group or association.
- *Lloyds of London.* This is an underwriter operating under the special authority of the English Parliament. It may write insurance coverage of a nature that other insurance companies will not underwrite, usually because of high risks or special needs not covered by a standard insurance form. It also provides the usual types of insurance coverage.
- *Mutual.* This is a company in which each policyholder is an owner, and where earnings are distributed as dividends. If a net loss results, policyholders may be subject to extra assessments. In most cases, however, nonassessable policies are issued.

- *Reciprocal organization.* This is an association of insured companies that is independently operated by a manager. Advance deposits are made, against which are charged the proportionate costs of operations.
- *Stock company.* This is an insurance company that behaves like a normal corporation—earnings not retained in the business are distributed to shareholders as dividends and not to policyholders.

Another way to categorize insurance companies is by the type of service offered. For example, a *monoline* company provides only one type of insurance coverage, while a *multiple-line* company provides more than one kind of insurance. A *financial services company* provides not only insurance but also financial services to customers.

A company can also use *self-insurance* when it deliberately plans to cover losses from its own resources rather than through those of an insurer. It can be appropriate in any of the following cases:

- When the administrative loss of using an insurer exceeds the amount of the loss
- When a company has sufficient excess resources available to cover even the largest claim
- When excessive premium payments are the only alternative
- When insurance is not available at any price

A form of partial self-insurance is to use large deductibles on insurance policies, so that a company pays for all but the very largest claims. Finally, a company can create a *captive insurer* that provides insurance to the parent company. Captive insurers can provide coverage that is tailored to the parent organization, making it less dependent on the vagaries of the commercial insurance market. A variation on the captive insurer concept is a *fronting program*, in which a parent company buys insurance from an independent insurance company, which then reinsures the exposure with a captive of the parent company. This technique is used to avoid licensing the captive insurer in every state where the parent company does business, though the captive insurer must still be authorized to accept reinsurance. Fronting also allows the parent company to obtain local service from the independent insurance company while shifting the exposure to the captive company. Whatever form the self-insurance may take, the risk manager should work with the controller to determine the amount of loss reserves to set aside to pay for claims as they arise.

In some states, a company can become a self-insurer for workers' compensation. To do this, a company must qualify under state law as a self-insurer, purchase umbrella coverage to guard against catastrophic claims, post a surety bond, and create a claims administration department to handle claims. The advantages of doing this are lower costs (by eliminating the insurer's profit) and better cash flow (because there are no up-front insurance payments). The disadvantages of this approach are extra administrative costs as well as the cost of qualifying the company in each state in which the company operates.

These are some of the variations that a company can consider when purchasing insurance, either through a third party, a controlled subsidiary, or by providing its own coverage.

EVALUATING THE HEALTH OF AN INSURANCE CARRIER

A company that depends on an insurance carrier to mitigate significant portions of its risk must be aware of the financial health of the carrier. Otherwise, the insurer may fail, forcing the company to assume risk itself or find coverage elsewhere on short notice—and quite possibly at a higher price. Though there are rating systems for insurance carriers (such as those issued by A. M. Best, located at www.ambest.com), the CFO can also gain an understanding of the operating characteristics of a carrier that indicate future problems, ideally before its official rating changes to reflect those characteristics.

A key warning sign is when a carrier concentrates an excessively high proportion of its insurance line in an area suffering from high payouts, such as California earthquake coverage, pollution coverage, or directors' and officers' liability insurance. This is a strong indicator that its reserves are being drained, which may lead to a ratings drop and perhaps a decision by the carrier to exit certain types of insurance coverage.

When reviewing an insurer's financial statements, earnings volatility is a general indicator of trouble. This is most common with smaller carriers, who have concentrated their business in too small a geographic area or only in a few insurance lines, so they have not spread their risk sufficiently in the event of major problems in one or two areas. This leads to wild gyrations in earnings, which is a strong indicator of future bankruptcy. Also, even if there is minimal earnings volatility, watch out for low net income or minimal cash flows, which indicate poor management. Even worse, cash outflows will eat into the carrier's reserves, leaving less money available for future payouts. Another issue when reviewing financials is significant charges to earnings. Though a carrier should be credited with recognizing insurance losses when it posts a large write-down, the fact remains that the carrier expects significant losses in the near term. When all of these factors are considered together—earnings volatility, low or negative income or cash flows, and write-downs—a clear picture emerges of the true financial condition of an insurer.

Insurers are having increasing difficulty recovering receivables from reinsurers, who have tightened their reviews of potential payouts considerably. Thus, an increase in reinsurance receivables over several years is an indicator of potential trouble, especially if management confirms this in its discussion of financial results in the carrier's 10-K report.

A final cause for concern is an excessively high rate of growth in an insurer's policyholders. This is a difficult issue to evaluate, for high growth may simply mean that an insurer has developed an entirely new type of insurance, and is rapidly acquiring market share before anyone else begins to compete. However, the more common scenario is that the insurer is essentially buying market share with excessively low policy pricing, which will eventually cut into its net income, cash flow, and reserves when it begins to experience high payout levels in proportion to its income from those policies.

Unfortunately, there is no completely quantitative way to evaluate the financial health of an insurer—an examination of its business practices is also necessary to understand what its near-term financial condition is likely to be. As noted in this section, there are a number of ways in which a watchful CFO can gain a general understanding

of the short-term problems of an insurer, which may allow enough time to shift insurance coverage to a new carrier who is likely to remain in a better financial position.

CLAIMS ADMINISTRATION

Some insurance companies take an extremely long time to respond to claims, and reject them if they are not reported in a specific format. To avoid these problems, thereby receiving the full amount of claims as quickly as possible, the risk manager must implement a strict claims administration process, as described in this section.

The risk manager should assemble a summary of information to review whenever a claim is filed. By having this information in one place, the risk manager avoids missing any steps that might interfere with the prompt settlement of a claim. The summary should include the following:

- *Instructions for itemizing damaged items.* Be sure to compile a complete list of all damaged items, including their inventory values, estimates, appraisals, and replacement costs. This assists the claims adjusters in determining the price they will pay to compensate for any claims.
- *Claims representatives.* There should be a list of the names, addresses, and phone numbers of the claims adjusters who handle each line of insurance. This usually requires a fair amount of updating, since there may be a number of changes to this information every year, especially if a company uses a large number of insurance companies for its various types of risk coverage.
- *Key internal personnel.* Company policy may require that the risk manager notify internal personnel if claims have been filed or payments received on those claims. For example, the accountant may want to know if payment for a large claim has been received, so that an entry can be made in the accounting records.
- *Underlying problems.* The risk manager should have a standard group of follow-up steps to review whenever a claim occurs, so that there is a clear understanding of why a claim occurred, as well as how the underlying problem that caused the claim can be avoided in the future. Without these instructions, it is possible that a company will repeat the problem over and over again, resulting in many claims and a vastly increased insurance premium.
- *Instructions for safeguarding damaged items.* If material has been damaged, it is the responsibility of the company to ensure that it is not damaged further, which would result in a larger claim. For example, a company must protect the materials in a warehouse from further damage as soon as it discovers that the roof has leaked and destroyed some items. If it does not take this action, the insurer can rightly claim that it will only pay for the damage that occurred up to the point when the company could have taken corrective action.

This information is necessary for the filing of every insurance claim. In addition, there are two steps related to claims administration that the risk manager should attend to on an ongoing basis:

1. *Accounting techniques.* The risk manager should work with the accountant to develop a standard set of accounting entries that are used for insurance claims as well as summarize the cost of risk management. These relate to accumulating cost information for each claim so that the risk manager can easily summarize the appropriate information related to each claim and use it to file for reimbursement. This information should include the costs of claims preparation, security and property protection, cleanup, repair costs, property identification, and storage costs.
2. *Audit program.* No matter how good the procedures may be for the claims administration process, it is common for the claims administration staff to forget or sidestep some procedures. This is especially common when there is frequent employee turnover in this area, with poor training of the replacement staff. To identify procedural problems, it is useful to conduct a periodic review of the claims administration process. To ensure consistency in this audit, there should be a standard audit program that forms the minimum set of audit instructions (to be expanded on as needed) for use in conducting each audit.

It can be cost-effective to have some claims administered by outside service companies, quite often by the insurance carrier itself. Usually high-volume, low-cost-per-unit items such as medical claims are in this category. When outside services are used, the accountant must establish with the provider the controls to be followed and the reports to be prepared. Periodic audits of the outside claims processing operation should be made by the company to ensure that claims are being handled in a controlled and effective manner.

INSURANCE FILES

Insurance record keeping is vital to ascertain that adequate insurance coverage has been obtained and is being administered properly. The primary risks that this record keeping avoids are inadvertently dropping insurance through lack of renewal and having inadequate insurance, given a company's actual claims record. The layout of insurance records described in this section helps a company to avoid these problems.

There are several main categories of insurance records. The first section identifies each policy. The next section is a *tickler file* that lists key due dates for each policy. This is useful for ensuring that all policy payments are made on time, so that they do not lapse. The next section is the *activity file*, which describes the claim history and open claims for each policy. Finally, there is the *value file*, which itemizes the insurable values covered by each policy. The activity and value files are needed to determine the size of claims or the value being covered, so the risk manager can see if each policy provides a sufficient amount of coverage. When properly maintained, these files give the risk manager a basis for sound management of his or her function. The contents of each type of file are as follows:

- *Identification file.* Lists key information on each policy:
  - Abstract of coverage, showing exclusions
  - Broker

  - Effective dates
  - Insurer
  - Policy number
  - Rates, premiums, and refunds
  - Type of insurance coverage
- *Tickler file.* Lists key dates for each policy:
  - Inspection dates
  - Policy expiration date
  - Premium payment dates
  - Reporting dates
- *Activity file.* Describes the claim history and open claims for each policy:
  - Historical comparison of premiums to losses
  - History file on closed claims
  - Reserves established
  - Status of each claim
  - Support and documentation of each claim
- *Value file.* Itemizes the insurable values covered by each policy:
  - Detail of actual cash value of each item covered by a policy
  - Detail of replacement cost of each item covered by a policy
  - Summary of insurable values listed on each policy

ANNUAL RISK MANAGEMENT REPORT

The risk manager should issue a risk management report to the board of directors every year. This document reviews all perceived risks to which a company is subject, and then describes the steps taken to mitigate those risks. It is of great value to the board, because it needs to know the extent of potential risks and how they can impact company operations. Unfortunately, not many chief financial officers are aware of what should go into the annual risk management report. This presents a problem if the board asks either of these managers, to whom the risk manager usually reports, about the contents of this document. To avoid this problem, the contents of a typical risk management report are described in this section, including an example based on an organization that provides training in high-risk outdoor activities.

The risk management report contains four sections. The first is an overview that describes the contents of the report, the timing of when it is issued, and to whom it is delivered. The second section itemizes all risks that are perceived to be significant. If every possible risk were to be listed, the document might be too voluminous for easy reading. These risks should be grouped with subheadings rather than appear as an enormous list that is difficult for the reader to digest. The third section notes the ways to cover those risks, *excluding insurance* (which is addressed in the fourth section). These are operational changes such as altered procedures or processes, or additional training. Finally, the fourth section notes the insurance that has been purchased to provide additional coverage to those risk areas that cannot be adequately covered by internal

EXHIBIT 19.3 Example of a risk management report

Section II: Review of Risks

- *Risk related to education:*
  1. Risk of school equipment failing
  2. Risk of accidents due to improper instruction

Section III: Ways to Cover Risks

- *Risk of school equipment failing.* School equipment is reviewed and replaced by the school governing committees on a regular basis. Instructors are also authorized to immediately remove equipment from use if they spot unusual damage that may result in equipment failure.
- *Risk of accidents due to improper supervision.* School instructors must first serve as assistant instructors under the supervision of a more experienced instructor, who evaluates their skills and recommends advancement to full instructor status. The typical instructor has previously completed all prerequisite courses and has considerable outdoor experience. All instructors must have taken a mountain-oriented first aid class within the last year.

Section IV: Supplemental Insurance Coverage

- *Risk of school equipment failing.* The general liability policy covers this risk for the first $500,000 of payments to a claimant. The umbrella policy covers this risk for an additional $5 million after the coverage provided by the general liability policy is exhausted.
- *Risk of accidents due to improper instruction.* Same insurance coverage as for the risk of school equipment failing.

changes. These four sections give the board an adequate knowledge of a company's efforts in the risk management area.

The example in Exhibit 19.3 presents an extract from the risk management report of an organization that provides outdoor training classes. The example skips the overview section and proceeds straight to the enumeration of risks, how they are covered, and what types of insurance are also needed. This is a good example of the format that a CFO should look for in a risk management report.

SUMMARY

In a larger company, there is usually a risk manager who identifies and finds ways to mitigate risk—either through internal changes or by purchasing insurance. Because this manager frequently reports to either the controller or CFO, it is important for these people to have an overall knowledge of how risk management works. This chapter answered the need by describing the risk planning, policies, and procedures used by a risk manager and that person's job. The types of insurance companies, the paperwork handled by the risk manager, and the annual risk management report, were also described.

In the next chapter, we turn to the more specialized area of foreign exchange risk management.

CHAPTER TWENTY

20 Risk Management: Foreign Exchange

WHEN A COMPANY ACCEPTS foreign currency in payment for its goods or services, it accepts some level of foreign exchange risk, since the value of that currency in comparison to the company's home currency could fluctuate enough between the beginning of the contract and receipt of funds to seriously erode the underlying profit on the sale. This is becoming more of an issue over time, because global competition is making it more likely that a company *must* accept payment in a foreign currency.

When dealing in foreign currencies, a company must determine its level of exposure, create a plan for how to mitigate that risk, engage in daily activities to implement the plan, and properly account for each transaction. Each of these steps is covered in the following sections.

FOREIGN EXCHANGE QUOTE TERMINOLOGY

Before delving into foreign exchange risk, it is useful to understand the terminology used in the foreign exchange quotation process. When comparing the price of one currency to another, the *base currency* is the unit of currency that does not fluctuate in amount, while the *quoted currency* or *price currency* does fluctuate. The U.S. dollar is most commonly used as the base currency. For example, if the dollar is the base currency and one dollar is worth 0.7194 euro, then this quote is called the *indirect quote* of presenting a quote for euros. However, if the euro is used as the base currency, the same quote becomes $1.39 per euro (and is calculated as 1/0.7194), and is referred to as a *direct quote*. The direct quote is the inverse of the indirect quote. If neither the base currency nor the quoted currency is the U.S. dollar, then the exchange rate between the two currencies is called a *cross rate*.

As an example of an indirect quote, the U.S. dollar is listed first, and the currency it is being paired with is listed second. Thus, a USD/EUR quote (dollar/euros) means that one

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by Steven M. Bragg

EXAMPLE

Toledo Toolmakers learns from its bank on June 1 that it has just received 50,000 euros. Toledo's CFO wants to convert these funds into dollars, and so calls its bank and requests the U.S. dollar exchange rate in euros. The bank quotes him an exchange rate of 1.3900 dollars per euro. The CFO immediately sells the euros at the rate of 1.3900. Settlement is completed two working days later, on the delivery date of June 3, when Toledo will receive $35,971. ■

dollar equals 0.7194 euros. Conversely, a EUR/USD (euro/dollars) quote is a direct quote, and means that one euro equals 1.3900 dollars. The key factor to remember with any quote pairing is that the first currency referenced always has a unit value of one.

Most exchange rates are quoted to four decimals, since the sums involved in currency transactions are so large that the extra few decimals can have a meaningful impact on payments. A *point* is a change of one digit at the fourth decimal place of a quote.

A foreign exchange dealer will quote both *bid* and *offer* foreign exchange prices. The bid price is the price at which the dealer will purchase a currency, while the ask price is the price at which the dealer will sell a currency.

The current exchange rate between any two currencies is known as the *spot rate*. When two parties to a foreign exchange transaction exchange funds, this is on the *delivery date* or *value date*. When a company requires foreign exchange immediately, it engages in a *spot settlement*, though there is actually a one- to two-day delay in final settlement of the transaction.

NATURE OF FOREIGN EXCHANGE RISK

We will assume that a company's home currency is the U.S. dollar. If, during the interval when a customer is obligated to pay the company, the dollar appreciates against the customer's currency, then the customer is paying with a reduced-value currency, which causes the company to record a foreign exchange loss once it is paid.

EXAMPLE

Toledo Toolmakers sells goods to an Italian company for 100,000 euros. At the time of sale, one euro is worth 1.39079 dollars at the spot rate, which is a total sale price of $139,079. The customer is not obligated to pay until 90 days have passed; upon receipt of the euro payment in 90 days, the value in dollars will be based on the spot rate at the time of receipt. On the day when payment is received, the spot rate has dropped to $1.3630, which reduces the value of the payment to $136,300, resulting in a decline of $2,779 or 2 percent. Toledo must record this reduction as a loss. ■

There is also a possibility that exchange rates will move in the opposite direction, which creates a gain for the selling company. Smaller firms that do not engage in much foreign currency trade are more likely to accept the gains and losses from changes in the spot rate. However, this can cause wild swings in the profitability of larger firms with substantial multicountry trading activity. These firms are more likely to seek a solution that reduces their earnings volatility. Hedging is the solution, and a broad array of possible solutions will be covered later in this chapter.

Before considering hedging solutions, a CFO needs to know if there is any currency risk that requires such a solution—and that is not always a simple matter to determine. The next section discusses this problem.

DATA COLLECTION FOR FOREIGN EXCHANGE RISK MANAGEMENT

Determining the extent of a company's currency risk can be a frustrating exercise for the foreign exchange specialist, who is often at the receiving end of a flood of disorganized information arriving from the accounting, budgeting, tax, and treasury departments. The specialist must somehow aggregate this information, not only into a current statement of currency positions but also into a reliable forecast of where currency positions are expected to be in the near to medium term. This information is then used as the foundation for a hedging strategy.

A large firm with an enterprise resources planning (ERP) system can automatically accumulate its existing net currency exposures from the ERP system, but such is not the case for a company with more distributed accounting systems; its staff will likely accumulate the information manually from each subsidiary, and load it into an electronic spreadsheet in order to net out the positions of each subsidiary and determine the level of currency exposure. Obviously, those with an ERP system have a significant advantage in determining the amount of this *booked exposure*.

The currency forecast can be unusually difficult to formulate, because a company may have many subsidiaries, each of which has some level of exposure in multiple currencies that varies continually. Ideally, there should be a forecast for each currency, which can result in a multitude of forecasts. To manage the forecasting workload, the foreign exchange specialist usually only constructs forecasts for those currencies in which the company is most heavily committed, and ignores currencies where the company generally has minimal currency positions. The resulting *forecasted exposure* estimates the most likely size of currency transactions that will occur in the near term and medium term, so that hedging plans can be made to mitigate these exposures.

Booked exposure, especially when derived from ERP information, should be quite accurate. However, forecasted exposure is only moderately accurate in the near term, and its accuracy declines rapidly within a year. This reduced accuracy strongly impacts the amount of hedging that a company may be willing to engage in, as discussed in the next section.

FOREIGN EXCHANGE HEDGING STRATEGIES

There are a variety of foreign exchange hedging strategies noted in this section. The three main strategy groupings are as follows:

1. To not hedge the exposure
2. To hedge the exposure through business practices
3. To hedge the exposure with a derivative

Also, within the third category, a CFO must decide on what level of exposure to hedge. One possible strategy could be to hedge 100 percent of booked exposures, 50 percent of forecasted exposures over the next rolling 12-month period, and 25 percent of forecasted exposures over the following 12-month period. This gradually declining *benchmark hedge ratio* for longer forecast periods is justifiable on the assumption that the level of forecast accuracy declines over time, so that one should hedge against the minimum amount of exposure that will almost certainly occur.

The forecasted cash flow is consistently higher than the actual cash flow by 5 percent to 10 percent, which is a very high level of forecasting accuracy, and is indicative of mature and stable cash flows. In this case, the CFO can safely adopt a 90 percent benchmark hedge ratio, which should hedge nearly all of the forecasted exposure. However, what if a company has more difficulty in predicting its cash flows? Exhibit 20.2 reveals a considerably more variable cash flow situation.

In this more difficult forecasting environment, the average variance of actual cash flows from the forecast is 21 percent, but also lower than the forecast by 41 percent in half of the reporting periods. In this case, the CFO may well feel justified in adopting a benchmark hedge ratio of only 60 percent, in order to hedge only that portion of cash flows that is most likely to occur.

EXAMPLE

The CFO of Toledo Toolmakers compares his trailing six-month stream of euro-denominated cash flows (in thousands) to the original forecast, which appears in Exhibit 20.1.

EXHIBIT 20.1 Sample Forecasted and Actual Cash Flow Stream (Stable)

	Jan	Feb	Mar	Apr	May	Jun
Forecast	€3,051	€3,293	€4,011	€3,982	€3,854	€3,702
Actual	2,715	3,015	3,742	3,800	3,750	3,509
€ Variance	−336	−278	−269	−182	−104	−193
% Variance	−11%	−8%	−7%	−5%	−3%	−5%

EXHIBIT 20.2 Sample Forecasted and Actual Cash Flow Stream (Unstable)

	Jan	Feb	Mar	Apr	May	Jun
Forecast	€3,051	€3,293	€4,011	€3,982	€3,854	€3,702
Actual	2,142	3,409	4,000	1,862	3,915	2,274
€ Variance	−909	116	−11	−2,120	61	−1,428
% Variance	−30%	4%	0%	−53%	2%	−39%

The benchmark hedge ratio does not need to be consistent across the entire currency portfolio. There may be significant differences in the level of forecasting accuracy by currency, so a high-confidence currency forecast with little expected volatility can be matched with a higher benchmark hedge ratio, while a questionable forecast may justify a much lower ratio. Introducing this higher degree of granularity into the hedging strategy allows for better matching of hedging activity to foreign exchange risk.

The benchmark hedge ratio is also important from the perspective of the availability of hedge accounting. If the benchmark hedge ratio can be proven to cause a "high probability" of hedging effectiveness, then hedge accounting (which can delay the recognition of hedging gains and losses) can be used. Consequently, an ongoing analysis of the most appropriate benchmark hedge ratio would leave open the option of using hedge accounting.

ACCEPT THE RISK

Not hedging the exposure is the simplest strategy of all. A company can accept the foreign exchange risk and record any gains or losses on changes in the spot rate as they occur. The size of a company's currency exposure may dictate whether to hedge. For a smaller currency position, the expense associated with setting up and monitoring a hedge may be greater than any likely loss from a decline in the spot rate. Conversely, as a company's currency positions increase in size, the risk also increases, and makes this strategy less palatable.

The next seven strategies are all internal business practices that reduce currency exposure.

INSIST ON HOME CURRENCY PAYMENT

It is possible to insist on being paid in the company's home currency, so that the foreign exchange risk shifts entirely to the customer. This is a likely strategy for a company that is dominant in its industry, and which can therefore impose terms on its customers. However, smaller firms will find that they have a modest competitive advantage if they allow customers to pay in their own currencies.

The worst option is to offer a customer a choice of currencies in which to make a payment, since it will invariably use the one having the more favorable exchange rate; the company essentially bears the downside risk in this scenario, with no upside potential.

CURRENCY SURCHARGES

If a customer will not pay in a company's home currency, then a related option is to bill the customer a currency surcharge if the company incurs a foreign exchange loss between the time of billing and payment. The surcharge may not be billed for minor changes in the exchange rate (to avoid paperwork), but is triggered by a significant decline in the exchange rate. Customers are rarely happy about this, since they are taking on the foreign exchange risk and they cannot budget for the amount of the surcharge. It is also hardly a competitive advantage for a company to impose this practice on its customers.

GET PAID ON TIME

When a company deals with a counterparty in another country, the payment terms may be quite long, due to longer delivery schedules, border-crossing delays, or simply because of longer customary payment intervals in the other country. If a payment period is unusually prolonged, then the company is exposed to changes in the spot rate to a much greater extent than would be the case if the payment interval were compressed. Consequently, it behooves a company's sales staff to constantly strive toward sales agreements with shorter payment terms, while the collections staff should be unusually aggressive in collecting from foreign customers.

FOREIGN CURRENCY LOANS

It is possible to offset a foreign currency risk exposure by creating a counterliability, such as a loan. To do so, a company can borrow an amount of money in the foreign currency that matches the amount of the receivable. When the customer pays off the receivable, the company uses the proceeds to pay off the loan—all in the same currency. This is an especially attractive option if foreign interest rates on debt are low, or if there are tax advantages peculiar to the foreign tax location, of which the company can take advantage.

SOURCING CHANGES

If there is a large amount of foreign currency cash flows coming from a specific country, then one way to hedge this risk is to start using suppliers located in the same country. By doing so, the company can find a ready use for the incoming currency, by turning it around and sending it right back to the same country. A more permanent possibility is to

either buy or build a facility in that country, which will require currency not only for the initial capital investment, but also to fund continuing operations. This is a particularly favorable option if there are local government subsidies that give the company additional cost savings. However, local sourcing is not a good option if it will interrupt a smoothly operating supply chain.

FOREIGN CURRENCY ACCOUNTS

If a company regularly receives and pays out funds in a particular foreign currency, it may make sense to open a foreign exchange account, in which it maintains a sufficient currency balance to meet its operational needs. This approach can be cost-effective, because the company would otherwise have to buy the foreign currency in order to pay those suppliers requiring payment in that currency, and then separately sell the same currency upon receipt of customer payments. While the company is still accepting the risk of loss on fluctuations in the exchange rate, it is eliminating the cost of continually buying and selling the currency.

Such a bank account does not necessarily have to be held in the country where the currency originates. It is also possible, and likely more efficient, to maintain a variety of currency accounts in a single major currency center, such as New York, London, or Amsterdam.

UNILATERAL, BILATERAL, AND MULTILATERAL NETTING ARRANGEMENTS

A company that regularly conducts business in multiple countries must spend a considerable amount of time settling foreign exchange transactions. It may buy and sell the same currencies many times over as it processes individual payables and receivables. There are three ways to reduce the volume of these transactions, depending on the number of parties involved:

1. *Unilateral netting.* A company can aggregate the cash flows amongst its various subsidiaries, to determine if any foreign exchange payments between the subsidiaries can be netted, with only the (presumably) smaller residual balances being physically shifted. This reduces the volume of foreign exchange cash flows, and therefore the associated foreign exchange risk.
2. *Bilateral spreadsheet netting.* If two companies located in different countries transact a great deal of business with each other, then they can track the payables owed to each other, net out the balances at the end of each month, and one party pays the other the net remaining balance.
3. *Multilateral centralized netting.* When there are multiple parties wishing to net transactions, it becomes much too complex to manage with a spreadsheet. Instead, the common approach is to net transactions through a centralized exchange, such as Arizona-based EuroNetting (www.euronetting.com). Under a centralized netting system, each participant enters its payables into a centralized database through an

Internet browser or some other file upload system, after which the netting service converts each participant's net cash flows to an equivalent amount in each participant's base currency, and then uses actual traded exchange rates to determine the final net position of each participant. The exchange operator then pays or receives each participant's net position, and uses the proceeds to offset the required foreign exchange trades.

Each type of netting arrangement can involve a broad array of payment types, covering such areas as products, services, royalties, dividends, interest, loans, and hedging contracts.

When bilateral or multilateral netting is used, the parties usually sign a master agreement that itemizes the types of netting to be performed, as well as which contracts or purchase orders are to be included in the arrangement.

Though netting can be a highly effective way to reduce foreign exchange transaction costs, some governments do not recognize the enforceability of netting arrangements, because they can undermine the payment rights of third-party creditors. Consequently, consult a qualified attorney prior to entering into a netting arrangement.

The remaining strategies in this section involve the use of derivatives to hedge foreign exchange risk.

FORWARD EXCHANGE CONTRACTS

Under a forward exchange contract, which is the most commonly used foreign exchange hedge, a company agrees to purchase a fixed amount of a foreign currency on a specific date, and at a predetermined rate. This allows it to lock in the rate of exchange up front for settlement at a specified date in the future. The counterparty is typically a bank, which requires a deposit to secure the contract, with a final payment due in time to be cleared by the settlement date. If the company has a credit facility with the bank acting as its counterparty, then the bank can allocate a portion of that line to any outstanding forward exchange contracts, and release the allocation once the contracts have been settled. The forward exchange contract is considered to be an over-the-counter transaction, because there is no centralized trading location, and customized transactions are created directly between parties.

EXAMPLE

Toledo Toolmakers, has a 100,000 euro receivable at a spot rate of 1.39079. Toledo can enter into a forward FX contract with a bank for 100,000 euros at a forward rate of 1.3900, so that Toledo receives a fixed amount of $139,000 on the maturity date of the receivable. When Toledo receives the 100,000 euro payment, it transfers the funds to the bank acting as counterparty on the forward FX contract, and receives $139,000 from the bank. Thus, Toledo has achieved its original receivable amount of $139,000, even if the spot rate has declined during the interval. ■

The price of a currency on the maturity date (its forward price) comprises the spot price, plus a transaction fee, plus or minus points that represent the interest rate differential between the two currencies. The combination of the spot rate and the forward points is known as the *all-in forward rate*. The interest rate differential is calculated in accordance with these two rules:

1. The currency of the country that has a higher interest rate trades at a discount.
2. The currency of the country that has a lower interest rate trades at a premium.

For example, if the domestic interest rate is higher than that of the foreign currency, then forward points are deducted from the spot rate, which makes the foreign currency less expensive in the forward market. The result of this pricing is that the forward price should make the buyer indifferent to taking delivery immediately or at some future date. Thus, if the spot price of euros per dollar were 0.7194 and there was a discount of 40 points for forwards having a one-year maturity, then the all-in forward rate would be 0.7154.

The calculation of the discount or premium points follows this formula:

$$\text{Premium} = (\text{Exchange rate} \times \text{Interest rate differential}) \times \frac{\text{Days of contract duration}}{360}$$

There are a few problems with forward exchange contracts. First, because they are special transactions between two parties, it can be difficult to sell them to a third party. Also, the transaction premium offered may not be competitive.

Another problem is that the arrangement relies on the customer paying the company on or before the date when the forward FX contract matures. To continue using Toledo Toolmakers in an example, its terms to a European Union customer may require payment in 60 days, so it enters into a forward contract to expire in 63 days, which factors in an allowance of three extra days for the customer to pay. If the customer does not pay within 63 days, then Toledo still has to deliver euros on that date to fulfill its side of the forward contract.

EXAMPLE

The six-month U.S. dollar money market rate is 2.50 percent and the six-month euro money market rate is 3.75 percent. The USD/EUR exchange rate is 0.7194. The number of days in the forward exchange contract is 181. Because the euro interest rate exceeds the dollar interest rate, the dollar is at a premium to the euro. Thus, the USD/EUR forward exchange rate exceeds the spot rate. The premium is calculated as:

0.7194 spot rate × 0.0125 interest differential × (181/365 days) = 0.0045 premium

The premium is therefore 45 points, which results in a USD/EUR forward exchange rate of 0.7194 + 0.0045, or 0.7239. ■

EXAMPLE

Toledo Toolmakers learns on July 15 that a Belgian customer has financial difficulties, and has defaulted on a payment of 250,000 euro that Toledo expected to receive on October 15. Unfortunately, Toledo already sold this amount through a forward exchange contract having a EUR/USD exchange rate of 1.3900, with a settlement date of October 15. Since it now has an obligation to deliver currency that will not be available on October 15, it needs to enter into an offsetting agreement to buy 250,000 euro on the same date.

Since the date of the original contract, the exchange rate has worsened, so that Toledo now enters into a three-month forward exchange contract having a EUR/USD rate of 1.3850. On the settlement date, Toledo buys 250,000 euro for $346,250 (250,000 × $1.3850) and sells euro for $347,500 (250,000 × $1.3900), thereby incurring a gain of $1,250. ■

It is possible to mitigate this problem with the variability of customer payments by entering into a *forward window contract*. This contract has a range of settlement dates during which the company can settle the outstanding contract at the currency rate noted in the contract. This contract is slightly more expensive than a standard forward exchange contract, but makes it much easier to match incoming customer payments to the terms of the contract.

A related problem is when a company enters into a forward exchange contract to hedge an anticipated cash flow, but the cash never happens at all; perhaps because a sale was canceled. In this case, the CFO can enter into an offsetting forward exchange contract to negate the initial contract.

A variation on the forward contract is the *nondeliverable forward*. Under this arrangement, the only payment made between the parties is the difference between the spot rate and the forward rate. This net-cash solution can greatly reduce the total gross amount of funds being transferred.

CURRENCY FUTURES

A currency future is the same as a forward exchange contract, except that it trades on an exchange. Each contract has a standardized size, expiry date, and settlement rules. The primary currency futures center with substantial volume is the Chicago Mercantile Exchange (CME). The CME offers futures trading between the major currencies, as well as some of the emerging market currencies; however, the volume of contracts in the emerging market currencies is quite low.

These contracts are normally handled through a broker, who charges a commission. There is also a margin requirement, so that the buyer may be called on to submit additional funds over time, if the underlying futures contract declines in value. Part of this margin is an initial deposit whose size is based on the contract size and the type of position being acquired. All futures contracts are marked to market daily, with the underlying margin accounts being credited or debited with the day's gains or losses. If

EXAMPLE

Toledo Toolmakers ships product to a German customer in February, and expects to receive a payment of 425,000 euro on June 12. Toledo's CFO elects to hedge the transaction by selling a futures contract on the CME. The standard contract size for the EUR/USD pairing is 100,000 euro, so Toledo sells four contracts to hedge its expected receipt of 425,000 euro. This contract always expires on Fridays; the nearest Friday following the expected receipt date of the euros is on June 15, so Toledo enters into contracts having that expiry date. Because the standardized futures contracts do not exactly fit Toledo's transaction, Toledo is electing not to hedge 25,000 euro of the expected receipt, and it will also retain the risk of exchange rate fluctuations between its currency receipt date of June 12 and its currency sale date of June 15. ■

the balance of the margin account drops too far, then the contract buyer must contribute more funds to the margin account. If the buyer does not update his margin account as required, then it is possible that the position will be closed out.

Since currency futures have standard sizes and expiry dates, it is quite likely that a futures hedging strategy will not exactly match the underlying currency activity. For example, if a company needs to hedge a projected receipt of 375,000 euro, and the related futures contract only trades in units of 100,000 euro, then the company has the choice of selling either three or four contracts, totaling 300,000 and 400,000 euro, respectively. Further, if the projected currency receipt date varies from the standard futures contract expiry date, then the company will be subject to some foreign exchange risk for a few days. Thus, the standardized nature of currency futures contracts result in an imperfect hedge for users.

CURRENCY OPTIONS

A foreign currency option requires the payment of a premium in exchange for a right to use one currency to buy another currency at a specified price on or before a specified date. A *call option* permits the buyer to buy the underlying currency at the strike price, while a *put option* allows the buyer to sell the underlying currency at the strike price.

An option is easier to manage than a forward exchange contract, because a company can choose not to exercise its option to sell currency if a customer does not pay it. Not exercising an option is also useful when it becomes apparent that a company can realize a gain on changes in the exchange rate, which would not have been the case if it were tied into a forward exchange contract.

Options are especially useful for those companies interested in bidding on contracts that will be paid in a foreign currency. If they do not win the bid, they can simply let the option expire, without any obligation to purchase currency. If they win the bid, then they have the option of taking advantage of the exchange rate that they locked in at the time they formulated the bid. Thus, options allow a company to realize the original

margin that they quoted to a customer, rather than potentially having the margin erode due to exchange risk.

In an option agreement, the cost to the buyer is fixed up front, while the cost to the seller is potentially unlimited—which tends to increase the cost of the option to the point where the seller is willing to take on the risk associated with the contract. From the seller's perspective, the amount of an option premium is based on the strike price, time to expiration, and the volatility of the underlying currency. If the currency is highly volatile, then it is more likely that the buyer will exercise the option, which increases the risk for the seller. Thus, an option for a nonvolatile currency is less expensive, since it is unlikely to be exercised.

Currency options are available over-the-counter and are traded on exchanges. Those traded on exchanges are known as *listed options*. The contract value, term, and strike price of a listed option is standardized, whereas these terms are customized for an over-the-counter option.

Within an option agreement, the *strike price* states the exchange rate at which the underlying currency can be bought or sold, the *notional contract amount* is the amount of currency that can be bought or sold at the option of the buyer and the *expiry date* is the date when the contract will expire, if not previously exercised. If the option is *in-the-money*, then the buyer can exercise it at a better price than the current exchange rate. If the option is *at-the-money*, then the buyer can exercise it at the current market price, while it is considered to be *out-of-the-money* if the buyer can only exercise it at an exchange rate that is worse than the market rate. A *European-style option* is only exercisable on the expiry date, while an *American-style option* can be exercised at any time prior to and including the expiry date.

The problem with an option is that it requires the payment of an up-front premium to purchase the option, so not exercising the option means that the fee is lost. This is fine if a gain from currency appreciation offsets the fee, but is an outright loss if the nonexercise was caused by the customer not paying on time.

A more complicated version of the option is the *foreign exchange collar*. Under this strategy, a company buys one option and sells another at the same time, using the same expiry date and the same currencies. Doing so establishes an exchange rate range for a company. The upper limit of the exchange rate is established by the option the company buys, while the lower limit is established by the option that the company sells. If the

EXAMPLE

Toledo Toolmakers buys a 90-day option to buy 100,000 euro at $1.3900 for a fee of $4,000, which it plans to use as a hedge against a 100,000-euro payment from a customer that is due in 90 days. At the end of the option contract, the spot rate is $1.4350. Toledo elects to not exercise the option, thereby receiving 100,000 euro from its customer that can be exchanged at the spot price of $1.4350 for a total of $143,500. Thus, Toledo has gained $4,500 on the differential in the spot price, less $4,000 for the cost of the option, for a net profit of $500. ■

EXAMPLE

Toledo Toolmakers is contractually obligated to pay a French supplier 500,000 euro in three months. The current EUR/USD exchange rate is 1.3900. Toledo's CFO does not want to pay an option premium. The three-month EUR/USD forward exchange rate is 1.3950, and the CFO is willing to accept a variation of 0.02 both above and below this rate, which means that the acceptable currency range is from 1.3750 to 1.4150. The option premium for selling euros at 1.4150 is 0.10, while Toledo can also earn the same premium for buying euros at 1.3750. Thus, the cost of one option is exactly offset by the earnings from the other option, resulting in a net option cost of zero.

The actual exchange rate on the settlement date is 1.4300, so the CFO exercises the option to sell 500,000 euro at 1.4150, thereby avoiding an incremental loss of $7,500, which Toledo would otherwise have incurred if it had been forced to sell euros at 1.4300. ■

exchange rate remains within the upper and lower price points of the collar, then neither option is exercised. By accepting a moderate range of acceptable prices, a company can offset the cost of the premium paid for the purchased option with the premium from the option that is sold. The options are usually European-style, so they are only exercised on the expiry date.

Another issue with options is that they must be marked to market at the end of every reporting period, with the gain or loss recorded in the company's financial statements.

CURRENCY SWAPS

A currency swap is a spot transaction on the over-the-counter market that is executed at the same time as a forward transaction, with currencies being exchanged at both the spot date and the forward date. One currency is bought at the spot rate and date, while the transaction is reversed at the forward date and rate. Thus, once the swap expires, both parties return to their original positions. The currency swap acts as an investment in one currency and a loan in another. The amount of a foreign exchange swap usually begins at $5 million, so this is not an option for smaller foreign exchange cash positions.

The exchange rates of both transactions are set at the time of the initial transaction, so the difference between the two rates is caused by the interest differential between the two currencies over the duration of the swap.

The currency swap is useful when a company forecasts a short-term liquidity shortfall in a specific currency, and has sufficient funds in a different currency to effect a swap into the currency where funds are needed. In addition, the company offsets what is likely to be a high interest rate on the short-term debt with the lower interest rate that it was earning on funds in a different currency.

EXAMPLE

Toledo Toolmakers has excess euros that it will need in nine months to pay for a capital project in Europe. In the interim, its CFO wants to invest the euros in a short-term instrument, while also obtaining use of the funds in U.S. dollars to cover its operating cash flow needs. To do so, Toledo engages in a foreign exchange swap with its bank, under which it buys $10 million at a 0.7194 USD/EUR exchange rate, and sells €7,194,000. Simultaneously, Toledo agrees to sell back $10 million of U.S. dollars in nine months at a rate of 0.7163 and buy back €7,163,000. The difference between the spot rate and forward rate of 0.0031 represents the interest rate differential between euros and U.S. dollars over the nine months spanned by the swap agreement, or $31,000. Toledo earns the extra interest, because it has chosen to invest in the currency having the higher interest rate. ■

The currency swap is also useful when a foreign currency cash flow is delayed, and a company would normally be obligated to sell the currency on the expected receipt date, as per the terms of a forward exchange contract. To meet this contractually obligated payment, a company can swap its other currency reserves into the currency that must be sold and reverse the transaction later, when the expected cash flow eventually arrives.

EXAMPLE

Toledo Toolmakers has a short-term negative euro account balance of €500,000, which it expects will continue for the next six months. During that time, Toledo must pay its bank LIBOR plus 2 percent for the current account deficit. At the current LIBOR rate of 3.5 percent and EUR/USD spot rate of 1.3900, this represents an interest expense of $19,113, which is calculated as follows:

$$\$19{,}113 = €500{,}000 \times 1.3900 \text{ exchange rate} \times 5.5\% \text{ interest rate} \times (180/360 \text{ days})$$

Toledo has several million U.S. dollars available, so it engages in a six-month swap of dollars for euros, thereby eliminating the negative account balance. The interest rates in Europe and the United States are identical, so there is no premium or discount between the currencies. Toledo was earning the LIBOR rate on its short-term investments. The interest income that it gave up by engaging in the swap was $12,163, which is calculated as follows:

$$\$12{,}163 = €500{,}000 \times 1.3900 \text{ exchange rate} \times 3.5\% \text{ interest rate} \times (180/360 \text{ days})$$

Thus, by using a swap to use low-interest investments to offset higher-cost debt, Toledo saves $6,950. ■

PROXY HEDGING

If a company elects to receive a currency that is not actively traded, then it may have a difficult time locating a hedge in the same currency. However, changes in the value of the currencies of a large economic area, such as Southeast Asia, tend to be closely correlated with each other. If the CFO feels that this correlation will continue, then it may make sense to instead hedge through a highly correlated currency. However, just because the respective values of a currency pair were highly correlated in the past does not mean that they will continue to be in the future, since a multitude of political and economic issues can break the correlation.

SUMMARY

Forward exchange contracts are the most heavily used form of hedging, for two reasons. First, they are very inexpensive, having a modest transactional cost. Second, they are an over-the-counter product, and so can be precisely tailored to a company's individual needs. However, they firmly lock a company into the current spot rate, giving them no opportunity to participate in any future favorable price movements. Although a company could use partial hedging to give itself some upside potential, this is also a two-way street, with increased risk of loss if exchange rates move in the wrong direction.

Currency futures are more easily entered into and sold off, since they are standardized products that trade through a formal exchange system. However, these conveniences also present a problem, since a company's hedging requirements cannot precisely fit the amount or timing of available futures contracts. Futures also suffer from the same problem as forward exchange contracts—they leave no room to participate in any future favorable price movements.

Currency options have a clear advantage over the preceding two strategies in that they allow a buyer to exercise an option or let it lapse, thereby allowing a CFO to take advantage of favorable price movements. Against this major benefit is ranged the biggest problem with options—the premium imposed by the option seller. In practice, CFOs tend to buy options that are relatively far out of the money, since these options are less expensive, but doing so means that they must retain some foreign exchange risk. Because of the premium, options appear to be the most expensive alternative; however, you must also factor in the opportunity cost of using forward exchange contracts or currency futures where one cannot take advantage of favorable price swings. When netted against the option premium, the cost of options does not appear to be so prohibitive. Options also require closer monitoring than other strategies, since one must judge exactly when to exercise them.

In summary, forward exchange contracts and currency futures are easier and less expensive to engage in than options, and so are favored by organizations with simpler treasury operations and conservative risk profiles. Options are more expensive in the short-term and require closer monitoring, but can be financially rewarding to the more aggressive CFO.

CHAPTER TWENTY-ONE

21 Outsourcing the Accounting and Finance Functions

THE ACCOUNTING FUNCTION IS commonly outsourced, though this is usually limited to only a few tasks within the function. There are opportunities to outsource a wide array of services in this area, if a CFO is willing to work with multiple suppliers to achieve this goal. This chapter describes the advantages and disadvantages of using outsourcing for a variety of accounting services. There are also several points regarding contract clauses that the reader should know about before signing any contracts with suppliers. In addition, a section covers the various transition steps needed to hand over an in-house accounting function to a supplier. Many ways to control and measure the performance of suppliers are also revealed, as well as how this information can be used by the managers of the accounting and treasury functions. Finally, there are a number of issues to be aware of that can cause problems when a company wants to terminate a supplier relationship. These issues are described, along with possible solutions. After reading this chapter, a CFO should have a good grounding in the fundamental issues surrounding outsourcing the accounting function and will know how to negotiate contracts with suppliers, transition tasks to them, measure their performance, manage them, and sever relationships if necessary.

ADVANTAGES AND DISADVANTAGES OF OUTSOURCING

This section presents a series of advantages and disadvantages for outsourcing many of a company's accounting functions. Areas covered include accounts receivable collections, internal auditing, payroll, taxation, financial statement reporting, pension administration, transaction processing, and cash management. Each area covered places both the

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advantages and disadvantages in close proximity so the reader can compare and weigh the benefits and associated problems of using outsourcing.

Several points in favor of outsourcing are not covered for each of the accounting topics, since there would be considerable duplication. Those points are that many of these accounting areas are clerical or subject to automation—such as transaction processing, pension administration, and payroll—and are therefore nonstrategic. Because they are not important to a company's overall strategic direction, they should be outsourced so the CFO can focus on more important tasks that will impact its profitability or position in the marketplace.

The best reason for outsourcing the *collections* function is that the supplier may pursue those customers who refuse to pay with greater energy than would the in-house collections staff. Particular skill is required in persuading companies to pay for old invoices, and good collection companies employ people of this type. The downside of using collection agencies is that they can be so aggressive with customers that they will refuse to ever do business with the company again. However, since the company had to refer the customer's account to the supplier anyway, the company may not want to pursue further business relations. Also, a collections agency is typically paid a large percentage of each bill collected, normally about one-third of the total. However, a company usually passes along a bill to the collection supplier only at the point when it does not believe it can collect the bill itself, so any collection, even if not for the full amount, is better than what the company had before. Furthermore, many companies write off accounts receivable that must be handed over to collection agencies, so there is no expectation of ever collecting the funds. Also, a company can sometimes work with collection agencies that are willing to be paid by the hour rather than on a percentage basis. The alternative reduces the high cost of collection, but also converts the collection cost from a highly desirable variable cost to a fixed cost. In short, it is very useful to switch the most difficult accounts receivable collection items over to a collections supplier, since they are better at persuading customers to pay their bills.

Companies are now outsourcing their *internal audit* functions. The following set of reasons for taking this approach should be compared to the list of disadvantages that follow in order to fully understand the ramifications of using outsourcing in this area. Arguments in favor of outsourcing the internal audit function are:

- *Mix of skills.* If the auditing firm doing the work is a large one, the auditors provided can be changed for each audit, only using those people who are most skilled in the requirements of each audit.
- *Management ability.* The supplier can manage the audit for the company; since this is all the supplier does, it should be quite good at managing audits, and can probably do so better than an in-house staff.
- *Knowledge of best practices.* An auditor who reviews the functions of many companies will build up a knowledge base of how processes can be performed most efficiently and effectively, or has access to that knowledge through other auditors at the firm, and can therefore recommend changes to the company. Many internal audit staffs have been with their companies for years and have not acquired this same range of process knowledge due to a lack of exposure to other businesses.

- *Variable cost.* The company only pays for audits performed by the supplier, so the auditing cost can be switched from a fixed one for in-house staff to a variable one for outside staff.
- *Quick access.* The company has the option to quickly bring in an experienced audit team if it acquires a new business in a foreign location that is inconvenient for its internal staff to reach.
- *Reduced travel costs.* The company must fly its internal audit staff to any company location that needs an internal audit, whereas a large auditing firm can assign staff from its regional offices to go to those locations, thus avoiding the excessive travel costs incurred by the internal audit staff. This cost reduction only works if the auditing firm has regional offices near the company's locations.
- *No downtime.* Bringing in an audit team only for specific tasks allows the company to avoid the kind of nonproductive downtime that sometimes occurs with an in-house staff, such as the interval between the end of one audit and the beginning of the next.
- *No hiring and training costs.* A company can avoid the substantial hiring and training costs needed to staff and retain a top-of-the-line in-house audit team.

There are several important reasons why the internal auditing function should *not* be outsourced in some circumstances. Management should be aware of these reasons before making the decision to outsource:

- *Cost.* A major downside of using an outside auditing firm for internal audits is their substantial cost, which includes overhead costs and a healthy profit margin. There may be an additional concern that fees will be low-balled until the company has disbanded its internal auditing staff and has become reliant on the supplier for this work, at which point the supplier will increase its fees.
- *Training.* Some companies use the internal audit function to train their managers, since the job gives a good overview of many company functions. By taking away this job, a company loses its training ground for future managers. One solution is to team these personnel in training with the supplier's audit teams in order to provide ongoing training.
- *Experience.* The perceived quality of the auditors provided by the supplier may be lower than anticipated, since most auditing firms have very high turnover and also like to bring in junior employees in order to give them experience with different accounting systems. This problem can be avoided by previewing the qualifications of each person assigned to internal audits by the supplier.
- *Responsibility.* Management must still realize that it is responsible for the establishment and maintenance of internal controls and the audit of those controls. If the company is sued over a lack of controls, it cannot point to the internal audit supplier as the culprit—management will still be held accountable.
- *Independence.* An auditing firm is supposed to create ''walls'' within its own company that keep its internal audit work from interfering with the independence of its financial statement audit work. This is an especially difficult task for smaller firms, where there may not be enough people to separately assign to both the internal audit work and the periodic external audit.

The most commonly outsourced accounting function is *payroll*. There are some advantages to outsourcing:

- *Avoid filing tax payments.* A company can shift the burden of making timely tax filings to the supplier. The government requires rapid tax filings, and has imposed stiff penalties if taxes are not filed on time. For those companies with a chronic tax-filing problem, handing over this task to a supplier may save the company more money in tax penalties avoided than the entire cost of outsourcing.
- *Avoid paying for software updates.* Companies do not want to pay their software providers for new tax tables every year so they can correctly calculate payroll taxes through their in-house software packages. Since there are some incremental local tax rate changes somewhere every year, a company that runs its payroll on an in-house software package must incur this expense every year in order to stay current.
- *Avoid creating W-2 forms.* A payroll supplier will accumulate all annual payroll information into W-2 tax reports and even mail them to employees for the company. Otherwise, the in-house system would produce these documents and send them to employees.
- *Avoid printing paychecks.* A payroll printing can tie up a printer for a long time if there are many employees, and it must be closely monitored in order to avoid jamming. By using outsourcing, neither the printer nor the employee are needed for this task.
- *Use direct deposit.* Many in-house payroll systems do not allow direct deposit, whereas this service is offered by all major payroll suppliers. Direct deposit is most useful for companies whose employees are constantly traveling and who are therefore not on site to pick up and deposit their paychecks.
- *Use check stuffing.* A supplier can automatically stuff paychecks into envelopes for delivery to employees, removing a clerical task from the accounting staff.
- *Use check delivery to multiple locations.* Though most payroll services will not mail checks to individual employees, they will send batches of checks to multiple company locations for distribution to employees.
- *Stamp signatures on checks.* The supplier stamps an imprint of an officer's signature on all payroll checks, thereby keeping someone from having to perform this boring task.
- *Use custom and standard reports.* Most payroll suppliers provide a plethora of reports that cover the needs of most companies. For special reporting needs, there is usually a custom report-writing tool available that allows the company to create any additional reports it needs.
- *Link to 401(k) plan.* A few payroll suppliers can make automatic deductions from paychecks and deposit this money directly into a 401(k) plan on behalf of the company, thereby eliminating a great deal of paperwork associated with this function.

Despite the formidable array of advantages just noted, some companies do not outsource the payroll function, usually for one or more of the following reasons:

- *Cost.* Payroll suppliers can be quite expensive if all possible payroll services are used. The most typical supplier ploy is to initially charge very low rates for the basic service of printing paychecks. However, once a company has signed up for this service, it will find that additional services may easily exceed the cost of the basic service. For example, additional fees will be charged for automatic signature stamping, check stuffing, delivery to multiple locations, access to custom reporting software, and direct deposits.
- *Conversion problems.* There are a number of data items that must be properly converted to the supplier's database to ensure that employees will continue to receive paychecks in the correct amounts and with accurate deductions removed. If the conversion to the supplier's database does not go well, the company may become so disenchanted with the supplier that it converts back to an in-house solution. Conversions can be a problem, in part, because so many companies want to switch to outsourcing at the beginning of the calendar year, which creates a major work overload for the system-conversion staff of the supplier.
- *Create manual paychecks.* It can be difficult to determine the correct amount of tax deductions when cutting a manual check for an employee. However, many payroll suppliers now offer either automated call-in or Internet-based calculations that provide this information.
- *Must send in payroll information.* The payroll supplier does not collect payroll information. The company must still do this, organize it, and submit it to the supplier for wage and tax calculations. As this may be the primary source of clerical time in computing payroll, one may not see how to save costs by shifting to a supplier. This is less of an issue if most company employees are salaried, since there is little time-keeping data to collect. Also, some payroll suppliers offer bar-coded time clocks that can be linked directly into their software, so there is little clerical effort required.

Taxation can be outsourced when a company is not big enough to support the full-time services of a tax department of its own. This is frequently split into two pieces, with state and federal taxation reporting going to a supplier and local taxation being kept in house. The reason for this split is that many taxation firms are experts at state and federal issues because they have their own teams of experts who advise them on these issues; however, they have little incentive to develop an expertise in limited locals areas, such as enterprise development zones.

A company has a supplier create *financial statements* for it when its in-house accounting staff is not large or experienced enough to do so correctly in a timely manner. This can be a good idea if the accounting firm used is a large one, for its staff will have an excellent knowledge of all reporting requirements needed for financial statements, especially for all required footnotes. A popular variation on this approach is to have an outside firm verify the accuracy of the financial statements that were produced by the in-house staff, especially if the company is a public one and its reports are going to the Securities and Exchange Commission (SEC), which requires a very detailed knowledge of the SEC's reporting requirements. The downside of this approach is that accounting firms usually charge high rates for this service. Thus, one must decide if the improved level of reporting is worth the additional cost.

The advantage of using a supplier to handle a company's *401(k) plan* includes reducing the paperwork associated with tracking investments for employees and changing the cost of this function from the fixed cost of an in-house staff to the variable cost of having a supplier do it. This becomes a variable cost because the pricing structures of most suppliers are on a per-person basis. For example, there is a per-person setup fee, an annual per-person maintenance fee, and a per-person fee to remove someone from the plan. If the company's headcount changes, the cost of the supplier will vary with the headcount level. The primary disadvantage of this approach is the risk of hiring a bad supplier who does a poor job of accurately investing funds for each employee. This problem can be partially mitigated by requesting references and contacting them for detailed information about the supplier's performance.

Transaction processing can also be outsourced. One advantage is that the supplier may have a better knowledge of world-class processes that allows it to complete transactions faster than the company's in-house staff. Also, if the company has a widely dispersed transaction-processing function, a supplier can consolidate these locations into a single, highly efficient location to reduce costs. In addition, a company may be able to replace poor in-house management with (presumably) top-notch supplier management. The downside of outsourcing transaction processing includes the cost of doing so; unless they can use their greater knowledge of processes to cut costs, suppliers will be more expensive than the in-house function.

CONTRACTUAL ISSUES

This section covers a variety of contract-related issues that a company should be aware of before signing a contract with a supplier to take over an accounting or finance task.

A contract for *payroll* services will only be negotiable on price, because a payroll supplier has thousands of clients and prefers to use a standard contract for all of them—it cannot begin to track slight contract changes for all of those companies, so it does not allow them. However, suppliers have modified their computer systems to allow for different prices for each company, so this one area is subject to negotiation. Pricing is typically on a per-person basis, plus a fixed baseline fee for various services. A company has the most negotiating power if it has a large number of employees to put on the supplier's payroll system; the prospect of losing all of that revenue will normally elicit price cuts by the supplier. A small company will likely have no luck in negotiating reduced prices, for it has no leverage for doing so.

A contract for *tax work* is negotiable on price and the supplier staff to be used. Any tax supplier charges a basic hourly rate for work performed, and then discounts this rate for any number of reasons. One can reduce this per-hour rate through negotiation, or can convert the tax work to a fixed fee for a baseline level of work performed, with an hourly rate to be charged for any additional work that falls outside of the deliverables noted in the original contract. If a specific supplier employee does especially good work, one can specify that all tax work will be completed by that person, or at least that the company can reject supplier personnel whom it feels are unsuitable for doing any of its tax work.

A contract for *collections* work focuses on reimbursement. A typical collections agency wants to keep a large percentage of all money it collects on a company's accounts receivable. This percentage typically varies between one-quarter and one-third of the amount collected. If a company gives a large dollar volume of its business to a collections agency, it may be possible to negotiate this number down. If this price is too high, a company can ask a law firm to collect the largest receivable debts in exchange for per-hour compensation. The only other negotiation point is whether the collection agency should be allowed to finish collecting any accounts receivable it has in its possession at the time when the company decides to stop using the agency. In most cases, the agency is allowed to finish this work, since it may have already invested considerable effort in attempting to collect them. If the collections agency is a law firm working on an hourly basis, then one can take back the accounts receivable at any time.

A contract for *internal auditing* must target hourly fees, the specific staff to be used, and the methodology that will form the underpinnings of all internal audit work. The hourly fees are subject to considerable negotiation, with price cuts based on the anticipated number of staff to be used as well as on the time of year when the supplier's staff will be used. Since most suppliers who provide internal audit work are also auditing firms, they have poor staff utilization during the summer and fall periods and are most likely to accept lower pricing during those periods. A company may have developed its own detailed internal auditing methodology and wants the supplier to continue using it—this is rarely a problem for the supplier. A typical contract clause addressing this issue should, however, allow the supplier to recommend changes that will bolster the methodology to help provide more complete audit results. Finally, the contract should contain a clause permitting the company to accept or reject personnel who are assigned to its audits.

A contract for *pension management* tends to have rigid pricing, but does allow some movement on the types of investments offered to employees. Pricing normally includes both baseline fees and per-person fees that are not negotiable unless the company has a large pension plan that can be highly profitable for the supplier. The more common point of negotiation is in having the supplier create a mix of investment vehicles, normally ranging from conservative to speculative, that the company's employees can select from.

A contract for *transaction processing* has the largest number of clauses open to negotiation. One point is that the company should push to have as many services as possible covered by the baseline or per-transaction fee. Otherwise, the supplier will charge much higher add-on fees for any extra services. Also, if the company's staff is being transferred to the supplier, the contract should specify the minimum time period for retaining these employees (in order to give them some job security), or at least the minimum percentage of employees who will be kept by the supplier. The contract should also specify a minimum time period during which the supplier must keep key personnel working on company business; otherwise, suppliers may take the best of the transferred staffs and move them off to work on projects for other clients. Another issue is that the company should have control over the implementation of new efficiencies by the supplier. This may seem like no control is required—just do

whatever it takes to cut costs—but there may be political reasons within the company for keeping the methods of transaction processing the way they are. If this control proves to be a difficult negotiating point, then a fallback position is to require company approval over any transaction-processing changes that impact other areas of the company.

TRANSITION ISSUES

This section covers the specific transition issues associated with each of the accounting tasks that can be outsourced.

For the *payroll* function, the first transition step is to meet with the supplier about one month in advance of the conversion date (or earlier if the payroll system to be converted is especially large or complex). This meeting should cover all key conversion dates and who is to perform which tasks by those dates. Since the payroll function must usually be brought on-line with the supplier as of the first day of the year, this is a very time-sensitive process, so the initial meeting with the supplier is especially important. If various extra payroll features, such as automated check signing, are to be added to the payroll later on, these dates should also be agreed on by both parties during the meeting. The next transition step will be to transfer all payroll information for all employees to the supplier at the end of the year or slightly prior to that date. This may require either the conversion of existing computer data to a format that is readable by the supplier's computer system or a large rekeying effort by the company's payroll staff. It is particularly important during this step to provide time and personnel resources to review all rekeyed information to ensure that it is correct. There must also be enough time to adequately train the staff who will be inputting information into the payroll system on an ongoing basis. Supplier representatives should be on hand during the first few data-entry sessions to ensure that all problem areas are adequately addressed.

Handing over the *financial reporting* task to a supplier is one of the easier tasks to transition. A quality accountant can produce a financial statement directly from a general ledger report and can add notes to the financial statements based on periodic interviews with company management. The only transition steps required here are to go over with the supplier how individual accounts are to be rolled up into financial statement line items and then to monitor the supplier's financial reports for several months to ensure that the reporting is being completed properly.

The *internal audit* function requires several extra transition steps to complete. Since the quality of the supplier's audit staff has a strong impact on the speed and in-depth analysis that will characterize each internal audit, the CFO should carefully review the qualifications of all auditors proposed by the supplier and feel free to reject any who appear to have too little experience. Next, the supplier's staff should be thoroughly trained in the company's policies and procedures, meet key employees, and be set up in permanent offices with ready access to office equipment. This step is necessary to ensure that the auditors start off as efficiently as possible. Next, if the company wants to continue with its own internal auditing methodology, it can train the supplier's staff in

its use. This is of particular interest in those industries where a standard audit program would not work; for example, the gambling industry requires intensive and frequent reviews of all controls over the cash function, which would not receive much attention under a standard audit program. The CFO and the supplier's management must then agree on an audit program for the upcoming year. The CFO has primary control over the contents of this plan, but the supplier is certainly welcome to recommend changes that will give a more rounded review of as many control points as possible, or which will take advantage of the particular skills of the supplier's staff. It is also helpful to arrange for periodic review meetings in which the supplier's audit staff goes over the findings from each of its audits and the CFO asks for further reviews based on these findings, or modifies the schedule of remaining audits based on time or cost constraints. The final transition step is to arrange for other means of training future company managers if this function had previously been used for that purpose.

Turning over the *taxation* function to a supplier is one of the easiest accounting tasks to outsource. The supplier who normally takes over this work is the company's current audit firm. The CFO merely needs to authorize the audit firm to begin tax work, so it can review the audit workpapers in its possession to begin work. However, if the CFO has chosen a supplier other than the company auditor for this work, the company must send written permission to the auditor to copy audit files and send them to the tax preparer. Finally, though most tax preparers are too expert in their field to make mistakes, most companies will review the tax forms they have prepared prior to sending them on to the government.

The most difficult accounting task to outsource is *transaction processing*, because the task may involve large numbers of employees, custom software, supplier training, and a risk of task interruption. However, if the transition of this task is properly carried through, the company's customers will notice no change in the accounting function's services to them. The first task in this area is to transfer the company's staff to the supplier. Since the supplier might not have chosen to hire all of the existing staff, it might also be necessary to train new staff in how to run the company's transaction-processing systems. This training task may extend to the supplier's management team, who might not have hired the company's management team to oversee the area. Also, if the supplier decides to set up an off-site facility, the company's existing hardware and software may have to be removed to that location. An alternative is to load the company's software and related database of information into the supplier's computers at a preexisting location. In either case, the company will have to transfer the software license for the software it uses to process transactions from the company to the supplier, which may involve a substantial payment to the software provider. Once all of these steps have been taken, the supplier should run through a set of sample transactions to ensure that the system is operating properly, prior to processing any real transactions.

The transition process for *pension management* starts with sending all account information for each participant to the new supplier. Since the current supplier may have the most up-to-date form of this information, written permission may be needed for its release to the new supplier. This information must be loaded into the supplier's database and checked for accuracy. Next, the company must transfer all fund balances to the supplier. Sometimes the money is invested in specific stocks or third-party funds, so simply transferring the power to invest this money to the new supplier is a sufficient way to

transfer the funds, which do not really move from where they have been invested. However, if the new supplier has its own funds in which pension investments are to be made, then the money must be extracted from the original supplier and given to the new supplier for reinvestment. In this second case, the company must have all plan participants choose new investment vehicles in which to invest their funds—assuming that the pension plan is a 401(k) plan where employees make their own investment decisions. This paperwork must go to the new supplier, who uses it to apportion the transferred funds to its investment vehicles. Also, the company's in-house human resources personnel must be given adequate stocks of the supplier's investment forms and be instructed in their use. These forms are needed on an ongoing basis to allow employees to enter or exit the plan, or to alter their mix of investments or amount of funds invested. Also, the supplier commonly has its own proprietary software that it gives to the company to input new pension contribution information for each employee following each pay period; the employees who will do this inputting must be trained in how to use the software and allowed practice sessions with test data. Finally, it is advisable to closely review all pension statements for each employee following the first few months of the transition to ensure that all information was correctly converted to the new supplier.

CONTROLLING SUPPLIER PERFORMANCE

This section covers the variety of control points available to a company that wants to ensure that suppliers are completing their designated accounting tasks as efficiently and effectively as possible. Most companies will not have the resources to implement all of the controls noted in this section, but a mix of selected controls should be sufficient to maintain adequate control over accounting suppliers.

The primary control point is the internal audit. The internal audit team should follow an audit program that takes it through a review of each supplier's activities regularly enough for the suppliers to know that they will be undergoing an audit at least once a year. A few of the more common audit objectives are as follows:

- Verify that supplier invoices have an attached approval signature or purchase order.
- Verify that expense reports are approved and have supporting documentation for expenses of $25 or more.
- Verify that all accounts receivable credits have been approved.
- Verify that appropriate sales tax amounts are charged on invoices.
- Verify that invoices were mailed in a timely manner.
- Verify that payroll taxes are being deposited.
- Verify that tax returns have no material errors.
- Verify that financial statements and accompanying financial notes have no material errors.

Once the audit team has completed its audit program for a supplier, it should go over its findings with the management of the supplier to verify that all audit findings are accurate and then meet with company management to present its findings and

recommendations. A key consideration when using an audit team is whether it should be outsourced. If the company has an outside audit firm take over this key function, that firm should not be allowed to take over any other accounting tasks—otherwise the audit team will be reviewing the work of its employer, which will not result in an independent review of operations.

Bonuses and penalties are one of the most effective ways to control suppliers. To begin, the company must create target goals for suppliers to achieve. The suppliers must sign off on these goals in advance, so there is no conflict over the nature of each goal, how it is measured, who measures it, and the size of the penalties or bonuses that will result from the measurements. The company must track the measurements, not the suppliers, so that suppliers will not be tempted to skew the results. If the penalties or bonuses tied to these measurements are large, then the measurement results should be given to suppliers during formal meetings, so they can defend the measurement results. When suppliers can gain or lose significant amounts of money through performance measurements, their performance will improve dramatically.

There should be a separate line item in the budget that shows the cost of each accounting supplier. When this information is listed in the monthly financial statements, company management gains a clear understanding of the cost of each supplier and how that cost is changing in comparison to the budget. If there are significant cost overruns appearing in the financial statements, management can take action to reduce them, either through negotiations, less use of supplier services, or by switching to a new supplier.

The final control area is the schedule review meeting. This is useful for going over the results of internal audits, reviewing progress toward predetermined goals, and discussing any problems that have arisen since the last meeting. An agenda should be distributed in advance and strictly followed to ensure that all major areas are addressed. The company should have a meeting secretary record the minutes of each meeting, distribute them to participants, and require that the chief representatives from each side sign off on the meeting minutes as being accurate (or modify them as necessary and then sign off). These minutes should be kept on file in case there are questions later on about what was agreed on during meetings. The number of meetings per year will vary greatly with the type of accounting function being reviewed. Some of the more automated accounting tasks, such as payroll, need as few as one review meeting per year, though many more may be required while the area is first being implemented. Other areas that require constant interaction between the staffs of the company and supplier may require monthly review meetings. The one area that must be reviewed frequently is transaction processing, because problems in this area that are not quickly addressed will cause problems with the company's accounts payable and receivable, which can irritate customers or suppliers.

MEASURING OUTSOURCED ACTIVITIES

Given the large number of tasks within the accounting function that can be outsourced, there are many measurements needed to properly keep track of them all. The measurements are listed in alphabetical order by task.

Collections

- *Percentage collected of dollar volume assigned.* The primary performance measure for any collections agency is the amount of money collected out of the accounts transferred to it. An ineffective agency is one that cannot collect at least a portion of each account receivable turned over to it. Since the company wants to work with only those agencies that can convert the highest possible proportion of accounts receivable into cash, this is the primary measurement to use. The calculation is to divide the total cash received from the agency by the total amount of accounts receivable assigned to it. There may be a large time gap between when the agency receives the account and when the cash comes in, so it is better to annualize this measurement in order to more closely match inflows and outflows.

Financial Statements

- *Accuracy of accruals.* Most suppliers of financial statements only take a set of reports supplied by the company and use them to construct financial statements—they do not get into any journal entries, such as accruals. However, for those that do, it is important that accruals be made correctly. Incorrect accruals lead to inaccurate financial statements, not only for the month in which the accruals are made but also for the month when the accruals are reversed. This measurement is derived by having the internal audit team periodically review the calculations used for each accrual and then come up with its own accruals. The net variance between the two sets of accruals is the percentage by which the supplier's accruals are inaccurate.
- *Number or percentage of material irregularities.* A supplier must be able to restate a company's reports into an accurate set of financial statements. Any material irregularities in the numbers or accompanying financial notes may cause problems with the company, since lending, investment, and regulatory bodies rely on this information. This can be a difficult measurement to derive. The internal audit team should periodically review the statements for material irregularities, wade through the claims and accusations between the company and supplier regarding how the irregularities occurred, determine the amount by which the financial statements are incorrect, and derive a percentage of inaccuracy based on how far off the profits are from what they should have been. If the problem lies in the accompanying notes, then the measurement is purely qualitative and should be reported as a discussion of how the notes are incorrect.
- *Time to release statements.* A supplier may take its time in preparing and mailing out a company's financial statements. This can be a major problem for the SEC, banks, and investors, who require this information by specific deadlines. Banks frequently require that financial statements be delivered by specific dates—no financial statement, no loan. To measure this item, designate to whom financial statements are to be sent by the supplier, and have that person record the number of days lag between the end of the reporting period and the receipt date.

Internal Auditing

- *Cost per audit.* Suppliers of internal audits are usually much more expensive on a per-hour basis than an in-house staff. However, this should not be the way to measure the cost effectiveness of an internal audit supplier. Due to the increased experience and training of many supplier employees, internal audit engagements can be completed quite quickly and result in more suggestions for improvements. Since suggestions for improvement are difficult to quantify, it is better to measure the supplier based on just the cost of the audit (as taken from its billing statement to the company), and then evaluate this information in light of the perceived value of suggestions made.
- *Percentage of audits completed.* When a company brings in a supplier to conduct a series of internal audits, it usually starts with a plan of audits to be conducted over the upcoming year. If the supplier cannot complete all of the audits that it agreed to, it is not being efficient and may be replaced in favor of someone else who can do so. This item is easily measured by dividing the total number of audits completed (defined as having been signed off on by all parties) by the total number of audits listed in the annual audit plan.

Investments

- *Accuracy of trades.* If the company has a supplier handling all investment trades for it, the company wants some assurance that the trades are being handled properly. For example, authorizations to purchase or sell specific bonds or stocks should be carried through with total accuracy. The company's internal audit team or a staff person can regularly measure this by comparing the company's records of what it authorized for trades to the supplier's periodic statements showing what it actually did. Any problem trend should prompt a discussion with the supplier, if not its immediate firing—a company cannot run the risk of having its funds improperly stored in the wrong investment vehicles.
- *Brokerage fees as a percentage of the amount invested.* A company conducting large numbers of trades should be able to negotiate very good brokerage rates from its supplier. Companies with smaller trading volumes may pay higher rates, since the supplier has no incentive to offer lower prices to retain their business. Brokerage fees are usually located on the periodic brokerage billing statements. If not, the supplier may be hiding excessive fees. If the supplier is unwilling to change its statement format, the company may be better served by switching its business to a more open supplier.

Payroll

- *Proportion of fees for extra services.* A payroll supplier likes to gain business by charging low fees for basic payroll-processing services, since companies make the decision to use suppliers based on these initial fees. The suppliers then charge exceedingly high rates for all additional services, which companies ask for after they have enrolled with the supplier and are "locked in." A company should separate

these extra fees from the baseline fees to gain an understanding of incremental costs. The calculation should be the total additional fees per reporting period, divided by the total fees during that period.

- *Proportion of payrolls delivered to correct locations.* One service provided by payroll suppliers is guaranteed delivery of payrolls to the company's various locations by payday, usually using overnight mail delivery. If a payroll is sent to the wrong location or lost, this causes major personnel problems (since employees are not being paid), and therefore should be measured. The measurement is to summarize all instances when payroll was incorrectly delivered and to divide this by the total number of payroll deliveries in the reporting period. There is never a problem with collecting the information for missing payrolls—company employees will bring this problem to your attention very quickly.
- *Timeliness in paying payroll taxes.* One of the primary tasks of the supplier is to pay all payroll taxes on behalf of the employer. This greatly reduces the labor and risk of penalties for nonpayment by the company. It is a simple measurement to track, for the government will notify the company of any late payments. If there are no notifications, then the supplier has filed tax payments at the appropriate times. The measurement is to divide the total number of missed tax payments by the number of payrolls per year to determine the average timeliness in paying payroll taxes.
- *Transaction fees per person.* A payroll supplier's services are billed as a mix of per-person costs and fixed costs that are not linked to headcount. The bulk of these fees are based on per-person costs, however, and are therefore an excellent way to determine the per-unit cost of this service. Most payroll providers send out highly detailed billing statements after each payroll, so the information used to derive this measurement is usually easily obtained. To calculate it, summarize all costs per payroll for each person for whom a paycheck was created. This may include fees for check preparation, stuffing, extra calculations for vacations or 401(k) deductions, and wire transfers. All of these per-person fees should be compiled when deriving the transaction fee per person. The total fees are then divided by the total number of employees paid in the period to come up with the per-person amount. If a company has different payrolls of different lengths (i.e., once a week or twice a month), the costs should be annualized to properly account for the costs of all payrolls.

Pension

- *Investment return.* A typical pension plan will allow a participant to choose from a variety of funds, each of which has a different level of return and risk. To a large extent, the desired return is up to the participant and not the supplier. However, the supplier may do a poor job of managing the funds or extract too large a portion from each investment in the form of management fees, resulting in low returns. If so, it may be time to try a new pension supplier. This is measured by having the supplier provide a quarterly statement of investment return for each fund in the pension plan.

- *On-time release of funds.* Pension suppliers are in charge of disbursing funds to plan participants. These payments normally go straight from the supplier to the participant, so it is difficult for the company to determine if there are any problems with the release of funds on time. However, if there is a pattern of employee complaints in this area, there may be grounds for further investigation.
- *Release of statements on time.* Most pension suppliers issue investment statements to plan participants once a quarter. The in-house pension coordinator will receive many employee complaints if these statements are not released on time, since employees want to know how much money they earned in the last quarter. Also, any supplier that cannot get this simple report out on time may have other administrative problems related to tracking the investments, so not being able to release statements on time may be a sign of other problems at the supplier. This measurement is tracked by comparing the date when statements are received to the date when they are due.

Taxes

- *Absence of penalties.* One of the main reasons for employing someone else to prepare a company's taxes is to avoid tax penalties. These penalties can be caused either by filing tax returns too late or by filing incorrect returns. In either case, the company pays the penalties. This measurement is simply the total of all penalties and related charges paid to tax authorities in a given time period. If company management finds that the tax preparer's fee plus the tax penalties sum to more than the company was spending internally to prepare the tax returns, it may be time for a new supplier.
- *Timeliness of filing.* A tax preparer must be able to file all tax returns on time. This is a large chore if the preparer is filing returns on behalf of the company for a large number of states, perhaps including quarterly returns of various kinds, as well as those tax filings sent to the federal government. Nonetheless, despite the volume, it is the tax preparer's responsibility to send out all tax returns on time. Otherwise, the company may have to pay penalties for late filings. This measurement is easy to track, since the company will be notified by the various government authorities whenever a filing is late—usually by sending a penalty notice. The number of these late filings can be divided by the total number of tax filings to determine the proportion of late filings. One consideration here is that a tax preparer may be late with a variety of inconsequential tax filings but on time with the more important income tax returns. In these cases, due consideration should be made for the importance of the filings that are late.

Transactions

- *Average employee expense report turnaround time.* One of the most sensitive accounting issues is the review, approval, and payment of employee expense reports. If payments are made incorrectly or late, employees will be more irate than if the accounting function were to have problems in any other area—after all, it is their money. This problem can be avoided by periodically reviewing the time required to

pay employees after they submit expense reports. The sampling method can be either to submit sample expense reports and track the time required to receive payment back or to have an audit team review the supplier's payment records to determine the average turnaround time.

- *Average time to resolve errors.* Once an error is found, it is important to fix it as soon as possible. Otherwise, the paperwork associated with it is relegated further back in the archives area and is more difficult to research and correct. Also, there may be problems caused by an error that will magnify over time and involve considerable effort to correct—angry business partners certainly being the greatest danger to avoid. This is a difficult measure to derive, since a transaction-processing supplier can easily hide the existence of mistakes or mask the amount of time it took to handle them. The best approaches are either to rely on the supplier to track this measure or to send in an audit team. The audit team can find evidence of error correction by looking for journal entries or unusual debits or credits in the accounts payable and receivable journals—these are normally added to the records to fix a previous problem.
- *Cost per transaction.* The cost of a transaction-processing supplier can vary dramatically based on the volume of transactions processed. During a month when there are many invoices to process or bills to pay, the apparent cost of the supplier increases dramatically. However, it is misleading to look at the total cost of such a supplier, since the cost of using one is so dependent on processing volume. Instead, the cost per transaction should be used. This cost does not vary much, unless there is a significant change in the volume of transactions. This cost is easily obtained from the supplier billing statements, and should be tracked on a trend line to spot any changes to the per-unit cost.
- *Error rate on processing.* It is very expensive to use staff to research and resolve any problems caused by incorrect transaction processing. It can also anger customers who may be incorrectly billed, or suppliers who are incorrectly paid. To determine the extent of this problem, the company should schedule periodic audits of all processed transactions to determine the percentage of errors in such areas as billing addresses, accounts payable matching, and tax rates on billings.
- *Percentage of payment discounts taken.* Any supplier who takes over the accounts payable function should certainly be able to process payments fast enough to take all early payment discounts. If not, the company may be losing more money in discounts lost than it is saving by using the supplier. The easiest way to measure this item is to have the supplier generate a monthly report listing all payments made and those for which discounts were taken. An audit team can then sample the payments listed on this report to verify that all discounts were taken, as well as to verify that all payments made during the month were listed on the report. This review can verify that the reported percentage of payment discounts taken is correct.
- *Timeliness of processing.* Some transactions must be processed on time, or they impact company cash flows. A prime example of such a transaction is billing, which should be conducted every day to avoid a reduction in the inflow of cash payments from customers. An internal audit team can measure this item by comparing the arrival of paperwork at the supplier to initiate the transaction processing (with the

date of receipt presumably being stamped on the document by the supplier) with the date when the transaction was completed.

The measurements noted in this section focus on the timeliness, accuracy, and cost of each accounting task—the same items that are of concern for an in-house accounting department. Though using all of these measurements at once would be quite a data-collection and analysis burden, a blend of some portion of the measures would be an effective means of monitoring the outsourced accounting tasks.

MANAGING SUPPLIERS

Outsourcing the accounting function almost always occurs in a piecemeal fashion, with one task going to a supplier, followed by a lengthy evaluation period, followed by outsourcing another task. Rarely does an accounting function ever reach the point of being totally outsourced. Instead, a number of key functions, such as cost accounting and financial analysis, are always kept in house. This means that an accounting manager must also be kept to manage the remaining functions. Typically, the in-house accounting manager (usually the controller) will oversee the activities of suppliers dealing with accounting transactions, internal audits (though this may shift to the CFO or the board's audit committee), collections, financial reporting, taxation, and payroll. Also, the corporate treasurer will oversee the activities of suppliers dealing with investment management, and pension management. In a smaller company without a treasurer, the suppliers dealing with all of these functions will usually be overseen by the controller. The outsourcing portion of a controller's job description is shown in Exhibit 21.1.

DROPPING SUPPLIERS

With a few exceptions, a company can remove itself from an accounting outsourcing arrangement quite easily, since there are minimal supplier investments involved and the transfer of staff and fixed assets is small. This section points out the areas where this is not so easy, as well as the issues to deal with when this is the case.

One of the more difficult tasks to take away from a supplier is *pension management*, because it is costly for the supplier to enroll employees in investment funds and to set them up in their computerized asset-tracking systems. If the company pulls its business away from the supplier after a short time, the supplier will probably not earn any profit at all, since it earns its profit after start-up costs have been covered by a number of periodic maintenance payments. It may take more than a year before profits begin to flow in for the pension supplier. Thus, suppliers like to charge per-person and lumpsum exit fees to keep a customer from pulling out and also to recoup their costs if companies pull out despite the fees.

If a company wants to pull its business away from a *collections* agency, it is customary to let the agency finish collections work on any accounts receivable that

EXHIBIT 21.1 Outsourcing Portion of the Controller's Job Description

Employee Title: Controller

Reports to: Chief Financial Officer

Responsibilities:

- Sign off on all agreements with the various accounting suppliers.
- Authorize the release of funds for payment of suppliers.
- Compare actual costs charged to costs listed in contracts to determine the causes of variances; follow up on these variances with suppliers.
- Measure service levels for all accounting areas and resolve any problems.
- Authorize the movement of cash between accounts.
- Approve the transfer of large accounts receivable to collection agencies.
- Review and approve supplier-generated financial statements.
- Review and approve supplier-generated tax returns.
- Approve the internal audit program, and review the findings of completed reviews.
- Approve investment criteria.
- Manage the transfer of functions from the company to suppliers.
- Manage any tasks within the accounting function that have been kept in house.

the company has already given to it. This prevents the collections agency from complaining that the company is trying to avoid paying collection fees on any accounts receivable that the agency was on the verge of receiving. If the company feels that the collections agency must stop all work on behalf of the company at once, then an alternative is to pay the agency a negotiated fee in exchange for handing back any accounts receivable that it has not yet collected. This fee should be included in the initial contract with the agency, thereby avoiding any bickering about fees later on.

Canceling an outsourcing contract with a *payroll* supplier is easy to do, but a CFO should think through the ramifications before going forward with this step. The main problem involves tax and pay accumulators. If a single payroll supplier accumulates all of this information for a full calendar year, it will agree to issue W-2 forms to the company for its employees at the end of the year. However, if the supplier is taking over for only part of a year, it will either not guarantee the accuracy of the W-2 forms or will not agree to issue the forms at all. This means that the company must manually produce W-2 forms at the end of the year, which can be a considerable chore if there are many employees. The best way to avoid this problem is to only switch payroll suppliers at the end of the calendar year, when payroll and tax accumulations are complete and can be reported as such on employee W-2 forms.

The most difficult area to terminate is *transaction processing*, because the supplier may have hired the company's staff and purchased its computer processing equipment, and will want to return both. If the company does not want to hire back all of the staff it sent to the supplier, it may have to negotiate payment of some portion of the severance payments to them. The company will also need to pay for any equipment previously purchased from it by the supplier; if so, there should be a clause in the original contract stating the prices at which the equipment will be repurchased. The company may also need to transfer back the license to any transaction-processing software that the supplier took over. Also, all transaction information must be sent

back to the company and closely reviewed to ensure that no accounts payable or receivable transactions are missed.

SUMMARY

Accounting outsourcing is unique because there are so many functions to outsource—no one supplier does all of them, but a number of them can be used in concert to shift essentially all accounting functions away from an in-house department. Tight control and carefully planned, sequential transitions by the CFO are the keys to successfully outsourcing the accounting function.

CHAPTER TWENTY-TWO

22 Mergers and Acquisitions

THERE ARE A GREAT many kinds of analysis needed when a company is contemplating an acquisition. For a full acquisition, involving the assumption of all financial, environmental, and legal liabilities, as well as all assets, there are a great many subsets of analysis to perform. However, for a lesser acquisition, such as the purchase of all or specific assets, the number of analyses is substantially less. In this chapter, the types of acquisition analysis are broken down into a wide range of categories, which makes it easier for a CFO to select just those needed for a specific type of acquisition. In addition, a complete checklist of merger and acquisition analysis questions is included in Appendix C.

Once due diligence is complete, the CFO must estimate the valuation of the acquiree, which can result in a broad range of possible prices. Several methods are described for making this determination. The most common types of legal structures are also noted for acquiring an entity.

When reading this text, keep in mind that the terms merger and acquisition are not the same thing. An *acquisition* is when both the acquiring and acquired company are still left standing as separate entities at the end of the transaction. A *merger* results in the legal dissolution of one of the companies, and a *consolidation* dissolves both of the parties and creates a new one, into which the previous entities are merged.

EVALUATING ACQUISITION TARGETS

The analysis of an acquisition is like no other type of financial analysis—not because the analysis itself is different, but because of the logistics of the situation. Typically, a potential acquisition situation arises suddenly, requires the fullest attention of the accounting staff for a short time, and then subsides, either because the acquisition is judged to not be a good one or because the deal is completed and management takes over the activities of melding the organizations together. In either case, the CFO is

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ensconced in the front end of the process, rendering opinions on any possible corporate purchase that the chief executive officer (CEO) sees fit to investigate.

Because of the suddenness of an acquisition evaluation, the CFO must be fully prepared to switch from any current activities into full-bore analysis mode. To do so, this chapter includes the bulk of analyses to pursue in order to determine if the condition of an acquiree is as it purports to be. However, much more than a checklist is required. A CFO and his or her staff have other duties, and cannot let them lie in order to conduct an investigation. Accordingly, the capacity of the accounting department to complete a potentially massive analysis chore may not be possible if the department is still to operate in anything close to a normal and efficient manner. Accordingly, a CFO has three choices to make. First, if there are very few acquisition evaluations to make and the potential acquirees are small ones, then it may be possible to accept some degree of disruption in the accounting ranks and perform all the work with the existing staff. A second alternative is to form an acquisition analysis group that does nothing but evaluate potential candidates on a full-time basis. This is an excellent approach if a company is embarked on the path of growth by acquisition and is willing to buy as many corporations as possible. The third alternative is to hire an outside auditing firm to conduct the financial analysis on behalf of the company. This is a good alternative if the in-house staff does not have the time or training to conduct the work, and if there are not enough acquisitions to justify hiring a full-time team of analysts. However, using outside auditors can be an expensive proposition, so be careful to ensure that the audit staff used is of a high enough level of training and experience to conduct a thorough review. Thus, the number of potential acquisitions and the ability of the internal accounting staff to complete acquisition analysis work will dictate the method a CFO uses to obtain sufficient analysis assistance.

With the acquisition analysis team in place, a CFO can proceed through the remainder of this section to determine the precise sets of analysis questions to answer in order to ensure that the type of acquisition being contemplated is fully analyzed—without wasting time on any additional analysis work. The main analysis areas are as follows:

- *Personnel.* If a company has need of employees with great experience or skill, it can fill the need by buying a company that employs them. This is a rare circumstance when only a few people are involved, since it is easier to hire them away with employment offers. However, if a potential acquiree has one or more departments that are justly famous for their work, then buying the company might be worthwhile in order to obtain those specific departments. This situation arises most frequently with engineering or research firms. The main analysis needed here is to determine the current compensation levels of the people being acquired and how these pay levels compare to both internal and industry pay standards. Additional considerations include the presence of any long-term compensation agreements and their net present value.
- *Patents.* A target company might possess one or more valuable patents, especially ones that can be used to enhance the value of the acquiring company's products. This approach is most common with research and drug firms. In this case, the

primary analysis focuses on the cost of maintaining those patents, the number of years remaining before expiration, and (especially) the expected cash flows to be obtained from them before their expiration.

- *Brands.* A brand name is immensely valuable if it has been carefully maintained for many years, has been strongly supported with proper marketing, and represents excellent products. This is a good reason to acquire a target company, and is most common in the consumer goods field. The analysis for this type of acquisition focuses on the incremental profits to be gained by use of the brand name in relation to the cost of maintaining the brand.
- *Capacity.* If a company is faced with a long lead time or technological challenges to acquire greater production capacity, it might be worthwhile to purchase a production facility from another company. The analysis for this type of acquisition focuses on the age and usefulness of the machinery and facility purchased.
- *Assets and liabilities.* When an entire company is purchased, the acquiring organization is taking over virtually all assets, as well as all associated risks. In this instance, a comprehensive review of all balance sheet line items is mandatory.
- *Profitability.* A company may be bought because it has a greater percentage of profitability than the acquiring company, which increases the acquiring company's combined profitability. For this acquisition, a close review of the income statement and balance sheet is necessary.
- *Cash flow.* If a company has a large store of cash or continuing cash flows, it is a prime target for purchase by companies that need the cash, possibly to fund further acquisitions. For this type of acquisition, an intensive review of the balance sheet, income statement, and funds flow statement are necessary.

If a company is involved in a friendly acquisition, then the target company is generally willing to open its accounting books for inspection. The exception to the rule is that, if the target company is a direct competitor to the acquiring organization, then it will resist discussions of trade secrets or processes that will allow it to continue to effectively compete against the acquiring company in case the acquisition does not occur. Also, if an acquisition is of the unfriendly variety, then the opposing company will be quite active in denying access to any information whatever. This is an especially serious problem when a company is privately held, since very little information will be publicly available. In these situations where information is not readily obtainable, how can a CFO find a sufficient amount of information to conduct an analysis?

The first step is to dredge up all possible sources of information. One possibility is a recent financial statement from the target company's credit report (though it might not be remotely accurate since it is usually supplied by the target company, which may not be interested in publicly displaying its financial health). Other sources are articles in trade journals about the organization, as well as a simple review of the facility. By counting the number of cars in the parking lot, one can make a rough estimate, based on the industry average of sales per employee, of the amount of company sales. Sometimes it is possible to talk to former or current employees about the company, as well as its customers or suppliers. Another option is to talk to local recruiters about the positions for which they have been asked to recruit, which might indicate problems that have

resulted in employee turnover. Also, the credit report will list all assets against which lenders have filed security claims, which shows the degree to which the target company is using financial leverage to fund its operations. An investigative agency could also be hired to search for more information. Finally, reviewing public records about lawsuit filings will reveal if there is any outstanding litigation against the firm. Here is a list of additional outside information sources that might be of use in compiling a comprehensive set of data for a prospective acquisition:

- *Stock transfer agent.* This entity can verify the target company's outstanding capitalization.
- *Title search company.* These organizations, of which Dun & Bradstreet is the best known, will review all public records for the existence of liens on the assets of the target company. The list of liens should be compared to any outstanding debt schedules provided to the buyer to see if there are any discrepancies.
- *Patent/trademark search company.* This type of company reviews all legal filings to see if there are infringement lawsuits against the patents or trademarks of the target company, and can also obtain copies of the original patents or trademarks.
- *Appraisal companies.* An appraisal company can provide a list of the appraised value of a target company's assets, though it will not reveal this information without the prior approval of the target company.

If the target company is diligent in blocking attempts at obtaining information about it, and this results in a significant loss of information, the CFO will not be able to complete a full analysis of the situation. If so, it is very useful to make a list of what information has *not* been obtained, and what the risk may be of not obtaining it. For example, if there is no information available about a company's gross margin, then there is a risk of making too large an offer for a company that does not have the margins to support the price. Once all these risks are assembled into a list, determine the level of risk the company is willing to bear by not having the information or in deciding to invest the time and money to obtain the information. This will be an iterative process, as the number of questions posed by the CFO gradually decreases and the cost and time needed to find the answers to the remaining questions goes up. At some point, the CEO will decide that enough information is available to proceed with making an offer or that the work required is excessive and stop any further investigative efforts, proceeding instead to the investigation of other target companies for whom information is easier to obtain.

If the main reason for acquiring a target company is to hire away a specific person or group of people who are deemed to have valuable skills, a CFO has one of two analysis options to pursue. The first is that, if the company has chosen to purchase the entire target company, then a full-blown analysis of all assets, liabilities, controls, and legal issues must be conducted. The analysis for those categories is noted under the following sections of this chapter. However, if the company has persuaded the target company to accept payment in exchange for the transfer of some smaller portion of the company that includes the targeted employees, then the analysis work becomes much more specific.

An example of a partial purchase to obtain employees is when a target company decides to eliminate one of its lines of business and sells the related customer list and assets to the acquiring company. As part of the transaction, the target company lays off its employees that were associated with the line of business that is being transferred to the new company. The acquiring company obtains a list of these employees from the selling company and contacts them to offer them jobs. Because of the nature of this transaction, there is essentially nothing more than a transfer of assets, which greatly reduces the amount of analysis required of the CFO. Only the following analyses should be conducted that are specifically targeted at the employees to be hired, with an emphasis on their quality, cost, and turnover:

- *Investigate employee names listed on patents.* If individual employees are named on patents or patent applications filed by the target company, then it is a good bet that those employees are in a revenue-sharing agreement with the company employing them. If so, the CFO must research further to determine the amounts paid to the employees for use of the patents, such as a fee per unit sold or an annual payment. These patent payments must be added to the employee salaries to determine the true cost of bringing in the new personnel.
- *Interview customers and suppliers about employees.* If there are problems with the desired employees, the target company is almost certainly not going to reveal this information, since it is trying to obtain payment for ''selling'' them to the acquiring company. Accordingly, it may be necessary to call the target company's suppliers or customers to see if they have had dealings with the people under consideration and what their opinions may be.
- *Compare employee pay levels to industry and internal averages.* Obtain the pay rates for the entire department to be acquired, and determine the distribution of pay through the group to see if there are any inordinately highly paid people. Then compare these rates not only to the industry average but also to the acquiring company's average, to determine the difference between the pay levels about to be brought in and the existing rates. If there is a major difference between the two pay rates, then an additional cost of the acquisition may be to bring the pay levels of the in-house staff up to match those of the incoming personnel in order to avoid turmoil caused by the pay differential.
- *Determine the current turnover rate in the targeted department.* If there is a high turnover rate in the department being acquired, then the cost of acquisition may not be worthwhile if there is a high risk of losing the entire group.
- *Review long-term compensation agreements.* If a target company has obtained the services of a number of exceptional employees, it is quite possible that it has done so by offering them expensive, long-term employment contracts. The CFO should review them not only for the projected payment amounts, increases, and net present value, but also for golden parachute clauses that pay these employees exorbitant amounts if the target company is purchased.

The upshot of what a CFO is looking for when reviewing the acquisition of personnel is the actual cost of those employees and the potential impact on their counterparts. The

EXHIBIT 22.1 Analysis Report for Acquisition of Personnel

Description	Additional Information	Summary Costs
Total cost of incoming staff (15 staff)		$ 1,237,500
Average cost of incoming staff	$82,500	
Average cost of in-house staff	73,000	
Prior year employee turnover level	10%	
Additional cost to match in-house salaries to incoming salaries (13 staff)		123,500
Net present value of projected patent payments to employees		420,000
Cost of employment contract buyouts		250,000
Total cost of employee acquisition		**$2,031,000**
Total cost per employee acquired (15 staff)		**$ 135,400**
Industry average pay rate per person		$ 80,000
Percentage premium over market rate		**69%**

first item is purely financial in nature, while the second is a matter for conjecture regarding the impact of a group of higher-paid employees on the existing, in-house group that is paid less. The CFO can only provide the information regarding pay disparities to the CEO and human resources director and let them determine what to do to boost the morale of the existing staff when they learn about the higher wages being paid to the newly arriving personnel. Exhibit 22.1 is an example of the analysis report that the CFO should issue for an acquisition based on personnel.

Note that the cost of acquisition has been converted at the bottom of the example into a cost per employee, which is then compared to the average market rate. The premium to be paid over the market rate gives management its best idea of the true cost of the staff it is acquiring, and whether or not it is a good idea to proceed with the acquisition.

If a company wants to acquire a patent from another company, it does not usually go to the extreme of buying the whole company. Instead, it negotiates for the patent itself, which makes the analysis work substantially easier for the CFO. There are few measures to investigate, with an emphasis on the existing costs and revenues currently experienced by the holder of the patent. Management may require additional analysis to include the estimated additional revenues and costs that will subsequently be incurred by its use of the patent, which may vary from the use to which it has been put by the current patent owner. The primary analyses are as follows:

- *Determine annual patent renewal costs.* Annual patent costs are quite minimal, but should be included in any patent analysis, such as the one noted in Exhibit 22.2, in order to present a comprehensive set of cost information.
- *Determine current patent-related revenue stream.* This information is needed to determine the amount of money that the company is willing to pay for a patent; however, if the company wants to shift the focus of the patent to a different

EXHIBIT 22.2 Analysis Report for Patent Acquisition

Description	Additional Information	Summary Revenues and Costs
Years left prior to patent expiration	10 years	
Net present value of cash inflows		$1,200,000
Discounted cost of remaining filing costs		−42,000
Discounted cost of expected annual legal fees		−375,000
Net present value of patent		**$ 783,000**

application, then this number has less use. Without cooperation from the target company, this can be a very difficult number to determine, since the only alternative is to contact those companies that are licensed to use the patent and see if they will reveal the per-unit payment they are required to make to the target company for use of their patent. If the target company is willing to reveal this information, then also obtain it for the last few years to see if there is an upward or downward trend line for the revenues; if the trend is downward, then the revenue stream for which the company is paying is worth less.

- *Ascertain extent of current litigation to support patent.* A major issue for any patent holder is the amount of money it must spend to keep other entities from encroaching on the patent with parallel patents or just by issuing products that illegally use technology based on the patent. These legal costs can be enormous. If a company wants to take over a patent, it must be aware of the extent of encroachment and the cost of legally pursuing the encroachers.

An example of the analysis report that the CFO should issue for a patent purchase is shown in Exhibit 22.2. The bottom line of the patent acquisition analysis report is the net present value of all cash flows, which the CEO and CFO can use as the highest recommended amount to pay for the patent. However, given alternative uses for the patent that they are contemplating, they might anticipate a higher cash inflow that will allow them to pay a higher price for the patent.

The analyses needed to review a brand name are relatively simple from the financial perspective, though somewhat more involved from the legal side, since one must conduct research to ensure that there is a clear title to the trademark, as well as ascertain the extent of possible infringements on the brand name and the extent and recent history of litigation needed to support the brand. The primary analyses are as follows:

- *Determine the amount of annual trademark fees.* This is a very minor item, but can grow to considerable proportions if the trademark is being maintained worldwide, which requires filings and maintenance fees in a multitude of jurisdictions.
- *Determine clear title to the brand name.* This is not just a matter of paying for a small amount of research by a legal firm to determine the existence of any countervailing trademarks, but also requires a search in multiple jurisdictions if the buying company wants to expand the brand to other countries.

- *Ascertain the amount and trend of any current cash inflows from the brand name.* The two best analysis options are either to measure just that portion of sales that is specifically due to licensing agreements (and therefore easily traceable) or to measure the incremental difference in cash flows from all products under the brand name in comparison to those of the industry average or specific competitors.
- *Note the amount and trend of any legal fees needed to stop encroachment.* A quality brand frequently attracts a number of companies that build inexpensive knockoffs and illegally sell them for vastly reduced prices. Given the reduced quality and prices, the net impact of these fake goods is to cheapen the brand's image. Consequently, constant legal pursuit of these companies is the only way to keep imitating products off the market. The CFO should roughly estimate the cost of current lawsuits by either reviewing all current lawsuits that are public record or asking the target company. If the acquiring company wants to maintain the brand image, it must be willing to continue to use legal alternatives so the current legal cost can be used as a reasonable benchmark of future costs as well.
- *Note any challenges to use of the brand name.* Yet another legal issue is that there might be lawsuits pending that claim the trademark of another person or corporation supersedes the one about to be purchased. If so, a search of all open lawsuits should reveal this information. Once again, if the company contemplates worldwide usage of the brand name, then a much more extensive search for competing trademarks in other locations is necessary. If there are cases where someone else has filed for the right to use the brand name in another country, then the CFO should calculate the estimated cost of acquiring the rights to that name.

In Exhibit 22.3, we itemize the financial analysis associated with a brand-name acquisition that a CFO should expect to issue to management.

When a company purchases a specific manufacturing facility from another company, it is usually doing so to increase its capacity. With this end in mind, the key analyses revolve around the condition and cost of the facility so that one can determine the amount of replacement machinery to install as well as the actual production capacity percentage, the cost per percent of capacity, and the facility's overhead cost. For many of the analyses,

EXHIBIT 22.3 Analysis Report for Brand Acquisition

Description	Additional Information	Summary Revenues and Costs
Net present value of current cash inflows		$ 500,000
Discounted cost of annual trademark fees		−65,000
Cost of trademark search (for clear title)		−175,000
Discounted cost of annual legal fees		−780,000
Cost to purchase competing brand names	See note	−2,250,000
Total net cost of brand name		**−$ 2,770,000**

Note: A competing trademark has already been filed by company XYZ in all countries of the European community and Japan. The cost required to purchase this trademark is included in the analysis.

EXHIBIT 22.4 Analysis Report for Capacity Acquisition

	Costs at Minimum Capacity Usage	Costs at Normal Capacity Usage	Costs at Maximum Capacity Usage
Facility overhead cost	$ 1,000,000	$ 3,500,000	$ 5,000,000
Capital replacement cost*	0	0	400,000
Equipment maintenance cost	0	450,000	600,000
Cost of environmental damage insurance	50,000	50,000	50,000
Cost to investigate possible environmental damage	100,000	100,000	100,000
Facility modification costs	0	0	700,000
Total costs	**$1,150,000**	**$4,100,000**	**$6,850,000**
Percent capacity level	0%	50%	85%
Cost per percent of capacity	**N/A**	**$ 82,000**	**$ 81,000**

*Represents the depreciation on capital replacement items.

the information the CFO assembles must be for three activity levels—minimum, normal, and maximum capacity levels. The reason for the threefold format (as also shown in Exhibit 22.4) is that management might not use the facility as much as it anticipates, in which case it must be aware of the minimum costs that will still be incurred, as well as the extra costs that must be covered if the facility runs at the highest possible rate of production. The primary analyses are as follows:

- *Determine the facility overhead cost required for minimum, standard, and maximum capacity.* Any facility requires a minimum cost to maintain, even if it is not running. Such costs include taxes, security, insurance, and building maintenance. Management must know this minimum cost level in case it does not use the facility, but must still pay for the upkeep. Also, current accounting records will reveal the overhead needed to run the facility at a normal level, while the industrial engineering or production personnel can estimate the additional costs needed to run the plant at full capacity.
- *Ascertain the amount of capital replacements needed.* Some machinery will be so worn out or outdated that it must be replaced. This information is beyond the knowledge of a CFO, but not of an industrial engineer or production manager, who can walk through the facility and determine the condition of the equipment. If this is not readily apparent, then perusing the maintenance records will reveal which machines require so much continuing work that a complete replacement is a more efficient alternative.
- *Find out the periodic maintenance cost of existing equipment.* Even if equipment does not require replacement, it must still be maintained, which can be a considerable cost. This information should be obtained for the normal run rate and estimated for the maximum capacity level.

- *Determine the maximum production capacity.* The industrial engineering staff must estimate the maximum capacity level at which the facility can run, subject to expenditures for equipment replacements and facility modifications.
- *Investigate any environmental liabilities.* Sometimes the target company is more than willing to get rid of a facility if it suspects there is environmental damage that must be fixed. This can be an extraordinarily expensive item, and can sometimes exceed the cost of the entire facility. To guard against this problem, a CFO should determine the cost of conducting an environment investigation, as well as the cost of insurance to provide coverage in case such damage is discovered after the purchase date.
- *Determine the cost of modifications needed to increase the capacity of the facility.* Unless a facility has been very carefully laid out in the beginning for the highest possible maximization of throughput, it is likely that it can use a significant overhaul of its layout. To do this, the industrial engineering staff must review the current situation and recommend the shifting of equipment and installation of additional materials movement capabilities.

The preceding analyses are summarized in the sample capacity analysis report shown in Exhibit 22.4, which includes low-medium-high categories for costs that are based on projected capacity utilization levels. At the bottom of the example, all costs are converted into a dollar amount for each percent of capacity used. Note that there is no utilization listed for the minimum level, since the facility is shuttered under this assumption.

A company will sometimes acquire just the assets of another organization. This is most common when there is some risk associated with the liabilities of the target company, such as lawsuits or environmental problems, or an excessive amount of debt. When assets are purchased, the buyer can be quite selective in buying only those assets that are of the most value, such as patents, brands, or personnel, which have been covered in previous sections. At this point, we note only the following additional analyses needed to ensure that all other assets are properly reviewed prior to an acquisition:

- *Conduct a fixed asset audit.* Before paying for an asset, make sure that the asset is there. The fixed asset records of some companies are in such poor condition that there are assets still on the books that were disposed of years before. An appraiser or an internal audit team can conduct this review.
- *Appraise the value of fixed assets.* Even if an asset exists, it might have far less value than the amount listed in the fixed asset database. To be sure of the current value of all assets, have an appraiser review them and determine their value. The final appraisal report should contain two values for each asset—the rush liquidation value and a higher value based on a more careful liquidation approach. These two values can be the focus of a great deal of negotiating between the buyer and the target company, since the buyer will want to pay based on the rush liquidation value, and the target company will prefer to sell at the price indicated by the slower liquidation approach.
- *Ascertain the existence of liens against assets.* A company should not purchase an asset if there is a lien against it. This usually occurs when the target company has used the asset as collateral for loans or used leases to finance the purchase of specific

assets. The standard procedure in an acquisition is to have lenders remove liens before the completion of an acquisition, which frequently requires paying off those lenders with a new "bridge" loan that covers the period of a few weeks or days between the removal of liens and the transfer of payment from the buyer to the target company, which is then used to pay off the bridge loan.

- *Determine the collectibility of accounts receivable.* If the purchase includes all current accounts receivable, then trace the largest invoices back to specific shipments and confirm them with the customers to whom the invoices were sent. Also, be sure to trace the history of bad debt write-offs to determine an appropriate average amount that will reflect the amount of the current accounts receivable that will become bad debt.
- *Verify the bank reconciliation for all bank accounts.* For any checking or investment account, verify the amount of cash at the bank and reconcile it to the amount listed in the corporate accounting records. Also, investigate any reconciling items to ensure that they are appropriate.
- *Audit the existence and valuation of remaining assets.* There are usually a number of smaller-dollar assets on the books, such as the payoff value of life insurance, deposits on rentals and leases, and loans to employees or officers. All of these items must be audited, both through investigation of the original contracts on which they are based and through confirmations from those entities who owe the target company money.
- *Determine the value of any tax loss carryforward.* If the buyer is acquiring a tax loss carryforward from the target company, it can use this to reduce its own tax burden. Use either the corporate tax staff or outside auditors to review not only the validity of the target company's tax returns to ensure that the reported loss on which the carryforward is based is valid, but also the (ever changing) tax laws to ensure that the company is qualified to use the loss carryforward (which, under current laws, can only be recognized over a very long time period).

A sample of an analysis report for assets is noted in Exhibit 22.5.

EXHIBIT 22.5 Analysis Report for Assets

	Additional Information	Valuation Summary
Appraised value of assets (rapid liquidation)		$ 16,000,000
Appraised value of assets (slow liquidation)	$18,500,000	
Book value of assets	19,000,000	
Book value of assets with outstanding liens	19,000,000	
Book value of accounts receivable		5,500,000
Recommended bad debt reserve		−150,000
Value of cash and investments		750,000
Net present value of remaining assets	Discount rate is 13%	629,500
Net present value of tax loss carryforwards	Discount rate is 13%	2,575,000
Total asset valuation		**$25,304,500**

In Exhibit 22.5, only the appraised rapid liquidation value of the assets to be purchased is listed in the ''Valuation Summary'' column, whereas two other forms of asset valuation are noted in the ''Additional Information'' column. The reason for this treatment of asset values is that the CFO is presenting to management the lowest possible asset value, which it will use to determine its lowest offering price for the purchase of the target company's assets. The other higher asset values are included as notations, in case management wants to bid a higher dollar amount and needs to determine its upper boundaries for a reasonable offer price (see the next section, ''Valuing an Acquisition Target''). In addition, the value of remaining assets and the tax loss carryforward are both listed at their net present values. The reason for using discounting for these two items is that they may not be readily liquidated in the short term. For example, other assets may include loans to employees or officers that will take several years to collect, while only a portion of a tax loss carryforward can usually be used in each year. Accordingly, the discount rate for the net present value calculation for each of these line items is noted in the ''Additional Information'' column in the example. Also, the bad debt deduction from the accounts receivable is not the one used by the target company, but rather the one compiled by the CFO's staff, following its review of the history of bad debt write-offs and the risk of bad debt occurrences for the current group of accounts receivable.

If a company decides to purchase a target company as a complete entity, rather than buying pieces of it, then the liabilities side of the balance sheet will also be part of the purchase, and will require analysis by the CFO. The main liability analyses are as follows:

- *Reconcile unpaid debt to lender balances.* There may be a difference between the amount recorded on the company's books as being the debt liability and the lender's version of the amount still payable. If there is some doubt regarding whose version is correct, always use the amount noted by the lender, since this entity will not release its lien on company assets until it believes itself to be fully paid.
- *Look for unrecorded debt.* A target company may have incorrectly reported a capital lease as an operating lease, or is recording some other form of debt payment as an expense without recording the underlying debt liability. Review the target company's stream of payments to see if there are any continuing payments—most likely in the same amount from period to period—that indicate the presence of a debt paydown.
- *Audit accounts payable.* Verify that all accounts payable listed on the target company's books are actual expenses and not duplications of earlier payments. Also, investigate the unvouchered accounts payable to see if these are all approved and binding expenses, and if there are additional receipts for which there are no existing accounts payable listed in the accounting records.
- *Audit accrued liabilities.* A target company that wants to obtain the highest possible selling price will downplay these expenses, so one must be careful to verify the existence of all possible accrued expenses and then recalculate how the accruals were derived to ensure that the underlying expenses that these accruals will eventually offset are accurate. The following accruals are among the more common ones:
  - Income taxes
  - Payroll taxes

- Personal property taxes
- Warranty costs
- Product recalls

All of these analyses are summarized into the sample analysis report for liabilities, which is described in Exhibit 22.6. Of particular interest are the line items for reconciliation problems, such as extra debt and accounts payable, as well as corrections to the accrued expenses. All of these adjustments are used to negotiate a lower price for the target company, since the higher liabilities reduce its net value.

There are several methods a CFO should use when reviewing the profitability of a target company. One is to track the trends in several key variables, since these will indicate worsening profit situations. Also, it is important to segment costs and profits by customer, to see if certain customers soak up an inordinate proportion of the expenses. Further, it might be possible to determine the headcount associated with each major transaction, to determine the possibility of reducing expenses by imposing transaction-related efficiencies that have worked for the acquiring company. The intent of these analyses is to quickly determine the current state and trend of a target company's profits, as well as to pinpoint those customers and costs that are associated with the majority of profits and losses. The main analyses are as follows:

- *Review a trend line of revenues.* If there has been a decline in the rate of growth or an overall decline in revenues, then review the company's percentage of the total market to see if the cause might be a shrinkage in the overall market. If not, then

EXHIBIT 22.6 Analysis Report for Liabilities

Description	Additional Information	Summary Revenues and Costs
Book balance of debt		$3,750,000
Add: Additional lender balance due	See Note 1	15,000
Add: Unrecorded capital leases	See Note 2	175,000
Book balance of accounts payable		2,200,000
Add: Unrecorded accounts payable	See Note 3	28,000
Subtract: Duplicate accounts payable	See Note 4	−2,000
Book balance of accrued liabilities		450,000
Add: Additional accrual for property taxes	See Note 5	80,000
Add: Accrual for workers' compensation insurance	See Note 6	15,000
Total liabilities valuation		**$6,711,000**

Note 1: Company recorded $15,000 in late interest payments as a debt reduction.
Note 2: Capital leases for six forklifts recorded as expenses.
Note 3: No supplier invoice recorded for maintenance supplies received on last day of the month.
Note 4: Supplier invoices for in-house construction work recorded under both vouchered and unvouchered accounts payable.
Note 5: Original accrual did not reflect an increase of 2.3% in the tax rate.
Note 6: Original accrual based on a payroll level that is 15% lower than the actual payroll amount.

review sales by product and customer to determine the exact cause of the problem.

- *Review a trend line of bad debt expense.* As a market matures and additional sales are harder to come by, a company's management might loosen its credit terms, allowing it to increase sales at the cost of a higher level of bad debt, which might exceed the additional gross margin earned from the incremental sales that were added. To see if a target company has resorted to this approach to increasing sales, review the trend line of bad debt expense to see if there has been a significant increase. Also, review the current accounts receivable for old invoices that have not yet been written off as bad debt, and also see if there are sales credits that are actually bad debts. The sum of these items constitutes the true bad debt expense.
- *Review a trend line of sales discounts.* As a follow-up to the last item, management may offer discounts to customers in advance for additional sales, or add customers who are in the habit of taking discounts, whether approved or not. These issues are most common when a company's sales are no longer trending upward and management is looking for a new approach to spur sales, even at the cost of reduced margins due to the discounts. These discounts may be stored in a separate account for sales discounts, or mixed in with sales credits of other kinds.
- *Review a trend line of material costs.* For most organizations outside of the service sector, this is the largest cost, and so requires a reasonable degree of attention. The CFO cannot hope to delve into all possible aspects of material costs during a due diligence review, such as variances for scrap, purchase prices, or cycle counting adjustments. However, it is easy to run a trend line of material costs for the last few years, just to see if these costs are changing as a proportion of sales. Due to the large overall cost of materials, a small increase in costs here can relate to the entire cost of a department in other areas of the company, so a change of as little as 1 percent in this expense category is a cause for concern.
- *Review a trend line of direct labor costs.* Review the trend line of direct labor costs in much the same manner as for material costs. Though this is usually a much smaller cost than for materials, it is still sufficiently large to be a cause for concern if there is a significant trend line of increasing expenses.
- *Review a trend line of gross margins.* This measure is worthy of comparison to industry averages or to the gross margins of specific competitors so the acquiring company can gain some idea of the production efficiencies of the company it is attempting to purchase.
- *Review a trend line of net margins.* If the gross margin looks reasonable, then proceed to a trend-line analysis of net margins. If there is a declining trend here that was not apparent in the preceding gross margin analysis, then focus on the sales, general, and administrative expense areas to see where the cost increase has occurred.
- *Ascertain the gross profit by product.* Review the gross profit for each product at the direct cost level to determine which ones have excessively low profit levels and are targets for either withdrawal from the market or a price increase. If possible, also determine the cost of fixed assets that are associated with each product (i.e., product-specific production equipment), so that the buyer can budget for an asset reduction alongside any product terminations.

- *Review a trend line of overhead personnel per major customer.* Determine the overhead needed to support a profitable base of customers with a ratio of overhead personnel to the number of major customers. This review can extend much more deeply to determine which customers require inordinate amounts of time by the support staff, though this information is rarely available.
- *Review a trend line of overhead personnel per transaction.* Determine the number of personnel involved in all major transactions, such as accounts payable, accounts receivable, receiving, and purchasing, and divide this number into the annual total of all these transactions. If there appears to be an excessive number of employees per transaction, then the acquirer may be able to reduce personnel costs in these areas.

As part of a due diligence analysis, these measures and trend lines will tell a CFO where to focus the bulk of the analysis team's attention in determining the extent of problem areas and their impact on profitability. In the example analysis report shown in Exhibit 22.7, a qualitative review of each analysis area is noted, since this review is intended to find further problems, not to devise a valuation for the target company.

EXHIBIT 22.7 Analysis Report for Profitability

Type of Analysis Conducted	Notes
Review a trend line of revenues.	Percentage rate of growth has declined in last two years.
Review a trend line of bad debt expense.	Bad debt expense has increased, due to relaxation of credit standards.
Review a trend line of sales discounts.	80% of the newest customers have all been given sales discounts of 10 to 15%.
Review a trend line of material costs.	No significant change.
Review a trend line of direct labor costs.	No significant change.
Review a trend line of gross margins.	The gross margin has dropped 13% in the last two years, entirely due to increased bad debts and sales discounts.
Review a trend line of net margins.	Slightly worse reduction than indicated by the gross margin trend-line analysis.
Ascertain the gross profit by product.	All products experienced a reduction in gross profit in the last two years.
Ascertain the gross profit by customer.	Sales to older customers have retained their gross margin levels, but newer customers have substantially lower margins.
Review a trend line of overhead personnel per major customer.	There has been a slight increase in the collections staffing level in the last two years, due to the difficulty of collecting from newer customers.
Review a trend line of overhead personnel per transaction.	No significant change.

Conclusion and recommendations: The target company has experienced flattening sales, and so has shifted new sales efforts to low-end customers who cannot pay on time and will accept only lower-priced products, which also increases the overhead needed to service these accounts. Recommend dropping all low-margin, low-credit customers, as well as all associated overhead costs to increase profits.

The analysis of a target company's cash flows is a critical item if the entire organization is to be purchased. If a CFO were to miss this item, the buying company could find itself paying for an organization that must be supported with a massive additional infusion of cash. The key cash flow analyses to focus on are as follows:

- *Review trend line of net cash flow before debt and interest payments.* Begin with the cash flows shown on the statement of cash flows. Then ignore the impact of debt and interest payments, since inordinately high cash flows to pay for these two items may mask a perfectly good underlying business. If there is a pronounced additional requirement for more cash to fund either the acquisition of fixed assets or working capital, then identify the culprit and proceed with the following cash flow analyses. This first trend line, then, was to determine the existence of a problem and to more precisely define it.
- *Review trend line of working capital.* Poor customer credit review policies or inadequate collection efforts will lead to an increased investment in accounts receivable, while excessive production or product obsolescence will increase the inventory investment. Also, a reduction in the days of credit before payments are made to suppliers will reduce the free credit that a company receives from them. To see if there is a problem in this area, add the total accounts receivable to inventory and subtract the accounts payable balance to arrive at the total working capital amount. Then plot this information on a trend line that extends back for at least a year. If there is a steady increase in total working capital, determine which of the three components have caused the problem.
- *Segment working capital investment by customer and product.* Focus on the accounts receivable and finished goods inventory investments to see if there is a specific customer who is responsible for a working capital increase or review just the inventory investment to see if a specific product is the cause. Cross-reference this information against analyses for profitability by customer and product to see if there are any combinations of low-profit, high-investment customers or products that are obvious targets for termination.
- *Review trend line of capital purchases.* This is a simple matter to investigate by general fixed asset category, since this information is reported on the balance sheet. However, there might be good reasons for large increases in fixed asset investments, such as automation, the addition of new facilities, or a general level of competitiveness in the industry that requires constant capital improvements. Only by being certain of the underlying reasons for cash usage in this area can one suggest that cash can be saved here by reducing the volume of asset purchases. The report that a CFO issues as part of the cash-flow analysis is primarily composed of judgments regarding the need for historical cash flows, estimates of future cash flows, and how the acquiring company can alter these flows through specific management actions. A sample of such a report is shown in Exhibit 22.8.

Besides purely financial issues, there are a wide array of legal issues that one's legal staff must peruse. In most cases, the analysis issues noted here are related to various kinds of contracts. When these arise, a key analysis point is to see if they can be dissolved

EXHIBIT 22.8 Analysis Report for Cash Flow

Type of Analysis Conducted	Notes
Review trend line of net cash flow before debt and interest payments.	The target company is experiencing a massive cash outflow in both the working capital and fixed assets areas.
Review trend line of working capital.	There is a severe cash outflow, due to $2,000,000 in accounts receivable invested in the Gidget Company, as well as a large investment in five distribution warehouses for its Auto-Klean product, each of which requires $1,500,000 in inventory.
Segment working capital investment by customer and product.	The main cash outflows are due to the Gidget Company customer and the Auto-Klean product.
Review trend line of capital purchases.	Has purchased $10,000,000 of automation equipment to improve margins on its sales to the Gidget Company.

Conclusions and recommendations: There is a major investment in sales to the Gidget Company, which is not justified by the 5% return on sales to that customer. The receivable investment of $2,000,000 can be eliminated by stopping sales to this customer, while $5,000,000 can be realized from the sale of automation equipment used for the production of items for sale to it. Also, the number of distribution warehouses for the Auto-Klean product can be reduced by two, which will decrease the inventory investment by $3,000,000. The amount of cash investment that can be eliminated as a result of these actions is $10,000,000.

in the event of a corporate change of control. Many contracts contain this feature, so that onerous agreements will not cause a potentially high-priced purchase to fall apart. Key legal reviews are:

- *Bylaws.* This document will include any ''poison pill'' provisions that are intended to make a change of control very expensive.
- *Certificate of incorporation, including name changes.* This is used to find the list of all names under which the target company operates, which is needed for real estate title searches.
- *Employment contracts.* Sometimes key employees are guaranteed high pay levels for a number of years, or a ''golden parachute'' clause that guarantees them a large payment if the company is sold.
- *Engineering reports.* These documents will note any structural weaknesses in corporate buildings that potentially require expensive repairs.
- *Environmental exposure.* Review all literature received from the Environmental Protection Agency, as well as the Occupational Safety and Health Administration, and conduct environmental hazard testing around all company premises to ascertain the extent of potential environmental litigation.
- *Insurance policies.* Verify that the existing insurance policies cover all significant risks that are not otherwise covered by internal safety policies. Also, compare these policies to those held by the buyer to see if there can be savings by consolidating the policies for both companies.

- *Labor union agreements.* If the target company is a union shop, the union contract may contain unfavorable provisions related to work rules, guaranteed pay increases, payouts or guaranteed retraining funds in the event of a plant closure, or onerous benefit payments.
- *Leases.* Creating a schedule of all current leases tells a buyer the extent of commitments to pay for leased assets, as well as interest rates and any fees for early lease terminations.
- *Licenses.* A license for a target company to do business, usually granted by a local government, but also by another company for whom it is the distributor or franchisee, may not be transferable if there is a change of ownership. This can be quite a surprise to a buyer that now finds it cannot use the company it has just bought.
- *Litigation.* This is a broad area that requires a considerable amount of review before legal counsel can be reasonably satisfied as to the extent and potential liability associated with current and potential litigation. This review should encompass an investigation of all civil suits and criminal actions that may include contract disputes, fraud, discrimination, breach of employment contract, wrongful termination, inadequate disclosure issues, deceptive trade practices, antitrust suits, or other issues. It should also include tax claims and notices of potential litigation received from any of the following government agencies:
  - Department of Justice
  - Department of Labor
  - Equal Employment Opportunity Commission
  - Federal Trade Commission
  - Internal Revenue Service
  - Securities and Exchange Commission (applies only to a publicly held entity)
- *Marketing materials.* The target company's advertising of its product capabilities can be a source of potential litigation if the publicized product claims are overstated.
- *Pension plans.* Determine the size of the employer-funded portion of the pension plan. This will require the services of an actuary to verify the current cost of required future funding.
- *Product warranty agreements.* Review the published warranty that is issued alongside each product to verify its term as well as what specific features it will replace in the event of product failure.
- *Sponsorship agreements.* A target company might have a long-term commitment to sponsor an event that will require a significant expenditure to maintain or terminate.
- *Supplier or customer contracts.* A target company might be locked into a long-term agreement with one or more of its suppliers or customers, possibly guaranteeing unfavorable terms that will noticeably impact profits if the buyer purchases the company.

Though these nonfinancial issues are primarily related to the legal liabilities of a corporate entity, there are a few cases in which the CFO is called on to provide an estimate of possible attendant costs. For example, the CFO is sometimes asked to quantify

EXHIBIT 22.9 Analysis Report for Contractual and Legal Issues

Description	Additional Information	Summary of Costs
Poison pill payout provision	Bylaws section 2, clause 14	$ 12,500,000
Golden parachute provision	For all officers	3,250,000
Discounted cost of all lease provisions	Copiers, forklifts	320,000
Discounted pension plan funding requirements		4,750,000
Discounted cost of sponsorship agreement		220,000
Termination payment for long-term supplier contracts		540,000
Total cost of contractual and legal issues		**$21,580,000**

the extra cost required to fulfill any poison pill provisions. You can also determine the net present value of all employment, labor union, and lease provisions that require a specified minimum set of payments for a designated time period. An example of the format used to summarize these expenses is shown in Exhibit 22.9.

COMPLEXITY ANALYSIS

The primary objective of complexity analysis is to determine if it will be too difficult to integrate an acquiree, with a secondary objective of determining the level of risk posed by the acquiree's general level of complexity.

One area to consider is the sources of the acquiree's revenue. The level of complexity and risk is increased when revenue is derived from multiple businesses, since the acquirer must devote additional levels of management resources to each of those businesses. Complexity and risk also increase when a significant percentage of revenue is derived from a small number of large transactions that are custom-tailored to individual customers. These transactions tend to be highly volatile in their amount and frequency, making it difficult to estimate future revenue levels and attendant cash flows.

The tax rate can also contribute to complexity and risk. This is especially true if the acquiree has located its headquarters in a tax haven, since this indicates a strong interest in tax avoidance that has likely led to the use of a variety of complicated tax avoidance schemes. A further indicator of tax complexity is a substantial difference between the reported level of book and tax income. Finally, a volatile effective tax rate indicates that the acquiree is engaged in a variety of one-time tax dodges. Although all of these issues may be caused by completely legal transactions, it clearly indicates that the company has altered its operations in a variety of ways to take maximum advantage of the tax laws, and this will require considerable ongoing effort to maintain.

Another indicator of complexity is the presence of off-balance-sheet assets and liabilities, such as variable-interest entities, research and development partnerships, and operating leases. Although the intent of these transactions may have little to do with dressing up the balance sheet and may be based on solid operational reasons, they are

still more likely to cause sudden changes in the reported condition of the company if underlying accounting rules are altered to require their full presentation.

Finally, a key area that many acquiring companies completely neglect is the consideration of cultural differences. Though difficult issues to quantitatively analyze, they can be the primary issue that results in a failed merger, and so are worth considerable review time. Some of the key factors to consider are as follows:

- What is the company's intent in forcing the acquired company to use its business practices?
- What are the key differences in the decision-making processes of the companies?
- What are the differences in the performance monitoring and bonus payment systems of the companies?
- How do the companies resolve conflicts?
- What types of formal and informal communication systems are used by the companies?
- What is the command structure of the companies?

If there are significant differences between the companies in more than one of these areas, then the success of the merger will be at risk. If so, the management team should consider in detail what changes will be needed in order to make the two company cultures work together, or scrap the merger entirely.

EVALUATE ACQUISITION TARGETS WITH ALLIANCES

Acquiring any company can be a significant risk, no matter how detailed the level of due diligence used. The problem is the difficulty of determining how the acquiree's employees handle themselves with customers, how they develop products, their level of ethics, and many other intangible issues that are critical to the success of an acquisition, but which are nearly impossible to measure. In addition, a company may pay for an acquisition based on the acquiree's technology, only to find that the market shifts in a different direction, rendering its investment worthless.

The solution in some cases is to first enter into a business alliance with a potential acquiree. By entering into a number of alliances, a company can essentially keep tabs on several potential acquisitions while a new market develops, and then make offers to selected alliance partners depending on the direction in which the market eventually turns. This is less of an advantage in industries where there is little technological innovation, in which case the acquirer can skip the alliance approach and proceed directly to an acquisition.

In addition, if a company makes a substantial investment in the potential acquiree as part of the alliance agreement, then it might obtain a board seat. By doing so, it has full access to the acquiree's financial information, and will have ready access to any financial or operational issues to which the acquiree is being subjected.

The most important point in favor of the alliance approach is that the two companies have a chance over an extended period of time to examine any potential

pitfalls that would interfere with an eventual acquisition, including issues with employees and a variety of communications-related topics. This approach also allows the acquiree's employees to get to know their counterparts in the acquiring firm, which may reduce the amount of employee turnover that sometimes accompanies an acquisition.

The downside of the alliance approach is that a potential acquiree may gain some prestige through the alliance, which can raise the price of the eventual acquisition. Also, taking the additional time to work through an alliance arrangement gives the potential acquiree time to be purchased by a competitor or at least set up a bidding war, though this danger can be eliminated by including a right of first refusal in the alliance agreement.

VALUING AN ACQUISITION TARGET

Once a buyer has identified a prospective target, it needs to establish an initial valuation for it. In this section, we describe a variety of valuation methods, the concept of the control premium, the discounted cash flow model, a variety of qualitative factors that can influence the valuation, and reasons for using different forms of payment.

ALTERNATIVE VALUATION METHODS

There are a number of ways to value a target company. Although the most common is discounted cash flow, it is best to evaluate a number of alternative methods and compare their results to see if several approaches arrive at approximately the same general valuation. This gives the buyer solid grounds for making its offer.

Using a variety of methods is especially important for valuing newer target companies with minimal historical results, and especially for those growing quickly—all of their cash is being used for growth, so cash flow is an inadequate basis for valuation.

If the target company is publicly held, then the buyer can simply base its valuation on the *current market price per share*, multiplied by the number of shares outstanding. The current trading price of a company's stock is not a good valuation tool if the stock is thinly traded. In this case, a small number of trades can alter the market price to a substantial extent, so that the buyer's estimate is far off from the value it would normally assign to the target. Most target companies do not issue publicly traded stock, so other methods must be used to derive their valuation.

When a private company wants to be valued using a market price, it can adopt the unusual ploy of filing for an initial public offering while also being courted by the buyer. By doing so, the buyer is forced to make an offer that is near the market valuation at which the target expects its stock to be traded. If the buyer declines to bid that high, then the target still has the option of going public and realizing value by selling shares to the general public. However, given the expensive control measures mandated by the Sarbanes-Oxley Act and the stock lockup periods required for many new public

EXHIBIT 22.10 Comparable Valuations Table

	($ Millions)					
Comparable Valuations Table	**Market Capitalization**	**Revenue**	**EBITDA***	**EBITDA* Percentage**	**Revenue Multiple**	**EBITDA* Multiple**
Large Caps (>$5 billion)						
General Dynamics	$ 36,220	$ 27,240	$ 3,113	11%	1.3	11.6
Lockheed Martin	43,020	$ 41,862	$ 4,527	11%	1.0	9.5
Northrop Grumman	25,350	$ 32,018	$ 3,006	9%	0.8	8.4
Medium Caps (<$5 billion)						
ManTech International	$ 1,630	$ 1,448	$ 114	8%	1.1	14.3
Perot Systems	1,850	2,612	184	7%	0.7	10.1
SAIC, Inc.	3,640	8,935	666	7%	0.4	5.5
SRA International	1,540	1,269	93	7%	1.2	16.6
Small Caps (<$1.5 billion)						
CACI, Inc.	$ 1,470	$ 1,938	$ 146	8%	0.8	10.1
ICF International	258	$ 727	$ 71	10%	0.4	3.6
SI International	299	$ 511	$ 39	8%	0.6	7.7
Stanley, Inc.	570	$ 409	$ 25	6%	1.4	22.8
Micro Caps (<$250 million)						
Dynamics Research Corp.	$ 92	$ 230	$ 13	6%	0.4	7.1
Keynote Systems	210	68	(5)	−7%	3.1	(42.0)
NCI, Inc.	249	304	22	7%	0.8	11.3
Tier Technologies	152	111	(22)	−20%	1.4	(6.9)
Averages by Capitalization						
Large caps	$ 34,863	$ 33,707	$ 3,549	11%	1.0	9.8
Medium caps	2,165	3,566	264	7%	0.6	8.2
Small caps	649	896	70	8%	0.7	9.2
Micro caps	176	178	2	1%	1.0	87.9

*EBITDA = Earnings before interest, taxes, depreciation, and amortization.

companies, a target's shareholders are usually more than willing to accept a buyout offer if the price is reasonably close to the target's expected market value.

Another option is to use a *revenue multiple* or *EBITDA multiple*. It is quite easy to look up the market capitalizations and financial information for thousands of publicly held companies. The buyer then converts this information into a multiples table, such as the one shown in Exhibit 22.10, which itemizes a selection of valuations within the consulting industry. The table should be restricted to comparable companies in the same industry as that of the seller, and of roughly the same market capitalization. If some of the information for other companies is unusually high or low, then eliminate these outlying values in order to obtain a median value for the company's size range. Also, it is

better to use a multiday average of market prices, since these figures are subject to significant daily fluctuation.

The buyer can then use this table to derive an approximation of the price to be paid for a target company. For example, if a target has sales of $100 million, and the market capitalization for several public companies in the same revenue range is 1.4 times revenue, then the buyer could value the target at $140 million. This method is most useful for a turnaround situation or a fast growth company, where there are few profits (if any). However, the revenue multiple method only pays attention to the first line of the income statement and completely ignores profitability. To avoid the risk of paying too much based on a revenue multiple, it is also possible to compile an EBITDA (i.e., earnings before interest, taxes, depreciation, and amortization) multiple for the same group of comparable public companies, and use that information to value the target.

Better yet, use both the revenue multiple and the EBITDA multiple in concert. If the revenue multiple reveals a high valuation and the EBITDA multiple a low one, then it is entirely possible that the target is essentially buying revenues with low-margin products or services, or extending credit to financially weak customers. Conversely, if the revenue multiple yields a lower valuation than the EBITDA multiple, this is more indicative of a late-stage company that is essentially a cash cow, or one where management is cutting costs to increase profits, but possibly at the expense of harming revenue growth.

The revenue and EBITDA multiples just noted are not the only ones available. The table can be expanded to include the *price/earnings ratio* for a public company's traded stock. Also, if the comparable company provides one-year projections, then the revenue multiple can be renamed a *trailing multiple* (for historical 12-month revenue), and the forecast can be used as the basis for a *forward multiple* (for projected 12-month revenue). The forward multiple gives a better estimate of value, because it incorporates expectations about the future. The forward multiple should only be used if the forecast comes from guidance that is issued by a public company. The company knows that its stock price will drop if it does not achieve its forecast, so the forecast is unlikely to be aggressive.

Revenue multiples are the best technique for valuing high-growth companies, since these entities are usually pouring resources into their growth, and have minimal profits to report. Such companies clearly have a great deal of value, but it is not revealed through their profitability numbers.

However, multiples can be misleading. When acquisitions occur within an industry, the best financial performers with the fewest underlying problems are the choicest acquisition targets, and therefore will be acquired first. When other companies in the same area later put themselves up for sale, they will use the earlier multiples to justify similarly high prices. However, because they may have lower market shares, higher cost structures, older products, and so on, the multiples may not be valid. Thus, it is useful to know some of the underlying characteristics of the companies that were previously sold, to see if the comparable multiple should be applied to the current target company.

Another possibility is to replace the market capitalization figure in the table with *enterprise value*. The enterprise value is a company's market capitalization, plus its total debt outstanding, minus any cash on hand. In essence, it is a company's theoretical

takeover price, because the buyer would have to buy all of the stock and pay off existing debt, while pocketing any remaining cash.

Another way to value an acquisition is to use a *database of comparable transactions* to determine what was paid for other recent acquisitions. Investment bankers have access to this information through a variety of private databases, while a great deal of information can be collected online through public filings or press releases.

The buyer can also derive a valuation based on a target's *underlying real estate values*. This method only works in those isolated cases where the target has a substantial real estate portfolio. For example, in the retailing industry, where some chains own the property on which their stores are situated, the value of the real estate is greater than the cash flow generated by the stores themselves. In cases where the business is financially troubled, it is entirely possible that the purchase price is based entirely on the underlying real estate, with the operations of the business itself being valued at essentially zero. The buyer then uses the value of the real estate as the primary reason for completing the deal. In some situations, the prospective buyer has no real estate experience, and so is more likely to heavily discount the potential value of any real estate when making an offer. If the seller wishes to increase its price, it could consider selling the real estate before the sale transaction. By doing so, it converts a *potential* real estate sale price (which might otherwise be discounted by the buyer) into an achieved sale with cash in the bank, and could also record a one-time gain on its books based on the asset sale, which might have a positive impact on its sale price.

An acquiree's real estate may even be the means for an acquirer to finance the deal. For example, if the acquiree owns property, it may be possible to enter into a sale-and-leaseback transaction that generates enough cash to pay for the acquisition. Another possibility is to look for property leases held by the acquiree that are below current market rates, and sublease them for a profit. Finally, it may be possible to consolidate acquiree locations and sell any remaining properties that are no longer needed.

If a target has products that the buyer could develop in-house, then an alternative valuation method is to compare the *cost of in-house development* to the cost of acquiring the completed product through the target. This type of valuation is especially important if the market is expanding rapidly right now, and the buyer will otherwise forgo sales if it takes the time to pursue an in-house development path. In this case, the proper valuation technique is to combine the cost of an in-house development effort with the present value of profits forgone by waiting to complete the in-house project. Interestingly, this is the only valuation technique where most of the source material comes from the buyer's financial statements, rather than those of the seller.

The most conservative valuation method of all is the *liquidation value* method. This is an analysis of what the selling entity would be worth if all of its assets were to be sold off. This method assumes that the ongoing value of the company as a business entity is eliminated, leaving the individual auction prices at which its fixed assets, properties, and other assets can be sold off, less any outstanding liabilities. It is useful for the buyer to at least estimate this number, so that it can determine its downside risk in case it completes the acquisition, but the acquired business then fails utterly.

The *replacement value* method yields a somewhat higher valuation than the liquidation value method. Under this approach, the buyer calculates what it would

cost to duplicate the target company. The analysis addresses the replacement of the seller's key infrastructure. This can yield surprising results if the seller owns infrastructure that originally required lengthy regulatory approval. For example, if the seller owns a chain of mountain huts that are located on government property, it is essentially impossible to replace them at all, or only at vast expense. An additional factor in this analysis is the time required to replace the target. If the time period for replacement is considerable, the buyer may be forced to pay a premium in order to gain quick access to a key market.

It is also possible to create a *hybrid valuation model* that mixes several of these methods. For example, the buyer could calculate the liquidation value of a target, and then add to that number the next two or three years of free cash flow. This method yields a conservative valuation that the buyer would be hard put *not* to realize, and that might form the basis for a minimum bid.

Although these methods can be used for valuation, they usually supplement the primary method, which is the discounted cash flow (DCF) method, which will be addressed shortly.

CONTROL PREMIUM

Why does a buyer offer to pay more for a target than the price at which the target's shares currently trade? One reason is certainly to keep other potential bidders from entering the fray with their own bids. However, the real reason is that shares trade based on their value to individual shareholders, who have no control over the business; thus, a share price is only based on the prospective financial return that a shareholder expects to achieve. However, if a buyer wishes to obtain control over the target, then it should expect to pay a control premium over the current stock price. By doing so, it has complete control over the potential size and timing of cash flows. Historically, this has made the control premium worth somewhere in the range of 35 to 50 percent of a target's freely traded stock value. Recent control premiums for the purchase of publicly traded companies can be found in the annual *Control Premium Study* that is published by Mergerstat (located at www.mergerstat.com).

SYNERGY GAINS

If the buyer pays the full share value of a target, as well as a control premium, then how does it expect to earn a return? The target's existing shareholders appear to be receiving all of the value inherent in the business. There are certainly cases where the target's stock price may be unusually low, such as when industry is at the low point of a business cycle, where profits are minimized. In such cases, the buyer snaps up deals based on timing. However, these are isolated instances. In most cases, the buyer is depending on the realization of synergies between its own company and the target, which may be considerable.

A buyer with expert knowledge of potential synergy gains can earn substantial amounts that comfortably exceed the purchase price. However, a buyer may run into an

experienced seller who wants a share of those synergy gains. If the seller wants payment for an excessive portion of the expected gains, the buyer must walk away from the deal—there is simply no way to earn a profit from the transaction.

Synergies are only realized by strategic buyers, not financial buyers. On the one hand, a financial buyer simply buys a business in order to hold it and gain appreciation value from its internal growth over time. A strategic buyer, on the other hand, is willing to pay a higher price in the knowledge that it can squeeze out extra value. Thus, the strategic buyer may be willing to pay a higher price than a financial buyer, perhaps in the range of a 5 to 20 percent premium over what a financial buyer would pay.

Thus, a canny seller will court strategic buyers in order to maximize the price paid, but must be aware that it has to leave a generous amount of the potential synergies to the buyer in order to make the acquisition sufficiently tempting.

DISCOUNTED CASH FLOW (DCF) MODEL

The best possible reason to buy a company is for the cash that it can generate. The DCF model is designed to reveal the *free cash flow* that is available for distribution to investors at the end of each year shown in the model. This means that the model must not only reveal the cash generated by ongoing operations, but also subtract out all planned capital expenditures and tax payments, so that completely unrestricted cash surpluses or shortfalls are revealed for each year in the model.

The typical DCF model includes a projection of the target's cash flows for the next five years, plus a terminal value for what the target theoretically be sold for at the end of that time period (which is based on prices currently being obtained for comparable companies). An example of a DCF is shown in Exhibit 22.11.

The buyer should beware of models where the terminal value is by far the largest component of the model; the terminal value is the least predictable part of the valuation, because it is the furthest into the future and assumes a specific sale price that is very difficult to justify. If the terminal value is the bulk of the DCF, then the buyer will need to supplement the DCF analysis with other forms of valuation analysis.

A major part of the DCF analysis is the interest rate that is used for discounting the value of future cash flows to the current period. This interest rate is equivalent to the buyer's incremental cost of capital. The cost of capital is the weighted average cost of the buyer's debt, preferred stock, and equity. The cost of equity is the most difficult to determine, but usually involves the capital asset pricing model. On an extremely simplified basis, the cost of equity is at least 5 to 7 percent higher than the current interest rate on U.S. government treasury notes, and can be substantially higher. As an example, Exhibit 22.12 shows the dollar amount of the three components of a company's cost of capital, yielding a weighted average cost of capital of 10.7 percent.

It is preferable to use the *incremental* cost of capital, which incorporates the buyer's most recent cost of debt. The incremental rate is better, because that is the rate at which the buyer will need to obtain funding to pay for the target.

It is also possible to adjust the cost of capital for the perceived risk of the target company. For example, if the target is a well-established one with predictable cash flows,

EXHIBIT 22.11 Discounted Cash Flow Model

(000s)

	Year 1	Year 2	Year 3	Year 4	Year 5	Terminal Value
+ Revenues	$ 438	$ 473	$ 511	$ 552	$ 596	
− Cost of goods sold	175	189	204	221	238	
Gross margin	$ 263	$ 284	$ 307	$ 331	$ 358	
− General and administrative	171	184	199	215	232	
Earnings before interest and taxes	$ 92	$ 100	$ 108	$ 116	$ 126	
− Interest	5	5	5	5	5	
− Taxes	33	35	38	41	44	
− Incremental working capital change	22	24	26	30	33	
− Incremental fixed asset change	15	16	18	19	20	
+ Depreciation	14	15	17	18	19	
Cash flow	$ 31	$ 34	$ 37	$ 39	$ 42	$120
Discount rate	10%	10%	10%	10%	10%	
Annual discount rate	0.90909	0.82645	0.75131	0.68301	0.62092	0.56447
Discounted cash flows	$ 28	$ 28	$ 28	$ 26	$ 26	$ 68
Net present value	$ 204					

the buyer can simply use its cost of capital as the discount rate. However, if the target's cash flows are more uncertain, the buyer can add a risk percentage to its discount rate. By doing so, cash flows that are further in the future will be worth less in the DCF, resulting in a lower valuation for the target.

The buyer may also adjust the discount rate downward for any especially valuable characteristics that the seller might have, such as subject-matter experts or patents on key technology. However, this is an entirely subjective reduction. The buyer would do better to attempt to quantify these characteristics of the seller elsewhere in the model, such as an increase in revenues from companywide use of the seller's patented products.

EXHIBIT 22.12 Weighted Average Cost of Capital Calculation

Capital Type	Amount Outstanding	Interest Rate	Cost
Debt	$25,000,000	7%	$1,750,000
Preferred stock	10,000,000	10%	1,000,000
Equity	30,000,000	14%	4,200,000
Totals	$65,000,000	**10.7%**	$6,950,000

The interest rate used in the debt portion of the cost of capital can vary considerably, resulting in significant changes in the value of the target company. For example, if interest rates increase, the buyer's cost of capital also increases. When the buyer then uses this increased cost of capital as its discount factor in the DCF model, target company valuations will decline. Conversely, if interest rates drop, then target values increase. Thus, external economic factors driving interest rates are directly related to acquisition prices.

Also, the size of the target can alter the buyer's cost of capital. For example, if the prospective deal would require a large amount of financing by the buyer, it is likely that its incremental debt cost will increase, which in turn impacts its cost of capital. If this is the case, then use the projected increase in the cost of capital as the most appropriate discount rate in the DCF model; this will make the acquisition look less attractive.

The DCF is the most reliable method for valuing a mature, slow-growth company with established cash flows. It is not used so frequently for high-growth entities that are using all available cash to support their increasing working capital needs. Instead, buyers tend to use comparable valuations for these targets. However, it is always of some value to also run a DCF, because it reveals a reliable minimum valuation for the target. The buyer can also create a variety of cash flow projections for the target that are further out in the future than the usual five years used for the model, to get some idea of what the target's cash flows will be like once its high-growth period is over.

CONSTRUCTING CASH FLOW SCENARIOS

Where does the buyer obtain the information needed to construct a cash flow analysis? The seller will prefer to show estimates of future sales, which inevitably reveal an optimistic *hockey stock* of sudden growth in "just a few more months." If the buyer were to use just these projected numbers, it would likely arrive at a valuation that is too high, and overpay for the seller. A better method is to create multiple scenarios, where the seller's estimates are reserved for the most optimistic version. Another "most likely" estimate should be based on the seller's most recent historical results, while a conservative version assumes that the seller's historical results worsen significantly.

While the use of three cash flow scenarios certainly shows some valuation prudence, it can hide unsupported assumptions within the scenarios. For example, an analyst might assume a simplistic revenue decline of 10 percent in the conservative version, which is not based on any concrete risk analysis. Instead, use documented changes in specific variables in the three versions. For example, if there appears to be a risk of soft pricing in the market, then use the conservative scenario to specifically model price declines of various sizes. Similarly, if there is a risk of supplier bottlenecks, then model the impact of price increases for key materials. Also, if the target must match research expenditures elsewhere in the industry, then review percentage changes in these expenditures. By taking the time to document these more detailed analyses, a buyer can determine the price points, volume levels, and cost structures at which a target breaks even, and when the target can potentially earn a great deal of money.

Another factor to consider in one or more of the valuation scenarios is the presence or absence of seller risk guarantees. For example, if the seller is guaranteeing to pay for

any undocumented lawsuits or payouts related to documented lawsuits, then the buyer can eliminate this factor from its conservative scenario. In essence, the more risks the seller guarantees, the lower the expenses shown in the model, and the higher the valuation that the buyer can offer to the seller.

Once constructed, the buyer should multiply each of these cash flow versions by a weighting factor, and not simply average them. The most likely scenario should receive the bulk of the weighting, such as 60 or 70 percent, with the outlying conservative and optimistic versions receiving the remainder. Thus, a 20-60-20 or 15-70-15 weighting essentially assumes that the seller's most recent historical results are most likely to continue into the future.

A more conservative method of cash flow analysis is to construct an estimate based entirely on historical results, with a weighting system that favors the most recent year. For example, if the buyer wants to model the target's past five years of results, it can multiply the target's cash flows by five for the most recent year, by four for the immediately preceding year, and so on. Once all five years have been added together, divide by 15 to arrive at the weighted cash flow for the five-year period. The resulting 5,4,3,2,1 weighting system thereby gives some credence to relatively old cash flows and great merit to recent results. This method is not recommended, since it is entirely based on prior results, and gives no weighting at all to a target's future prospects.

CASH FLOW ADJUSTING FACTORS

The buyer cannot simply run a DCF of a target's existing operations and consider itself done. This would imply that the buyer intends to make virtually no changes to the target once it has completed the acquisition. In reality, there are multiple changes to be considered, many of which should be included in the projected cash flow.

In many acquisitions, the buyer assumes that the combined entities will be able to increase revenues beyond what the companies were achieving separately. However, revenue synergies are notoriously difficult to achieve, because they require the cooperation of a third party (customers). An experienced buyer usually reduces or even eliminates any revenue synergies in the cash flow model. Instead, it focuses on cost reductions, which are entirely within its control.

Not only should the buyer *not* budget for revenue gains, but it should strongly consider modeling for a modest revenue *decline* at the target that is caused by some degradation in its customer base. This is caused by any changes in service levels, salespeople, or products that customers experience as a result of the acquisition. Also, competitors will likely be circling the target's customers like sharks, hoping to pick off a few. Further, if the buyer is only planning to acquire a single division of a larger company, the target might lose some customers simply because the associated services or products of its parent company will no longer be sold, or not as a package. Thus, a reasonable modeling technique is to incorporate a modest decline in the target's customer base, especially during the initial year of the acquisition. A common reduction in the customer base is in the range of 2 to 5 percent.

The buyer must also assume a variety of acquisition expenses, including legal fees, valuation services, appraisals, environmental audits, and financial audits. If the buyer has engaged in a number of acquisitions, then it can easily compile a database of what these costs have been in the past, and use it to estimate such costs in a prospective valuation. If the buyer anticipates diverting a substantial amount of management time toward the integration of the target's operations into those of the buyer, then it can also estimate the impact of this "soft" cost on the entire business.

One likely cost control scenario is that some employees will be let go. If so, there will be some cost savings by eliminating their positions, but there will also be a short-term additional cost associated with severance pay. If the buyer is taking on this obligation, then it must factor severance pay into its cash flow assumptions.

A special case is adjustments to the cash flows associated with a target's defined benefit pension plan. These costs can vary substantially over time, so an analyst should intensively review the actuarial assumptions underlying any such plans. For example, if the buyer believes that the plan is underfunded, it has reasonable grounds for demanding a reduction in the purchase price, so that it can offset the imminent funding liability. Conversely, if the plan is overfunded, the seller can bargain for a purchase price increase, which effectively pays it back for the amount of the overfunding. The funding status is by no means obvious, since it is driven by the future interest rate assumption used by the plan actuary; the higher the rate, the fewer existing assets are needed to offset projected plan liabilities. Consequently, arguments over the correct interest rate assumption will alter the purchase price, and will result in changes to the DCF.

Another issue is the cyclicality of the industry in which the target is located. If there are strong historical cycles, then the buyer should assume that there will be a recurrence. This requires that the cash flow model assume the presence of both the upside and downside of that cycle, using historical information for both the duration and size of the cycle. This gives the buyer a reasonable idea of how cash flows will change over time. In many instances, highly variable cyclical results will force the buyer to abandon a deal, because the downside of the cycle eliminates or reverses the profits generated during other years.

An area missed by many cash flow models is the immediate sale of some assets following the acquisition. Either party might have duplicative or obsolete assets that can be dispositioned for immediate cash. If the buyer can presell some assets before a purchase agreement even closes, then this is a "hard" cash inflow to include in the cash flow model.

The buyer should also be aware of the seller's fixed asset replacement cycle. It is entirely possible that the buyer has delayed key asset purchases in order to give the appearance of having excellent cash flow. However, its equipment and facilities might now be so run down that the buyer must expend significant amounts over multiple years to replace the assets. The dollar value of the replacement amounts should be gleaned during the due diligence stage, and entered into the DCF.

The buyer should also include in the DCF the impact of any cost escalation clauses in the seller's contracts with its suppliers. For example, there may be a series of scheduled annual increases in a building lease, or a price increase in a raw materials

contract. As was the case with fixed asset replacements, these costs are not readily apparent, and must be found during the due diligence process.

Finally, the buyer may have some concern about the accuracy of the financial statements it is using to compile a cash forecast, if the target cannot provide audited financial statements. If there has never been an audit, and especially if the buyer's due diligence indicates some issues with the presented financial information, then it might have to adjust cash projections downward, or only base a valuation on the most conservative scenario. To avoid this, the target should have its books audited for the past year (and preferably two years), in order to qualify for high cash flow assumptions in the buyer's valuation model.

EARNOUT

There are times when the buyer and the seller have entirely different concepts of the valuation to be used for the acquisition, usually because the buyer is basing its valuation on the seller's historical performance, while the seller is using a much higher forward-looking view of its prospective performance. The *earnout* is frequently used to bridge the valuation perception gap between the two parties. Under an earnout, the seller's shareholders will be paid an additional amount by the buyer if it can achieve specific performance targets (usually the same ones it has already claimed it will achieve during the acquisition negotiations).

The earnout is also a useful tool for the buyer, because the seller's management team has a strong incentive to grow the business for the next few years. In addition, the buyer can shift a portion of its purchase price into a future liability that can likely be paid from cash earned in the future by the seller. It is also useful for the seller's shareholders, since it defers income taxes on the payment.

However, many earnouts also result in lawsuits, because the buyer merges the acquiree into another business unit, charges corporate overhead to it, or shifts key staff elsewhere in the company—all factors making it extremely difficult for the acquiree's management team to still earn the additional payment, or even to determine what its performance has become. Even if there are no lawsuits, the acquiree's management team may be so focused on achieving their earnout that they do not assist the rest of the buying entity with other matters, so that corporate-level goals are not reached. Also, if the earnout award is based strictly on the achievement of revenue, rather than profit, then the acquiree's management team may pursue unprofitable sales in order to meet their earnout goals.

The problems with earnouts can be mitigated by continuing to track the acquiree's performance separately in the financial statements, carefully defining the earnout calculation in the original acquisition document, requiring earnouts to be based solely on net income achieved, and by adding an additional layer of compensation that is based on working more closely with the rest of the buying company, such as commissions for cross-selling. Also, to keep the acquiree happy, do not institute a "cliff" goal, where no bonus is paid unless the entire target is reached. Instead, use a sliding scale, so that some bonus is paid even if only a portion of the performance target is achieved.

QUALITATIVE FACTORS

Thus far, the valuation discussion has centered entirely around a quantitative analysis of how much to pay for the selling entity. Although quantitative analysis certainly forms the core of a valuation, the buyer must also consider a broad array of qualitative factors. A sampling of the more common ones are as follows:

- *Difficulty of duplication.* If a buyer perceives that the barriers to entering a seller's field of operations are high, or if the cost of duplicating the seller's operations is excessive, the buyer may be more inclined to pay a premium for the business. For example, a proprietary database might take so long to duplicate that a buyer will value the seller just based on the cost it would otherwise incur to create the database from scratch.
- *Risk of expiring contracts.* A seller whose revenues are tied to short-term sales, without immediate prospects for renewing the backlog, will be perceived to have a lower valuation than an entity possessing a strong backlog and clear evidence of long-term sales agreements with its customers.
- *Management.* A seller's cost structure, perception in the marketplace, and customer relations are driven in large part by the quality of its management team. If this group is perceived to be first-class, it can increase the corporate valuation, since these people typically have exceptional skill in growing businesses and in anticipating and overcoming operational problems.
- *Client base.* A significant factor in determining valuation is the size, type, and distribution of clients. For example, a seller with a single client will be perceived to be at great risk of losing all of its sales if the client is dissatisfied. Alternatively, a broad mix of clients, particularly those large enough to support multiple sales, will reduce the perceived risk of sales loss.
- *Inherent risk.* A seller whose financial performance can be dramatically impacted by adverse situations will have a comparatively lower valuation. For example, farm businesses can be severely impacted by drought conditions.
- *Disaster analysis.* Even beyond the inherent risk just noted, the buyer should closely review the characteristics of the seller's business to see if there is any risk of a truly catastrophic failure, such as a facility being destroyed because it is situated on an earthquake fault line. Even if the probability of a disaster is low, the consequences may be so large that the buyer must either walk away from the deal or find a mitigating action to offset the risk.
- *Lawsuits.* Nothing will drive a buyer away faster than an unresolved lawsuit, especially one with a demand for a large settlement. Even if there is no lawsuit, the prospect of one, as evidenced by lawsuits targeted at others in the same industry, can have a negative impact on valuation.
- *Patents.* If a seller has established key patents or processes that give it a clear competitive advantage, this can increase its valuation level.
- *Branding.* If a seller has invested a great deal of time and effort in creating brands for its products or services, this can give it a significant boost in valuation. However, if the seller has not continued to invest in its brand, then there is a risk of brand degradation that will require years to rebuild.

It is best to wait until the quantitative analysis has been completed, and then adjust the baseline quantitative results with estimates of the additional impact of the items just noted.

WHICH VALUATION METHOD IS BEST?

The buyer should use a number of different valuation models. By doing so, it can obtain a high-low range of estimates that gives it the general boundaries for a valuation. The best valuation estimate usually begins with a DCF analysis, adjusted for comparable transaction multiples. For example, a standard DCF analysis might reveal that a target is worth $15,000,000, which is approximately eight times its most recently reported EBITDA. However, because the target is located in a ''hot'' industry, with unusually high multiples of 12 times EBITDA, the buyer should consider increasing the size of its offer to match the going rate. Its alternative is to wait until such time as the industry valuation gradually declines, at which point the DCF results and comparables are in closer alignment.

An example of what a range of values could look like is shown in Exhibit 22.13, where several methods are used that were discussed earlier in the ''Alternative Valuation Methods'' section. In the example, note that the revenue multiple method yields a clearly outsized valuation, while the real estate values method results in an excessively low one. Since these valuations are clearly beyond what the other methods are indicating, the high-low valuation extremes are excluded from the likely valuation range.

The buyer should also create a hard cap on the valuation, beyond which it will not go under any circumstances. To derive it, the buyer should have a higher-level executive review all of the valuation models, and use them to set a price ceiling. This executive should not be directly involved in the prospective acquisition, and so has

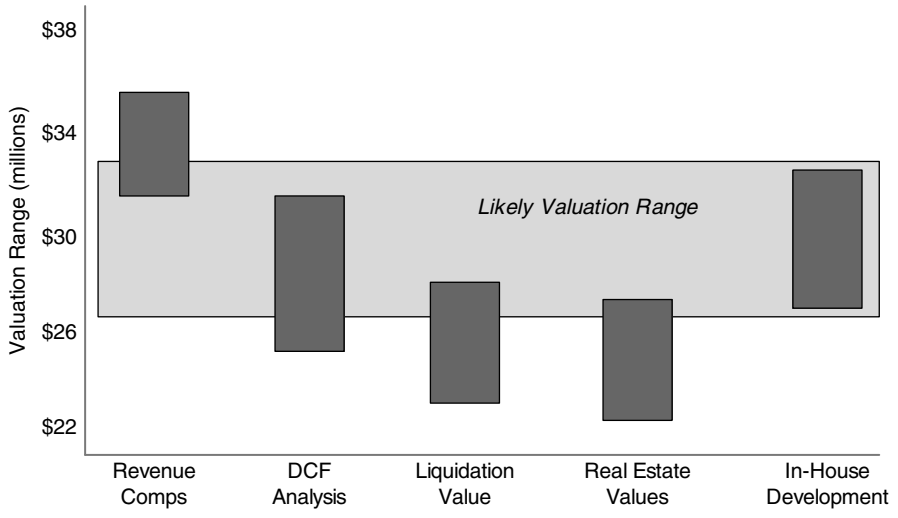

EXHIBIT 22.13 Valuation Range Analysis

no personal interest in whether the buyer acquires the target. The resulting price cap is the absolute maximum that the buyer will pay. By establishing such a cap, the buyer can avoid overbidding in the heat of negotiations.

Also, though it might initially seem odd to do so, the buyer should consider establishing a floor price. By establishing a price that is reasonably fair to the seller, there is less risk that the seller will back out at the last moment and court other bidders. Also, the seller is more cooperative with subsequent integration efforts if it believes it was paid a fair amount. Of course, if the seller is in desperate straights and wants to sell at any price, then the buyer should hardly baulk at paying too little!

METHOD OF PAYMENT

The buyer can pay the seller in cash, debt, or stock. If the seller accepts *cash*, then it must immediately pay income taxes on its gain. However, the seller also obtains an entirely liquid asset, and is no longer tied to the future results of its business. Generally speaking, the buyer is willing to pay less if the payment is in cash, since the buyer will have to dip into its capital resources to obtain the funds, rendering it less able to deal with other issues that might require cash funding. If the buyer goes on to achieve significant synergy gains, then its shareholders will receive the entire benefit of the gains, while the seller's shareholders will receive no gain. Finally, the buyer may want to pay cash simply because it can, and other bidders cannot. If the buyer is cash rich, and interest rates are so high that the cost of debt is prohibitive for other bidders, then it can make an offer that the seller literally cannot refuse.

If the buyer pays in *stock*, the seller gains tax-deferred status on the payment. If the seller is in no immediate need of cash, this might make a stock payment a reasonable form of compensation. The other consideration in a stock payment is the buyer's expectation that it will create sufficient synergies to improve the value of its stock. By paying the seller in stock, the buyer's shareholders are forgoing some of the synergy gains to be achieved, and giving them to the seller. Conversely, if the seller suspects that it cannot achieve sufficient synergies, then it can offload some of the risk to the seller by issuing stock. Finally, if the buyer is a private company, the seller has no clear path to eventually liquidating any shares paid to it, which makes this an extremely unpalatable option.

The buyer's payment behavior is also driven by its perception of how fairly the market is currently valuing its stock. If the buyer feels that its stock price is currently trading at a maximum level, then it will be more inclined to use its stock for acquisitions, and will act in the reverse manner if its stock is trading at a low price. If the buyer consistently uses its stock to acquire multiple companies in succession, the market might interpret this as a sign that the buyer's management is of the opinion that the stock has reached a maximum valuation, and so will tend to trade down its price.

If the buyer pays with *debt*, the seller is in the worst position of all three payment scenarios. The seller's shareholders do not obtain any liquid assets in the short term, they do not share in any upside potential caused by synergy gains that would have been realized by stock ownership, and they are totally dependent on the buyer's management

team to create enough cash flow to pay them. If the seller has collateralized the assets of the sold business, this is still not adequate, since the buyer may have stripped the entity of assets by the time the seller obtains possession of it.

In short, the seller prefers cash for its liquidity value, but forgoes the opportunity to share in any synergy gains that stock ownership would have provided. The buyer prefers a cash payment if it is sure of its ability to achieve significant synergies, which it wants to retain through stock ownership. A debt payment is the worst-case scenario for the seller, who obtains neither liquidity nor appreciation value. Although these choices are frequently driven solely by the financing available to the buyer, this is not always the case. If the buyer has the option of paying in stock or cash, but pays in cash, then this is a significant indicator that it believes it can reserve significant synergy gains for its shareholders. If the buyer has the same option but pays in stock, then it may be more concerned with its ability to achieve synergy gains, and so is offloading some of the risk onto the seller.

The buyer can model its payment options with a pro forma spreadsheet, such as the one shown in Exhibit 22.14. The exhibit contains an example of a 100 percent stock payment, followed by a 100 percent cash payment. The key financial information for the buyer and seller are identical in both scenarios. In the stock payment scenario, the buyer plans to achieve $535,000 in savings through various cost reductions. However, because it plans to pay in stock, it is passing some of the gains over to the selling shareholders, as reflected in the earnings per share figure. In the cash payment scenario, the buyer plans to achieve the same savings, but must also incur the interest cost of a loan that it uses to pay cash to the seller's shareholders. Though the added interest burden drags down the net earnings of the combined entities, the existing buyer shareholders receive the entire synergy gains, resulting in an impressive earnings per share boost.

TYPES OF ACQUISITIONS

In an acquisition, the overriding issue for the seller is to avoid paying income taxes. In order to do so, the form of reorganization must comply with several key sections of the Internal Revenue Code (IRC), specifically sections 354–358 and 367–368. These sections define the various types of permissible tax-free acquisitions, and the conditions under which they apply. This section addresses the various types of acquisitions and their tax (and other) implications for the participants.

TAX IMPLICATIONS OF AN ACQUISITION

When determining the proper structure of an acquisition, the taxability of the transaction to the seller plays a key role. It is possible that the seller will want to pay income taxes immediately, rather than delaying the recognition of a gain. This scenario arises when their tax basis in the acquiree is more than the price being paid for it, resulting in the complete avoidance of taxes. However, it is far more likely that the seller will have a

EXHIBIT 22.14 Payment scenarios

(000s)

Stock Payment Scenario	Buyer	Seller	Adjustment	Adjustment Notes	Combined Results
Revenues	$ 24,000	$ 3,000			$27,000
Cost of sales	$ 16,000	$ 2,000	−$ 360	(1)	$17,640
Administrative	$ 6,000	$ 500	−$ 175	(2)	$ 6,325
Interest	$ 100	$ 50			$ 150
Income before tax	$ 1,900	$ 450			$ 2,885
Income tax at 34%	$ 646	$ 153			$ 981
Net income	$ 1,254	$ 297			$ 1,904
Outstanding shares	400	100			
Seller shares retired			−100		
Buyer shares issued			150	(3)	550
Earnings per share	$ 3.14	$ 2.97			**$ 3.46**

Cash Payment Scenario	Buyer	Seller	Adjustment	Adjustment Notes	Combined Results
Revenues	$ 24,000	$ 3,000			$ 27,000
Cost of sales	$ 16,000	$ 2,000	−$ 360	(1)	$ 17,640
Administrative	$ 6,000	$ 500	−$ 175	(2)	$ 6,325
Interest	$ 100	$ 50	$ 180	(4)	$ 330
Income before tax	$ 1,900	$ 450			$ 2,705
Income tax at 34%	$ 646	$ 153			$ 920
Net income	$ 1,254	$ 297			$ 1,785
Outstanding shares	400	100			
Seller shares retired			−100		
Buyer shares issued					400
Earnings per share	$ 3.14	$ 2.97			**$ 4.46**

(1) 2% reduction in purchasing costs for the combined entities

(2) Overlapping administrative costs eliminated

(3) Share exchange is 1.5 buyer shares for each seller share

(4) Sale price is 1× revenues, financed with 6% loan

minimal tax basis in the acquiree, and so wishes to avoid the immediate recognition of a gain. To avoid gain recognition, the Internal Revenue Service (IRS) has stipulated that the following requirements be met:

- The transaction must have a bona fide business purpose other than tax avoidance.
- There must be a *continuity of interest*, where the ownership interests of the selling stockholders continue into the acquiring entity. This is achieved by having the

buyer pay a substantial portion of the purchase price in its own stock. The IRS considers a ''substantial portion'' of the purchase price to be at least 50 percent. Some transactions are structured to pay sellers preferred stock rather than common stock, so that they still meet the requirements of the continuity of interest rule, but also give the sellers rights to additional payments, as would be the case with debt.

- There must be a *continuity of business enterprise*, where the buyer must either continue the seller's historic business or use a significant proportion of the acquired assets in a business.

The IRS has incorporated these requirements into four types of legal reorganization, which are commonly described as Type A, B, C, or D reorganizations. The letter designations come from the paragraph letters in the IRC under which they are described. All four types of reorganizations, as well as several variations, are described in greater detail later in this chapter.

In an acquisition, the buyer generally recognizes no gain or loss. Instead, its primary tax concern is the tax basis and holding period of the assets it acquires. Ideally, it wants to restate the assets to their fair market values (FMV), on the assumption that the FMV is higher than the tax basis of the seller. If the FMV is indeed higher, then the buyer can record a larger amount of asset depreciation, which reduces its future tax liability. The buyer can only restate assets to their FMV if it acquires them through an asset acquisition (see next section). Otherwise, it will retain the assets' tax basis and holding period. However, retaining the original tax basis and holding period may be acceptable if the purchase price of the assets is less than their carryforward basis, since the buyer can recognize more depreciation expense than if it were to restate the assets to their FMV.

There is one scenario where the buyer can complete a nontaxable reorganization and still record the acquired assets at their FMVs. This is possible under Section 338 of the IRC, which allows this treatment if the buyer acquires at least 80 percent of the total voting power and 80 percent of the total value of the seller's stock within a 12-month period. However, Section 338 is laced with a variety of restrictions that reduce its applicability.

In short, the primary driver of the type of acquisition used is the seller's need to defer taxes. The buyer's interests involve a far smaller tax impact than that experienced by the seller, so the seller's wishes generally determine the method used.

ASSET ACQUISITION

The only type of acquisition that is *not* addressed by the IRC is the asset acquisition, because this is a taxable transaction.

In an asset acquisition, the buyer acquires either all or a selection of the seller's assets and liabilities. This transaction is most favorable to the buyer, who can record the acquired assets at their FMV (which is usually an increase from the seller's tax basis), thereby yielding more depreciation to use as a tax shield. This also results in a smaller gain if the buyer subsequently sells the assets. However, it must also obtain legal title to each asset it acquires, which can require a considerable amount of paperwork. Also,

depending on the circumstances, the seller may have to notify its creditors of the impending transaction. For example, if the buyer intends to acquire a seller's below-market asset lease agreement, the lessor might only agree to the sale if it can increase its lease rate.

An asset sale is not tax-efficient for the seller. Of primary importance is that the seller must pay income taxes on the difference between the consideration received and the seller's basis in the entity. The situation is more dire if the selling entity is a ''C'' corporation, due to a dual taxation scenario. First, the ''C'' corporation must pay taxes to the extent that the total consideration received exceeds its adjusted basis in the assets sold. In addition, assuming that the ''C'' corporation intends to distribute its remaining assets to stockholders and dissolve, the stockholders must pay taxes to the extent that the distributions received exceed their cost basis in the stock.

Also, if the seller had previously claimed an investment tax credit on an asset that it is now selling, the credit might be recaptured, thereby increasing its income taxes.

An asset acquisition can be used to avoid acquiring unknown or contingent liabilities. For example, if the selling entity is the subject of a lawsuit and the buyer wishes to avoid any liability related to the lawsuit, then it can selectively purchase assets, leaving the selling entity with responsibility for any legal settlement. However, some environmental laws stipulate that the liability for future hazardous waste cleanups can attach to assets. Consequently, the buyer of real estate assets should go to considerable lengths to verify the extent of any environmental contamination before purchase.

An asset acquisition is also useful for the partial sale of a business that has multiple products or product lines. For example, a buyer may only want to purchase a single product in order to fill out its product line, leaving the seller with most of its original business intact. Though it is also possible to spin off such assets into a separate legal entity, it is often easier to simply conduct an asset sale.

The form of the purchase agreement varies from that used for an entity purchase. Instead, the parties use a general assignment and bill of sale, with an attached schedule that itemizes each asset or liability being transferred.

Depending on the proportion of assets sold to the buyer, this transaction can require the direct approval of at least a majority of the seller's stockholders. The selling entity remains in existence, and continues to be owned by the same stockholders. However, if most or all of its assets are sold, then the seller's stockholders normally liquidate the entity.

TYPE ''A'' REORGANIZATION

A type ''A'' reorganization is governed by paragraph A of Section 368(a)(1) of the IRC, which simply states that a reorganization is ''a statutory merger or consolidation.'' To expand on this limited definition, a statutory merger involves the transfer of all seller assets and liabilities to the buyer in exchange for the buyer's stock, while a statutory consolidation involves the transfers of the assets of two companies into a new entity in

exchange for the stock of the new entity. In both cases, the selling entities are then liquidated.

An additional requirement of a Type A reorganization is to have a continuity of interest, as explained earlier in the Tax Implications of a Reorganization section. In order to meet this rule, the buyer should issue at least 50 percent of its stock as part of the purchase price. The transaction must also meet the continuity of business enterprise rule.

This transaction allows for tax-deferral by the seller for that portion of the purchase price paid with the buyer's stock. The buyer must assume all of the seller's assets and liabilities.

The boards of both entities must approve the transaction, as well as at least a majority of the stockholders of the selling entity. Since the selling entity's board of directors must approve the transaction, this is not a suitable vehicle for a hostile takeover.

The principal difference between the Type A and B reorganizations is that other consideration besides stock can be paid under a Type A, whereas the price paid under a Type B must be solely for stock. Also, the selling entity is dissolved in a Type A, but can be retained in a Type B reorganization.

The Type A reorganization is not commonly used when valuable contracts are associated with the selling entity, because they might be terminated at the option of the business partners when the selling entity is liquidated at the end of the reorganization.

In summary, the Type A reorganization is primarily of benefit to the seller, who can obtain some cash, debt, or preferred stock as part of the purchase price, while still retaining tax deferred status on the purchase price that is paid with the buyer's stock. It is less useful for the buyer, who runs the risk of losing contracts associated with the selling entity.

TYPE ''B'' REORGANIZATION

A type ''B'' reorganization is governed by paragraph B of Section 368(a)(1) of the IRC. The paragraph is as follows:

> The acquisition by one corporation, in exchange solely for all or a part of its voting stock (or in exchange solely for all or a part of the voting stock of a corporation which is in control of the acquiring corporation), of stock of another corporation if, immediately after the acquisition, the acquiring corporation has control of such other corporation (whether or not such acquiring corporation had control immediately before the acquisition).

In essence, the buyer exchanges nothing but its stock for the stock of the seller, resulting in the selling entity becoming a subsidiary of the buyer. The IRS has clarified the basic definition to state that only *voting* stock can be used in the transaction. For example, if the buyer issues any preferred or nonvoting stock as part of the deal, then it no longer qualifies as a Type B reorganization. Also, the seller cannot give the selling entity's stockholders the option of being paid with cash instead of stock.

In addition, the buyer must gain immediate control over the seller, which the IRS defines as the buyer receiving at least 80 percent of the stock of the selling entity. However, it is allowable to gain *creeping control* over the seller, where the buyer gains control over a period of no more than 12 months. Creeping control is only allowable if the buyer has a plan for gaining control during this time period.

Finally, this transaction is subject to the IRS's continuity of interest and continuity of business enterprise requirements.

In summary, the Type B reorganization is most useful when the selling entity must be retained, usually because it has valuable contracts that would otherwise be terminated if the entity were to be liquidated.

TYPE ''C'' REORGANIZATION

A type ''C'' reorganization is governed by paragraph C of Section 368(a)(1) of the IRC. The paragraph is as follows:

> The acquisition by one corporation, in exchange solely for all or a part of its voting stock (or in exchange solely for all or a part of the voting stock of a corporation which is in control of the acquiring corporation), of substantially all of the properties of another corporation, but in determining whether the exchange is solely for stock the assumption by the acquiring corporation of a liability of the other shall be disregarded.

In order to be a nontaxable transaction, paragraph C requires that the seller transfer essentially all of its assets in exchange for the buyer's voting stock. Further, those assets transferred must be critical to the continuation of the business, which is an element of the continuity of interest requirement discussed earlier. Also, the continuity of business enterprise requirement must be fulfilled. Finally, the stock paid for the transaction must be entirely the seller's *voting* stock, and the selling entity must liquidate itself.

To qualify under the asset transfer requirement of the Type C reorganization, the seller must transfer to the buyer at least 90 percent of its net assets, including all of those assets considered critical to the ongoing operations of the business.

It is possible for the buyer to pay some cash as part of this transaction. However, at least 80 percent of the FMV of the assets purchased must be solely for stock, so only the remaining asset value can be paid for with cash. The seller must pay income taxes on any portion of the purchase that is not paid for with the buyer's stock.

Any dissenting shareholders have the right to have their ownership positions appraised and then paid in cash. The extent of these cash payments will increase the total proportion of nonstock payment made, which can affect the nontaxable nature of the entire transaction. Thus, a significant proportion of dissenting shareholders can prevent the ''C'' reorganization from being used.

In summary, the Type C reorganization is most useful when the seller is willing to accept mostly stock in payment, while the buyer does not need the selling entity, which

is liquidated. The buyer can also record the acquired assets at their FMV, which is generally higher than the tax basis that would otherwise be inherited from the seller.

TYPE ''D'' REORGANIZATION

A type ''D'' reorganization is governed by paragraph D of Section 368(a)(1) of the Internal Revenue Code. The paragraph is as follows:

> A transfer by a corporation of all or a part of its assets to another corporation if immediately after the transfer the transferor, or one or more of its shareholders (including persons who were shareholders immediately before the transfer), or any combination thereof, is in control of the corporation to which the assets are transferred; but only if, in pursuance of the plan, stock or securities of the corporation to which the assets are transferred are distributed in a [qualifying transaction].

Type D reorganizations can be either *acquisitive* or *divisive*. An acquisitive reorganization is when the seller transfers substantially all of its assets to the buyer in exchange for at least 80 percent of the buyer's voting and nonvoting stock. This is also known as a *reverse merger*.

A divisive Type D reorganization is when a single entity separates into two or more separate entities. The division occurs in two steps. First, a company transfers some of its assets to a corporation in exchange for voting control of that entity. It then transfers the acquired control to its own stockholders. There are three types of divisive reorganizations, all of which are tax-free:

- *Spin-off.* Stockholders end up with shares of both the original and new entities.
- *Split-off.* Some stockholders retain their shares in the original entity, while others swap their stock in the original entity for shares of the new entity. This approach is most useful if there is a difference of opinion amongst the stockholders regarding the future direction of the original entity, since they now have a choice regarding which entity to own.
- *Split-up.* The original entity creates two new entities, transfers its assets to them, and then liquidates. Stockholders end up with shares in the surviving entities. As was the case with a split-off, this approach is useful for separating internal factions who disagree about how the company is being managed.

All of the variations noted here are also subject to four requirements. First, the original entity must distribute the stock of the new entity to its stockholders, resulting in their control of it. Second, the original entity can only distribute the stock of the new entity to its stockholders. Third, subsequent to the transaction, both entities must be actively engaged in business. Finally, the transaction cannot be intended to avoid tax payments.

A type "D" reorganization is primarily intended to govern the tax-free division of a company into smaller entities, rather than to acquire another entity.

TRIANGULAR MERGER

A triangular merger is a reorganization in which a subsidiary owned by the buyer merges with the seller, with the selling entity then liquidating. Being a merger rather than an acquisition, the transaction will eliminate all minority stockholders, since they are legally required to accept the buyer's purchase price. Also, the approval of only the selling entity's board of directors is needed, not the selling stockholders.

For a triangular transaction to be nontaxable, the buyer must have at least 80 percent control over its subsidiary, and must acquire at least 90 percent of the FMV of the buyer's net assets. Also, the transaction between the subsidiary and the selling entity must satisfy the requirements noted earlier for a Type A reorganization, which include the presence of a continuity of interest and a continuity of business enterprise.

REVERSE TRIANGULAR MERGER

A reverse triangular merger is a reorganization in which a subsidiary owned by the buyer merges into the seller, with the subsidiary then liquidating. The buying parent company's voting stock is then transferred to the selling stockholders in exchange for their stock in the selling entity. Being a merger rather than an acquisition, the transaction will eliminate all minority shareholders, since they are legally required to accept the buyer's purchase price. Also, the approval of only the selling entity's board of directors is needed, not the selling stockholders.

For a reverse triangular merger to be nontaxable, the selling entity must acquire substantially all of the assets of the buyer's subsidiary, and the buyer must obtain at least 80 percent control of the selling entity. Also, the buyer must acquire at least 90 percent of the FMV of the buyer's net assets.

The reverse triangular merger is most commonly used when the selling entity has valuable contracts that would otherwise be canceled if the selling entity were not to survive the acquisition transaction. It is also used when the selling entity's stock is too widely held to make a direct stock purchase practicable, or where there might be a significant proportion of dissenting stockholders.

Sellers tend to be less enthralled with a reverse triangular merger, because this type of reorganization severely limits the amount of cash they can receive. Because the selling entity must give up at least 80 percent of its stock for the stock of the buyer's subsidiary, this leaves no more than 20 percent of the total purchase price available for payment in cash. Nonetheless, this is one of the most common types of reorganization in use.

TERMS OF THE ACQUISITION AGREEMENT

An acquisition agreement is a lengthy document requiring expert legal assistance. This book cannot begin to address all aspects of the acquisition agreement, but will address two areas in which the acquiring company can mitigate its risks.

First, the acquisition agreement should contain indemnification rights. This is the buyer's right to obtain payment from the acquiree if the buyer finds that the acquiree's finances and operations are not as described to the buyer by the acquiree. Indemnification rights usually include a buyer deductible of between 0.5 and 1 percent of the entire transaction value, which means that the buyer must absorb the amount of the deductible before claiming any excess amount—the deductible is designed to avoid frivolous claims by the buyer. When negotiating the acquisition agreement, it is possible to modify indemnification rights so that the buyer can claim payment of the deductible amount if a claim exceeds the amount of the deductible. Another point of negotiation is the duration of the indemnification rights, which should last from one to two years. Furthermore, the deductible can be eliminated for certain types of risks, or increased for yet other risks. Also, the maximum possible amount of indemnification is subject to considerable negotiation.

Second, it is useful to obtain clearly defined representations and warranties regarding specific risk areas. Acquirees are reluctant to grant wide-ranging "blanket" representations and warranties, but are more likely to accede to more tightly defined areas. This approach allows the buyer to concentrate representations and warranties primarily on those areas in which it feels the greatest levels of risk are concentrated.

In both of these areas, sharp negotiation can be expected, so the buyer should clearly prioritize which contract clauses must be obtained, and which can be bartered away.

WHEN TO USE AN INVESTMENT BANKER

An investment banking house provides services in the areas of locating both acquirees and acquirers, formulating complex deals, valuing deals, and providing an outside opinion on prospective deals. These are valuable services, but can come at a considerable cost. To avoid investment banking fees, some CFOs bring all or portions of the investment banking services in-house.

The investment banking function most commonly performed internally is the search for acquisitions, on the grounds that a company that is even remotely active in its chosen industry should be aware of its competitors and be able to scout them without outside help. This is not always the case if an investment banker can provide a key contact at a prospective acquiree.

For less complex deals, especially using purchase or sale terms that a CFO has used before in previous deals, there is no overriding need for an investment banker. However, even in this situation, it is useful to occasionally have an investment banker review a prospective deal, just to see if changes in the tax laws or new, innovative acquisition structures have recently arisen that could apply to the company's situation. Conversely,

an overly complex acquisition deal is the ideal place to use an investment banker, since this is where they have the greatest expertise.

Finally, the board of directors sometimes insists on using investment bankers for larger deals because they want outside verification of the deal valuation, and also to protect themselves from shareholder lawsuits. This is less of a concern in a closely held company with few shareholders.

SUMMARY

In many organizations, the CFO is primarily rated on his or her ability to find, evaluate, and purchase other companies. Accordingly, this chapter has focused to a considerable extent on the due diligence process (which can be supplemented by the due diligence checklist in Appendix C), as well as on the most common valuation techniques and the large array of qualitative factors that can influence the purchase price.

PART SEVEN

Other Topics

CHAPTER TWENTY-THREE

23 Employee Compensation

THE CFO FREQUENTLY SUPERVISES the human resources department, and so is responsible for a variety of employee-compensation topics. Although this chapter is not intended to be a comprehensive overview of the entire compensation area, it does provide useful information on several compensation topics for which the CFO is frequently expected to have direct responsibility—deferred-compensation plans, life insurance, stock-appreciation rights, restricted-stock units, and stock options. These topics tend to fall outside the range of day-to-day activities of the human resources department, because they tend to be granted only under special circumstances and with greater frequency to the executive team.

An additional topic is the use of a bonus sliding scale. The human resources department manages the bonus plan, but the CFO should be aware of the sliding scale system, since it has a significant impact on the behavior of anyone subject to the bonus plan. Finally, we examine the use of captive insurance companies, which can profoundly reduce the cost of employee benefits.

DEFERRED COMPENSATION

A variety of deferred-compensation plans are used by CFOs who attempt to lock in the services of company employees as far into the future as possible. Under any of these plans, an employee's tax objective is to only pay a tax when the compensation is actually received, while the employer wants to receive a full expense deduction for any amounts paid—and the sooner, the better.

If a plan meets enough criteria to be classified as an *exempt trust* or *qualified plan*, then a company can immediately recognize the expense of payments made into it, even though the employees being compensated will not be paid until some future tax year. Also, the value of funds or stock in the trust can grow on a tax-deferred basis, while participants in the plan will not be taxed until they are paid from it. In addition, the

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funds paid from such a plan might be eligible for rollover into an IRA, which results in an additional delay in the recognition of taxable income. While the funds are held in trust, they are also beyond the reach of any company creditors.

In order to become a qualified plan, it must meet a number of Internal Revenue Service (IRS) requirements, such as a minimum level of coverage across the company-wide pool of employees, the prohibition of benefits under the plan for highly compensated employees to the exclusion of other employees, and restrictions on the amount of benefits that can be issued under the plan. Since many employers are only interested in creating deferred-compensation plans in order to retain a small number of key employees, they will instead turn to a *nonqualified plan*, which avoids the requirement of having to offer the plan to a large number of employees.

If the plan is nonqualified, then the employer can only record the compensation expense at the same time that the employees are compensated. A company that only wants to extend deferred-compensation agreements to a few select employees will tend to use this type of plan, since it allows the company to increase the amount of per-person compensation well beyond the restricted levels required under a qualified plan.

A useful variation of the nonqualified-plan concept is the *rabbi trust*, which is an irrevocable trust used to fund deferred compensation for key employees. Under this approach, a company contributes stock to a third-party trustee, such as a bank or trust company, with the stock being designated for eventual payment to a few key employees. Employee vesting can take seven years or even longer in a few instances, which gives companies an excellent tool to lock in key employees over long periods of time with such plans. Employees can be paid from the trust either in stock or cash, and will recognize income at the time of receipt. The company can recognize an expense at the same time that the employee recognizes income; however, if the employee gradually vests in the plan, the expense can be proportionally recognized by the company at the time of vesting. If the payments made into the trust are in the form of company stock, then the company must only record as an expense the value of the stock at the time of grant and can ignore any subsequent changes in the stock's value. A company that uses a rabbi trust does not have to make extensive reports to the government under Employee Retirement Income Security Act (ERISA) rules; instead, it is only necessary to make a one-time disclosure of the plan within four months of its inception. It is also necessary to initiate the plan before the start of any services to which the payments apply or at least include in the plan a forfeiture clause that is active throughout the term of the deferred-compensation agreement.

The terms of a rabbi trust must also state that a key employee's benefits from the plan cannot be shifted to a third party. It must also state that the trust be an unfunded one for the purposes of both taxes and Title I of ERISA. Further, the plan must define the timing of future payments, or the events that will trigger payments, as well as the amount of payments to be made to recipients.

A key consideration for any company contemplating the creation of a rabbi trust is that the plan assets must be unsecured and cannot unconditionally vest in the employees who are beneficiaries of the plan. This requirement is founded on the economic benefit doctrine, which holds that the avoidance of taxation can only occur if the receipt of funds is subject to a substantial risk of forfeiture. To this end, the plan

document must state that plan participants are classified with general unsecured creditors in terms of their right to receive funds from the plan. The contractual obligation to pay employees from the plan cannot be secured by any type of note, since that defeats the purpose of having the assets be available to general creditors. However, just because the funds can be claimed by general creditors does not mean that they are available for other company uses—payment obligations to targeted employees must be made before any funds may be extracted for other company uses.

The unsecured status of a rabbi trust can be a cause of great concern for employees being paid under its terms. Not only are the funds contributed to the trust at risk of being claimed by general creditors, but so too are all salary deferrals made by the targeted employees into the trust. This is a particular problem in the event of corporate bankruptcy, since secured creditors will be paid in full before the key employees can claim any remaining funds from the trust, which might result in a small payment or none at all. When a bankruptcy occurs or seems likely, the company is required to notify the trustee, which must halt all subsequent scheduled payments to plan participants and hold all remaining funds for distribution to secured creditors. Further, a change in control might result in a new management team that is not inclined to honor the terms of a deferred-compensation agreement that require additional payments into the trust, in which case the recipients under the plan can sue the company for the missing benefits. There is some protection for key employees in this case, however, because the terms of the deferred-compensation agreement will require the third-party trustee to make payments to employees as they become due; the main problem is that the funds for these payments will only continue to be available if the company pays funds into the trust.

If the perceived risk to plan participants outweighs the advantages of having a rabbi trust, it is also possible to create a *secular trust*. Under this approach, plan participants will have their assets protected in the event of corporate insolvency, but the reduced level of risk is offset by current taxation of the deferred compensation, which defeats the purpose of having the plan. A combined version of the two plans, called a *rabbicular trust*, starts as a rabbi trust, but then converts to a secular trust if the company funding the plan approaches bankruptcy. However, this approach will still result in the immediate recognition of all income at the time of conversion to a secular trust.

Although the rabbi trust concept can result in substantial benefits to both an employer and key employees, it is not allowed in some states, or only in a modified form. Also, rabbicular trusts must be carefully written to comply with all deferred-compensation laws at both the state and federal levels. Consequently, the CFO should obtain the assistance of a qualified taxation professional before setting up either type of deferred-compensation plan.

LIFE INSURANCE

It is common practice for a company to provide group term life insurance to its employees as part of a standard benefit package. This requires some extra reporting from a tax perspective, however. If the amount of the life-insurance benefit exceeds

$50,000, the company must report the incremental cost of the life insurance over $50,000 (to the extent that the employee is not paying for the additional insurance) on the employee's W-2 form as taxable income. In the less common case where the company provides life insurance that results in some amount of cash surrender value, then the cost of this permanent benefit to the employee must also be included in the employee's W-2 form. The only case in which these costs are not included in an employee's W-2 form is when the company is the beneficiary of the policy, rather than the employee. The opposite situation arises if the company is providing life insurance only to a few key employees, rather than to all employees; in that case, the entire cost of the insurance must be reported on the employee's W-2 form as taxable income.

STOCK APPRECIATION RIGHTS

A stock appreciation right (SAR) is a form of compensation that rewards an employee if there is an increase in the value of a company's stock, without the employee actually owning the stock. For example, an employee is given 1,000 SARs at the company's current stock price. When the stock price later increases, the employee exercises the SARs at his or her option, resulting in a cash payment by the company to the employee for the net amount of the increase. No stock actually changes hands.

The employee recognizes no income and the company no expense at the time the SARs are granted. Tax recognition only occurs for both parties when the employee chooses to exercise the SARs and the company issues a payment for them. The company will treat this cost as a salary or bonus expense.

STOCK OPTIONS

A stock option gives an employee the right to buy stock at a specific price within a specific time period. Stock options come in two varieties: the *incentive stock option* (ISO) and the *nonqualified stock option* (NSO).

Incentive stock options are not taxable to the employee at the time they are granted, nor at the time when the employee eventually exercises the option to buy stock. If the employee does not dispose of the stock within two years of the date of the option grant or within one year of the date when the option is exercised, then any resulting gain will be taxed as a long-term capital gain. However, if the employee sells the stock within one year of the exercise date, then any gain is taxed as ordinary income. An ISO plan typically requires an employee to exercise any vested stock options within 90 days of that person's voluntary or involuntary termination of employment.

The reduced tax impact associated with waiting until two years have passed from the date of option grant presents a risk to the employee that the value of the related stock will decline in the interim, thereby offsetting the reduced long-term capital gain tax rate achieved at the end of this period. To mitigate the potential loss in stock value, one can make a Section 83(b) election to recognize taxable income on the purchase

price of the stock within 30 days following the date when an option is exercised and withhold taxes at the ordinary income tax rate at that time. The employee will not recognize any additional income with respect to the purchased shares until they are sold or otherwise transferred in a taxable transaction, and the additional gain recognized at that time will be taxed at the long-term capital gains rate. It is reasonable to make the Section 83(b) election if the amount of income reported at the time of the election is small and the potential price growth of the stock is significant. However, it is not reasonable to take the election if there is a combination of high reportable income at the time of election (resulting in a large tax payment) and a minimal chance of growth in the stock price, or if the company can forfeit the options. The Section 83(b) election is not available to holders of options under an NSO plan.

The alternative minimum tax (AMT) must also be considered when dealing with an ISO plan. In essence, the AMT requires that an employee pay tax on the difference between the exercise price and the stock price at the time when an option is exercised, even if the stock is not sold at that time. This can result in a severe cash shortfall for the employee, who may only be able to pay the related taxes by selling the stock. This is a particular problem if the value of the shares subsequently drops, since there is now no source of high-priced stock that can be converted into cash in order to pay the required taxes. This problem arises frequently in cases where a company has just gone public, but employees are restricted from selling their shares for some time after the IPO date and run the risk of losing stock value during that interval. Establishing the amount of the gain reportable under AMT rules is especially difficult if a company's stock is not publicly held, since there is no clear consensus on the value of the stock. In this case, the IRS will use the value of the per-share price at which the last round of funding was concluded. When the stock is eventually sold, an AMT credit can be charged against the reported gain, but there can be a significant cash shortfall in the meantime. In order to avoid this situation, an employee could choose to exercise options at the point when the estimated value of company shares is quite low, thereby reducing the AMT payment; however, the employee must now find the cash to pay for the stock that he or she has just purchased, and also runs the risk that the shares will not increase in value and might become worthless.

An ISO plan is valid only if it follows these rules:

- *Incentive stock options can be issued only to employees.* A person must have been working for the employer at all times during the period that begins on the date of grant and ends on the day three months before the date when the option is exercised.
- *The option term cannot exceed ten years from the date of the grant.* The option term is only five years in the case of an option granted to an employee who, at the time the option is granted, owns stock that has more than 10 percent of the total combined voting power of all classes of stock of the employer.
- *The option price at the time it is granted is not less than the fair market value of the stock.* However, it must be 110 percent of the fair market value in the case of an option granted to an employee who, at the time the option is granted, owns stock that has

more than 10 percent of the total combined voting power of all classes of stock of the employer.

- *The total value of all options that can be exercised by any one employee in one year is limited to $100,000.* Any amounts exercised that exceed $100,000 will be treated as a nonqualified stock option (to be covered shortly).
- *The options cannot be transferred by the employee.* Moreover, they can only be exercised during the employee's lifetime.

If the options granted do not include these provisions, or are granted to individuals who are not employees under the preceding definition, then the options must be characterized as nonqualified stock options.

A *nonqualified stock option* is not given any favorable tax treatment under the Internal Revenue Code (hence the name). It is also referred to as a *nonstatutory stock option*. The recipient of an NSO does not owe any tax on the date when options are granted, unless the options are traded on a public exchange. In that case, the options can be traded at once for value, and so tax will be recognized on the fair market value of the options on the public exchange as of the grant date. An NSO option will be taxed when it is exercised, based on the difference between the option price and the fair market value of the stock on that day. The resulting gain will be taxed as ordinary income. If the stock appreciates in value after the exercise date, then the incremental gain is taxable at the capital gains rate.

There are no rules governing an NSO, so the option price can be lower than the fair market value of the stock on the grant date. The option price can also be set substantially higher than the current fair market value at the grant date, which is called a *premium grant*. It is also possible to issue *escalating price options*, which use a sliding scale for the option price that changes in concert with a peer group index, thereby stripping away the impact of broad changes in the stock market and forcing the company to outperform the stock market in order to achieve any profit from granted stock options. Also, a *heavenly parachute* stock option can be created that allows a deceased option holder's estate up to three years in which to exercise his or her options.

Company management should be aware of the impact of both ISO and NSO plans on the company, not just on employees. A company receives no tax deduction on a stock-option transaction if it uses an ISO plan. However, if it uses an NSO plan, the company will receive a tax deduction equal to the amount of the income that the employee must recognize. If a company does not expect to have any taxable income during the stock-option period, then it will receive no immediate value from having a tax deduction (though the deduction can be carried forward to offset income in future years), and so would be more inclined to use an ISO plan. This is a particularly common approach for companies that have not gone public. By contrast, publicly held companies, which are generally more profitable and must search for tax deductions, will be more inclined to sponsor an NSO plan. Research has shown that most employees who are granted either type of option will exercise it as soon as possible, which essentially converts the tax impact of the ISO plan into an NSO plan. For this reason also, many companies prefer to use NSO plans.

RESTRICTED STOCK UNITS

A restricted stock unit (RSU) is an agreement to issue stock to an employee at a later date at no cost to the employee. The shares are not considered to be issued until actual distribution, so the employee earns no income until the distribution date, at which point the employee pays income taxes on the value received on the distribution date, less any amount paid for the stock.

The company determines the value of the underlying stock as of the grant date and charges the amount ratably to expense over the vesting period. If the employee leaves the company before the vesting date, the RSU agreement is typically canceled, and the company can reverse any expense accrued through that date.

During the vesting period, the employee who is entitled to receive stock under the RSU agreement does not yet own the stock, and so does not have voting rights or dividends related to that stock.

BONUS SLIDING SCALE

A reasonably progressive budgeting model will include a direct link into the corporate bonus plan, with staff being paid bonuses based on their achievement of certain goals. Though the intention is good—to create incentives to achieve the budget—it actually tends to create more problems than it solves.

One problem is that if employees realize that they will fall short of their bonus targets, they will be more likely to hoard their resources or possible sales for the next period when they will have a better opportunity to achieve better performance and be paid a bonus. The result is wild swings in corporate performance from period to period as employees cycle through the hoard-to-splurge cycle.

Another problem is that if the bonus target cannot be attained by normal means, employees will stretch or break the accounting rules in a variety of ways to achieve the target. By doing so, a lower level of ethics is introduced into the company, while also likely saddling the company with a variety of accounting problems that must be addressed in future periods.

EXAMPLE

Xenophon Guides, a publisher of Turkish travel guidebooks, issues 10,000 restricted stock units (RSUs) to Mr. Cyrus. The RSUs vest at the end of two years. On the grant date, the RSUs are trading at $4.80, so the grant has a value of $48,000. Xenophon accordingly charges $2,000 to compensation expense in each month of the vesting period.

After two years, Mr. Cyrus completes the vesting period, and Xenophon issues 10,000 shares of Xenophon stock to him. On the distribution date, the shares are trading for $7 each, so Mr. Cyrus owes income taxes on that date on $70,000. ■

The solution is to link the budget to a sliding performance scale that contains no ''hard'' performance goals. The best example of the sliding bonus scale is what it is *not*—there are no specific goals at which the bonus target suddenly increases in size. Instead, the bonus is a constant percentage of the goal, such as 1 percent of sales or 5 percent of net after-tax profits. Also, there should be no upper boundary to the sliding scale, which would present employees with the disincentive to stop performing after they have reached a maximum bonus level. Similarly, there should theoretically be no lower limit to the bonus either, though it is more common to see a baseline level that is derived from the corporate breakeven point, on the grounds that employees must at least ensure that the company does not lose money. The sliding-scale approach also makes it much easier to budget for the bonus expense at various activity levels, rather than trying to budget for the more common all-or-nothing bonus payment.

CUT BENEFIT COSTS WITH A CAPTIVE INSURANCE COMPANY

It is possible to reduce employee benefit costs by 5 to 10 percent by creating a captive insurance company. The basic process is to have a regular insurance company underwrite all of the company's benefits-related insurance (LTD, STD, medical, and so on) for a fee, while the captive can either bear all of the risk or apportion some of it elsewhere by buying reinsurance. The cost savings comes from the elimination of third-party profits and overhead charges. Also, since this creates a direct correlation between insurance costs and insurance claims, the company will probably become highly interested in controlling its insurance claim experience.

To legally operate a captive for this purpose, the Department of Labor must issue an exemption from some aspects of the ERISA legislation, which usually calls for clear evidence that employee benefits increase or costs decrease as a result of using the captive (though this does not have to take away all of the savings!). Also, the captive must be licensed in the United States (about half of the states have enacted laws beneficial to captives, so there are plenty of choices), have at least one year of audited financial statements, and be fronted by an insurance company with at least an ''A'' rating.

Operating a captive is expensive; expect to pay an absolute minimum of $100,000 to set one up and a minimum of another $50,000 a year to operate it. Thus, savings will only begin to occur for larger companies whose current insurance expense exceeds $1 million.

SUMMARY

This chapter covered only those employee-compensation issues with which the CFO tends to become involved. Other issues, such as determining pay scales for employees, dealing with labor unions, and creating performance bonus plans, can usually be safely delegated to the human resource department, whereas the topics covered here are more likely to be the responsibility of the CFO and might have to be presented by that person to the board of directors.

CHAPTER TWENTY-FOUR

24 Bankruptcy

ALTHOUGH NO CFO EVER wants to be involved in a corporate bankruptcy, circumstances may dictate otherwise. The road through the bankruptcy process absolutely requires the best possible legal counsel; this person can advise on a wide range of possible strategies to take in dealing with creditors and the bankruptcy court and the myriad of claims and counterclaims that can arise over the (sometimes) multiyear course of a bankruptcy case. Before calling in legal counsel, the CFO should read this chapter to gain a basic understanding of the main players in the bankruptcy drama, how the bankruptcy process works, creditor priorities, tax issues, and other related issues.

APPLICABLE BANKRUPTCY LAWS

All applicable laws related to bankruptcy are issued by the federal government and are contained within Title 11 of the U.S. Code, which is referred to as the Bankruptcy Code. Chapter 3 of the Code describes how to file for bankruptcy, while Chapter 5 covers debtor and creditor relations, Chapter 7 describes a corporate liquidation, and Chapter 11 itemizes the steps involved in a corporate reorganization.

A Chapter 7 liquidation is a relatively passive affair for the CFO, who essentially watches while a court-appointed trustee sells off business assets and distributes the resulting cash to creditors and stockholders in a carefully prescribed order of payment (see the ''Creditor and Shareholder Payment Priorities'' section). A Chapter 11 reorganization generally allows management to remain in control while the company negotiates with its creditors to settle outstanding claims.

The Code allows any company to file for bankruptcy at any time. There is no requirement to have a negative net worth, only that a company have a place of business in the United States.

The New CFO Financial Leadership Manual, Third Edition
by Steven M. Bragg

EXHIBIT 24.1 Example of a Board's Bankruptcy Resolution

WHEREAS, the Board of Directors of the Corporation has determined that the Corporation must file a voluntary Chapter 11 petition in bankruptcy court;

BE IT RESOLVED, that the Corporation's officers and any member of its law firm _____are hereby authorized and directed to deliver all documents needed to effect the filing of a Chapter 11 petition on behalf of the Corporation;

RESOLVED IN ADDITION, that the Corporation's officers are hereby authorized and directed to represent the Corporation in all bankruptcy proceedings, and take all necessary actions on behalf of the Corporation in connection with this petition;

RESOLVED IN ADDITION, that any actions taken by the Corporation's officers prior to the date of this resolution in regard to the bankruptcy petition are hereby approved by the Corporation;

RESOLVED IN ADDITION, that this consent, when signed by the Board members, shall be effective as of [date].

The board of directors is responsible for making the decision to voluntarily enter bankruptcy. This group must approve a motion, such as the one noted in Exhibit 24.1, which should be retained in the corporate minute book. Alternatively, any group of creditors can jointly file an involuntary bankruptcy petition, thereby forcing a company into bankruptcy against its will.

PLAYERS IN THE BANKRUPTCY DRAMA

A company files a bankruptcy petition with the local *bankruptcy court*. This court is a division of the U.S. District Court, so there is at least one bankruptcy court in each state to mirror the organizational structure of the district court system. There are no juries in the bankruptcy court—instead, all decisions are made by the *bankruptcy judge*. Though bankruptcy cases are assigned to individual judges on a random basis, certain district courts have a reputation for containing a high proportion of business-friendly judges, so companies may attempt to file for bankruptcy in those districts in order to increase their odds of being assigned a ''good'' judge.

An *examiner* may be assigned by the bankruptcy court to conduct an investigation of a company's finances. This is usually an outside audit firm that does not have previous ties to the company. An examiner must be appointed if the total amount of company debt exceeds $5 million, and is frequently appointed if there is evidence of extensive insider transactions, fraud, or incompetence.

If the company files for liquidation under Chapter 7 of the Code, the court will assign a *trustee* to oversee the liquidation. A trustee is usually not assigned to a Chapter 11 reorganization, since the current management team is assumed to be running the reorganization process. However, a trustee will be assigned to a Chapter 11 reorganization if there is proof of fraud or gross incompetence by the existing management team. The trustee's fees are paid from the assets of the bankrupt company.

If a trustee is not assigned to a Chapter 11 reorganization, then the *existing management team* is assigned to manage the bankruptcy. At this point, the role of

the management team shifts from attaining a high return on equity for shareholders to ensuring that creditors are paid back to the greatest extent possible—essentially, the management team's boss has changed to a new group of entities. If the management team continues to make decisions that place shareholders ahead of creditors, they stand a good chance of being replaced by the bankruptcy court with a trustee. The management team is obligated to work with creditors to devise a repayment plan that is acceptable to all key parties, while also keeping the bankruptcy court informed of its progress with monthly operating reports.

The *secured creditors* and the *unsecured creditors committee* must work with the management team or trustee in devising a plan of reorganization. The secured creditors will be primarily interested in obtaining the full value from any collateral that has been assigned to them. Usually, only the seven largest unsecured creditors are included in the unsecured creditors committee, since the inclusion of all creditors would make for a most unwieldy group. Members of this committee are supposed to represent all other unsecured creditors before the bankruptcy court.

Finally, there are a number of advisers that a company or the bankruptcy court may employ. *Lawyers* who specialize in bankruptcy proceedings should be asked to advise on the timing, location, and structure of the bankruptcy filing at the earliest possible date. As previously noted, *auditors* may be called in by the court to examine the corporate books, while *accountants* may be hired by the company to prepare for the auditors' arrival. It is also useful to hire a *public relations* firm that can put a favorable spin on the bankruptcy proceedings with a company's business partners. If creditors are wary of the management team's ability to return a company to solvency, they may insist on the hiring of a *turnaround specialist* who either fills the president position or becomes an adviser to that person. *Appraisers* may also be employed to determine the market value of secured creditor collateral, as well as the overall value of the company as a going concern. Finally, in a worst-case scenario, an *auction house* may be brought in to liquidate all corporate assets.

CREDITOR AND SHAREHOLDER PAYMENT PRIORITIES

The Bankruptcy Code lists a specific order in which bankruptcy claims will be paid:

1. *Secured claims.* A creditor who has obtained collateral against a company liability will be paid up to the liquidation value of the collateral. Any excess amount owed will then be shifted to the unsecured creditor claims category.
2. *Administration costs related to the bankruptcy.* Any legal, trustee, or other advisory fees related to the bankruptcy.
3. *Employee payroll.* Unpaid wage and salary expenses incurred within 90 days of the bankruptcy filing date must be paid next.
4. *Taxes.* Any unpaid taxes owed to government entities, which can include corporate income, sales, payroll, and personal property taxes, must be paid.
5. *Unsecured creditor claims.* All claims not previously specified that are not secured by any form of collateral. This tends to make up the bulk of creditor claims in a

bankruptcy. Distributions to this group are made on a pro rata basis if there are not sufficient funds available to pay off 100 percent of all claims.

6. *Shareholders.* Any equity holder will only be paid if the claims of all entities previously noted on this list have been satisfied, which frequently leaves nothing at all. Also, any shareholder who obtains a favorable court judgment in relation to a securities fraud claim will have the amount of the judgment clustered into this category—which means that the judgment may never be paid.

BANKRUPTCY SEQUENCE OF EVENTS

If a company decides to enter Chapter 11 bankruptcy, it must complete a petition to the bankruptcy court that is accompanied by a board-approved bankruptcy resolution (as described earlier in Exhibit 24.1). The first order of business when filing this petition is determining the best court to which it will be submitted. Though all bankruptcy judges operate under the same guidelines and therefore should issue the same opinions when presented with the same facts, this is not quite the case. Some bankruptcy judges are considered to be more friendly to debtors, while others may be swayed by the potential loss of jobs if a company has a large number of employees working near the court. Thus, a company incorporated in Delaware may elect to file for bankruptcy there, due to the business-friendly reputation of its judges, but could instead file for bankruptcy in the district where its largest base of employees is located. Other reasons for picking a specific venue are the familiarity of the company's counsel with a specific court, or simply the expense of having to frequently travel to a distant venue for bankruptcy hearings.

The filing itself requires a great deal of manual labor, though some of its components can be delayed a number of days after the initial bankruptcy filing. The most labor-intensive parts of the filing are as follows:

- *Schedule of assets and liabilities.* This is essentially a very detailed balance sheet that itemizes all types of property (such as individual accounts receivable and all fixed assets), as well as listings of all creditors having secured and unsecured claims, and the amounts of those claims. It is very important to note whether each claim is disputed, uncertain in amount, or contingent on some event. By doing so, all possible creditors will be added to the court's notification list of bankruptcy actions, so they cannot claim they were never notified. This keeps the company from dealing with additional undocumented claims once it departs bankruptcy protection. These schedules also include lists of unexpired contracts and co-debtors. A company will almost certainly never arrive at a complete list of all assets and liabilities on its first filing of these schedules with the bankruptcy court, but it can file updated schedules at a later date as more information becomes available.
- *Statement of financial affairs.* This is a very detailed income statement for the year-to-date and the two preceding years. Of particular interest is an additional schedule detailing all payments to creditors in the 90 days immediately preceding the bankruptcy filing, which is used to determine if the company is entitled to retrieve

payments made to creditors. Another schedule itemizes all gifts paid out within the past year, which can be used to find any fraudulent transfers that may be recovered by the company.

The company is officially in bankruptcy as of the time when the filing is date-stamped by a clerk of the court. As of this date and time, creditors are barred from taking further action against the company to collect funds or other assets owed to them, which includes collection calls, taking possession of collateral, lien enforcement, canceling insurance, withholding tax refunds, initiating lawsuits, or setting off outstanding debtor debts against debts by them to the company. However, outside entities can still proceed with criminal prosecution, and landlords can evict debtors if the terms of their leases expired prior to the bankruptcy filing.

The company must also file a petition for the retention of professionals to assist it in the bankruptcy case. This can include lawyers, accountants, special managers to assist in operations, appraisers, and a public relations firm. The petition may include a provision to pay these professionals for any assistance already given to the company prior to the bankruptcy petition.

Once the bankruptcy petition has been filed, the first order of business is to apply for *first day orders*. These are court orders for the company to pay preexisting claims by employees (primarily wages and salaries) and key suppliers, so there is no significant short-term disruption in company business in the early days of the bankruptcy. Though employee wages and salaries are routinely allowed in first day orders, supplier payments will only be allowed if the suppliers are difficult to replace or would cause major disruption to the business.

The court must also confirm the result of negotiations the company will undertake with any utilities. A utility is required by law to continue providing services to a bankrupt company for only the first 20 days of its bankruptcy, after which it can cut off service if the company cannot provide additional assurance of payment, such as a large deposit. Given the need for continued service by such suppliers, the court is typically most willing to approve of any reasonable arrangements that will provide utilities with some assurance of payment.

The court may also confirm retention bonuses to key personnel, which are especially important for those who have key business knowledge or contacts and whose departure might result in a major business disruption. Courts may also confirm modest severance packages for key personnel, but are unlikely to do so for exorbitant ''golden parachute'' deals.

The next key step in the bankruptcy process is to secure sufficient financing to keep the company operating. Though it may be possible to carefully manage working capital to such an extent that no other financing is needed, a company should at least obtain a line of credit to tide it over any unforeseen cash-flow dips. The simplest approach is to continue an existing line of credit, though this will certainly require additional negotiations with the lender, who may want additional collateral, frequent operational reports, periodic loan payments, and considerable input into an operating budget. If a new lender must be found to extend a line of credit, then the company can offer it collateral, as well as a ''super priority'' over other administrative expenses, so

that the lender will be paid in full prior to any other administrative expense claims. In rare cases, it is also possible to offer ''super priority'' to a lender on assets that have already been encumbered by other liens. This last approach only works if the company can prove that the amount of collateral encumbered by existing creditors exceeds the value of their claims, in which case the difference can be offered (with court approval) to the new lender.

With financing taken care of, the company must then stabilize its operations. A key area to address is maintaining reasonable credit terms with suppliers, whose first knee-jerk reaction to the bankruptcy filing will be to switch over to cash-on-delivery (COD) payment terms. This can be done by keeping suppliers appraised of the progress of the bankruptcy case, as well as by following through on payment commitments on an ongoing basis. A good approach is to negotiate good payment terms with suppliers subsequent to the bankruptcy filing in exchange for attempting to convince the court that the suppliers should be paid in full as part of the first day orders. Even if a supplier does switch to COD terms, the CFO can attempt to reestablish credit in small amounts and on short payment intervals, and then gradually improve these terms by proving the company's ability to follow through on the reduced terms.

Operational stabilization activities do not require court approval, though management can have its collective hand slapped by the court if it engages in activities that fall outside the bounds of normal business activities, such as the sale of assets or any activity that can be perceived as paying off a creditor's prebankruptcy claims. The unsecured creditors committee will be rightfully concerned about the amount of asset sales, since they are a source of funds that can be used to pay off the creditor's claims. The court will want to obtain the best possible price for any assets that management wants to sell, so it may require considerable shopping around among potential buyers in order to secure a good sale price.

As the company proceeds through the various stages of the bankruptcy, it must also file a monthly operating report with the bankruptcy court. This report is generally due 15 days after the end of the month, and should include detailed financial statements as well as such supporting documents as bank statements, accounts receivable, and accounts payable aging reports. The standard contents of such a report are as follows:

- Current month receipts and disbursements matrix, by bank account
- Accounts receivable aging
- Accounts payable aging
- Cash disbursements report
- Balance sheet matrix, by subsidiary
- Postpetition income statement, by subsidiary
- Year-to-date income statement, prepetition by subsidiary
- Year-to-date income statement, postpetition by subsidiary
- Schedule of additions to and deletions from fixed assets
- Schedule of payments to insiders and professionals
- Schedule of changes in employee headcount
- Schedule of current insurance policies and periods of coverage
- Discussion of progress toward the filing of a plan of reorganization

Relatively early in the bankruptcy process, the company should ask the court to issue a *bar date order*. This order states that creditors must file a claim by a specific date or be unable to file a claim thereafter. By publicizing this court order extensively with all creditors (a good idea is to send it to everyone in the supplier address database, even if there is no evidence of a claim), a company can ensure that it is at minimal risk of having any additional claims arise after the bankruptcy case has been completed.

If a company is publicly held, it must also notify the Securities and Exchange Commission (SEC) of the intended filing, as well as of the progress of the bankruptcy case at regular intervals. These regular notifications may be accompanied by ongoing discussions with the SEC about the potential delisting of the company's stock and securities. Also, the SEC may wish to conduct its own investigation into the reasons for the bankruptcy filing, since there may be charges of fraud from investors to which it may wish to respond, or it may wish to file charges of its own.

In addition to the SEC, a publicly held company may find itself negotiating with the stock exchange where its shares are listed for sale. An exchange usually has a rule that a company's stock will be delisted if its price drops below $1 for a period of at least 90 days, though the exchanges typically offer prolonged grace periods while companies find a way to increase the price (such as through a reverse stock split).

A key benefit to a bankrupt entity is its legal right to review all executory contracts and unexpired leases, and either accept or reject them. An executory contract is one where there is enough unfinished activity related to the contract by both parties that if either party were to halt its activities, the other party could claim a breach of contract. A lease is any series of ongoing payments in exchange for the use of property, such as a copier, vehicle, or facility. These two contract definitions will address many types of contracts, leaving a company with an exceptional ability to reconsider a large proportion of its legal agreements, which can result in a significant reduction in its liabilities.

Though a company has the right to accept or reject these types of contracts, it should take its time in doing so, until it is certain of having a viable business plan that can reasonably be expected to take it out of bankruptcy. Otherwise, all payments under an accepted contract will fall into the administrative expense category, where they will be ranked ahead of unsecured creditor claims (which is why the unsecured creditors committee tends to protest contract acceptances). The only downside of waiting to confirm a contract is that the company is still obligated to make payments under the contract's terms while the decision is being made. In short, it is best to string along any contracts that management is fairly sure it *will* confirm, and cancel any that it clearly *does not* want.

If management chooses to reject a contract, the remaining payments under the contract do not disappear—instead, they are shifted into unsecured creditor claims, where they may have a significantly lower chance of being paid. Since some leases have extremely long terms, the total amount of these rejected payments can be so large that they are a substantial proportion of all unsecured claims, thereby reducing the value of all other claims in cases where the amount of eventual payout by the company is limited. To prevent a lessor from being in such a dominant payment position, the bankruptcy law restricts lease claims to the lesser of 15 percent of all remaining rent payments or one year's rent.

If management chooses to accept a contract, the other party may choose to breach it, using the bankruptcy as an excuse. If so, management can offer to place a large deposit with the other party or take some other similar action in order to give it assurances of being able to complete the contract.

Company management is allowed four months from the bankruptcy petition date to come up with a plan of reorganization, and another two months to have it approved by the court. These time intervals can be extended, sometimes for many additional months, as long as the management team is clearly attempting in good faith to complete a plan. If it does not do so, other parties are allowed to file reorganization plans instead, essentially working around the company.

Devising a reorganization plan can be exceedingly difficult, and certainly time consuming, because the company must work with the various creditor groups and equity holders in order to gain general agreement to the plan. The cause of the difficulty is the differing objectives of the various groups. For example, secured creditors are primarily concerned with retaining the full value of their collateral and thereby gaining full payment of their claims. Alternatively, ''vulture'' investors, who have bought the company's debt at a steep discount, are more likely to want a portion of company stock so they can gain operating control. Unsecured creditors generally want a cash payment, even if only for a small percentage of their claims, while shareholders are happy to retain even a small amount of equity. Clearly, gaining any sort of agreement from this diverse group can be quite a chore, and usually only occurs after negotiations have gone on for many months.

The reorganization plan is likely be a variation on one or a combination of several payment options:

- *Long-term cash payments.* Secured lenders are the chief beneficiaries, since it may be years before the company can generate enough cash to pay them off and finally get to the unsecured creditor group. Shareholders can do well under this approach, and may team with the secured shareholders in approving it.
- *Asset liquidation.* Though not necessarily a complete liquidation of the business, this approach is designed to pay off creditors in the near term, leaving a much smaller company. Both the secured and unsecured creditors are likely to support this approach.
- *Debt or capital infusion.* This approach works where there is a general recognition that the company will be of the most value to all parties if it continues to exist to pay off its debts. However, adding equity will dilute the shareholders and adding debt will introduce new secured creditors, so this approach is not highly favored by anyone.
- *Convert debt to equity.* This approach is used when there is no source of cash with which to pay off creditors. Shareholders may be diluted in the extreme, so they will not vote for it. Creditors only use this option as a last resort, since they will not receive any cash payment.

No matter what form of payment is used to satisfy creditors, the plan will follow the same general structure. First, the plan will describe how the various creditors are

classified in voting blocks. Similar types of claims are clustered together for voting purposes, so a secured creditor might be grouped into a secured creditor voting block and also in an unsecured creditor voting block to the extent that any of its claim is not supported by collateral. The next section describes how each class of creditor will be treated. For example, secured creditors will be paid in full, while unsecured creditors will receive one-fourth of the amounts owed to them. The plan next describes exactly how the management team proposes to accomplish this payout, which may include a complete operational budget as well as an organizational restructuring, securing new loans, merging with another entity, and so on. There is also a section that specifies exactly which leases and contracts the company has decided to either accept or reject, so there is a formal record in the event that another party brings suit over the issue at a later date.

Next, the management team creates an executive summary of the reorganization plan, called a disclosure statement. This statement is issued to creditors and is used to convince them to vote in favor of the reorganization plan. The contents of the disclosure statement are quite similar to those of an offering memorandum that one would create for an equity offering, as is described in Chapter 14, ''Obtaining Equity Financing.''

Following approval by the court of the disclosure statement, the company then sends it, along with a voting ballot, to those creditors whose claims are impaired (i.e., their claims are unlikely to be paid off in full). The package is not sent to those whose claims will be paid in full (e.g., a secured creditor), since the court assumes that they will approve the plan. Creditors will be divided into classes for voting purposes. A class is construed as a group of creditors whose claims will be paid off in the same manner. For example, one group may be offered 30 cents on the dollar, while another group may be offered stock in the company in exchange for the amounts owed to them. In order for the plan to be approved by the creditors, at least one-half of all voting creditors in each class must vote in favor of it, as well as two-thirds of the dollar value of all claims being voted within that class. This is called the *one-half/two-thirds requirement*. For example, if there are 50 creditors within a class and only 8 of them vote, then the one-half/two-thirds rule will only apply to those 8 votes. Thus, a very small fraction of just one class of creditors could potentially have control over whether a plan is accepted.

With the voting completed, the plan will then go to the court for final approval. There are a number of regulatory tests that the court will apply to the plan prior to final approval. Of particular interest to the management team is a ''best interests of creditors'' test, which must show that the creditors will be better off through the approval of the presented plan than they would be if the company simply liquidated. The management team must have this concept firmly in mind when it first drafts the reorganization plan, so the plan is not ultimately rejected by the court.

If all creditor classes have approved of the plan and all regulatory hurdles have been passed, then the court is likely to approve the plan of reorganization. However, if a creditor class has rejected the plan, the management team has the option of requesting that the plan be accepted by the court anyway, which is called a *cramdown*. Under this scenario, at least one creditor class must have approved of the plan, and the management team must provide for full payment of the claims of the creditor classes that have rejected it. This typically means that the claims of any classes having a lower priority

than those of the rejecting class will not be paid. In particular, equity holders, who have the lowest priority, will almost certainly receive nothing. In short, a cramdown can only be accomplished by probably eliminating the equity stakes of the original shareholders.

Once the plan is approved, the court officially discharges the company from all the debts that the reorganization plan does not require it to pay. If the company later goes into bankruptcy again, it will only owe creditors for the reduced amount of the debts that were itemized in the reorganization plan.

Given the large number of steps required for a company to complete before a discharge can be obtained from a bankruptcy court, it is obvious that the cost of professional fees through this lengthy process will be substantial, and may consume a large proportion of the estate. Consequently, the management team should be careful not to wait too long before entering bankruptcy protection, while it still has enough funds on hand to pay the professionals and enough money left over to see it through the process. This means that entering bankruptcy is not a last-minute affair, but rather one that is discussed well in advance with legal counsel regarding the appropriate timing of the event.

TAX LIABILITIES IN A BANKRUPTCY

Taxes are not usually discharged as a result of a bankruptcy filing. Most prepetition tax debts are classified for payment purposes within the creditor and shareholder payment priority list. They are as follows:

- Income taxes for years prior to the bankruptcy
- Income taxes assessed within 240 days prior to the bankruptcy filing
- Income taxes not assessed, but assessable as of the petition date
- Withholding taxes for which the company is liable
- The employer's share of employment taxes on wages
- Excise taxes on any transactions occurring prior to the bankruptcy date

If a company files for liquidation under Chapter 7 of the bankruptcy law, then these taxes will be paid out of whatever company assets are left, once the claims of creditors with a higher priority have been fulfilled. If the entity is under Chapter 11 bankruptcy protection, then it can pay these taxes to the IRS over six years; this will include an interest assessment.

Any taxes that arise during the period when a company is in bankruptcy are considered to be ongoing administrative expenses, and so will be paid at once.

If a company is late in paying the state unemployment tax, it is normally restricted to making a 90 percent deduction of the amount paid into the federal unemployment fund against the state tax. However, this penalty is waived in the case of a bankrupt company, so that the full amount of the federal unemployment payment can still be taken against the state unemployment tax.

In some cases, the amount of debt canceled while in bankruptcy is considered to be taxable income to the bankrupt entity. If so, the amount of the debt reduction can be

used to reduce the basis of any depreciable property (but not more than the total basis of property held, less total liabilities held directly after the debt cancellation). As an alternative, it can be used to (1) offset any net operating loss for the year in which the debt cancellation took place, (2) offset any carryovers of amounts normally used to calculate the general business credit, (3) offset any minimum tax credit, (4) offset any net capital loss and any capital loss carryover, and then (5) offset any passive activity losses. These offsets can be dollar-for-dollar for canceled debt, except for the reduction of *credit* carryovers, which can be reduced at the rate of 33-1/3 cents for every dollar of canceled debt.

A special concern to corporate officers is the payment of payroll withholding taxes. These taxes are held in trust by the company until they are turned over to the government, and so are not considered to be part of the bankrupt company and must still be paid in full even after the bankruptcy filing. The government can bypass the company and collect these funds from the company's officers (which can include anyone who signs the payroll checks, even though this person may not be an officer!). Thus, to avoid personal liability, officers must be sure to remit withheld taxes when due, both before and during a bankruptcy proceeding.

SPECIAL BANKRUPTCY RULES

A company is authorized (and required) to collect payments made to creditors in the 90 days prior to the bankruptcy filing that constitute a larger payment than the creditor would have received if it had been reimbursed with other unsecured creditors subsequent to the bankruptcy. An unsecured creditor who is sued for repayment in this manner then has its claim clumped in with all other unsecured creditors, and will be paid on a pro rata basis along with the others. This rule does not include secured creditors, since they would have been paid the same amount if they had waited until after the bankruptcy for reimbursement. The 90-day period used for this rule is extended to a full year for cases where payments were made to company insiders.

Part of the process of operational stabilization is a review of all liens on company property. If a creditor has publicly registered a notice with a state official, such as the secretary of state, that it has a lien on company property, then the company is obligated to acknowledge the lien and categorize the creditor as a secured creditor. This person is much more likely to receive full reimbursement for all collateralized debts. However, if the creditor has not publicly registered such a notice, then any lien it has on company property will be stripped away, leaving the creditor no better off for reimbursement purposes than the other unsecured creditors. This rule applies even if company management *knows* that the creditor has a lien on company assets.

One crucial instance where creditors are not barred from further collection activity is when a secured creditor claims that further use by the company of its collateral will gradually diminish the amount of its security interest. For example, a loan that is collateralized by a company's inventory will gradually become more at risk of not being repaid if the level of inventory drops subsequent to the bankruptcy filing. In this case, the creditor can require the company to replace the diminished collateral with other forms

of collateral by cash payments that reduce the amount of debt or by some other negotiated solution.

BANKRUPTCY ACT OF 2005

The Bankruptcy Act of 2005 was primarily intended to modify personal bankruptcy situations, but also contains several provisions that have a strong impact on corporate bankruptcies. First, a company entering bankruptcy must propose a reorganization plan within 180 days, after which creditors can propose a plan. Second, a company has a maximum of 210 days in which to assume or reject a lease. Third, retention pay for executives is capped at 10 times the average amount earned by company employees, and such retention pay can only be granted if an executive has proof of a job offer that pays at least as much as his or her current compensation. Finally, suppliers who are not paid for goods they shipped to the company within 20 days of its bankruptcy filing can obtain a priority claim on those goods, requiring them to be paid in full before a court accepts a reorganization plan. Suppliers can also reclaim any unpaid goods that were shipped to the company within 45 days of its bankruptcy filing.

In short, this law clearly puts more power in the hands of creditors, while also making it more difficult for companies to reorganize themselves in bankruptcy. Instead, it is now more likely for companies to liquidate themselves, since they are more likely to lose key executives, make rushed decisions on lease retentions, and lose key inventory to suppliers.

ALTERNATIVES TO BANKRUPTCY

Bankruptcy is an exceedingly expensive undertaking, so the CFO may want to consider alternatives prior to taking the plunge. One option is to ask creditors for *extensions* on payments. Creditors who grant this request may ask for collateral in return, which may cause a chain reaction of additional negotiations with other entities that already have senior collateral positions on assets. The CFO may wish to deal with creditors individually in regard to extensions, in case some can be persuaded to accept longer payment terms than others. If creditors band together into a creditor's committee, then a standard repayment period is the more likely result.

A slightly more drastic alternative (for creditors) is for the CFO to approach them about a *composition*, which is their acceptance of partial payment on debts owed. Though creditors will obviously not be paid in full, they may accept this alternative over the company's bankruptcy, on the grounds that they will gain a greater distribution than would be the case in bankruptcy. This approach is least acceptable to secured creditors, who may stand to gain full payment on debts owed if they wait for bankruptcy proceedings, on the assumption that the resale value of their attached collateral at least matches the amounts owed to them.

Creditors may require some representation in management affairs or on the board of directors in exchange for these reductions or delays in payments. Though the CFO may

experience some loss of control, this is typically well worth the reduction in expenses associated with a bankruptcy.

SUMMARY

The CFO should come away from this chapter having learned two key points. First, bankruptcy can be very expensive, due to the number of bankruptcy professionals who must be employed. Second, the number of steps and outside parties involved in a bankruptcy make this a very long process to successfully conclude. For both of these reasons, it is critically important that a company enter bankruptcy with enough cash to see it through the process. This means that a bankruptcy should be planned well in advance, perhaps as one of a variety of strategic alternatives, and entered as soon as it becomes the most viable approach to resolving business issues. Conversely, the worst way to enter bankruptcy is after having unsuccessfully tried all other alternatives, used up all cash, and obtained (and exhausted) every possible form of credit. This latter approach nearly always results in a company's eventual liquidation rather than its successful emergence from bankruptcy at some point in the future.

APPENDIX A

New CFO Checklist

A PERSON WHO HAS BEEN newly hired into the CFO position may feel overwhelmed by the vast number of tasks to be completed, and may wonder where to begin. The attached list gives some guidance about the priority of tasks.

The first few priorities are heavily stacked in favor of creating and improving the accuracy of a cash forecasting system, which requires a detailed knowledge of payables, receivables, debt payments, contracts, and capital expenditures. The new CFO must have a firm grasp of this information before proceeding to any other steps, since a company without cash will not survive long enough for the CFO to address anything else.

A key priority falling immediately after the cash forecasting system is a detailed review of all current contracts. The CFO should read these personally, with the objective of finding any contract terms that have a potential to put the company in jeopardy or at least have a significant downward impact on its profitability.

The next group of priorities involves the establishment of measurement systems, so the CFO can see what problems are likely to arise and how this can impact the priority of his or her future activities.

Next in line is a complete review of the CFO staff's capabilities, work schedules, and training requirements. Though an inexperienced CFO might be tempted to advance this task to the topmost priority, it is listed lower here because staff development is more of a mid-range to long-term goal. It has little impact on the very short-term performance of the CFO's assigned areas, whereas the preceding items must be completed very quickly, so the CFO can see which areas are at risk and require the most immediate attention.

Activities following the staff development priorities can be shifted in priority, depending on the company-specific situation. However, the CFO should follow the exact priorities through and including the staff development action items, since

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completing these tasks will likely give the CFO the best possible handle on the critical short-term needs of the organization.

Priority	Action	Description
1	Forecast cash.	Any other action is useless if the company runs out of money, so immediately create a cash forecast and initially revise it on a weekly basis. Continually modify the model to improve its accuracy.
2	Establish daily bank reconciliations.	The cash forecast will not be too accurate if the underlying bank balances are inaccurate, so arrange to have Internet access to daily bank balances and ensure that a daily reconciliation is made with this information.
3	Review payables.	Go over all current payables and conduct a full one-year review of the vendor ledger with the payables staff. The objective is to understand the nature, amount, and timing of payments. This information is very useful for increasing the accuracy of the cash forecast.
4	Review collections.	Go over all current accounts receivable with the collections staff, and then expand the review to all major customers, even if there are no receivables currently outstanding. This gives an excellent overview of cash inflows for the cash forecast.
5	Review debt agreements.	Personally review the debt agreements to verify the dates when payments come due, the applicable interest rates, and particularly any covenants that can result in the debt being called by the lender. This knowledge prevents any unexpected surprises from occurring in the cash forecasting system.
6	Review capital expenditures.	The last priority that feeds into the cash forecasting system is capital expenditures. This has the lowest priority of the cash-related activities, since this is typically a discretionary payment. Be aware of which expenditures are critical short-term items that probably cannot be delayed, and which can potentially be shifted further into the future.
7	Review contracts.	Obtain copies of all current contracts and review them in great detail to ensure that there are no hidden surprises, such as unexpected liabilities or potential lawsuits. This is a problem in a large number of situations, and is worthy of review very early in a CFO's tenure.
8	Establish metrics.	Establish a set of initial metrics on a multimonth trend line in order to determine the company's performance in a number of areas. This should certainly include days of receivables, payables, and inventory, as well as gross and operating margins, the overall breakeven point, and any metrics required by loan covenants. The exact measures used will vary by industry. The intent is to give the CFO early knowledge of potential performance issues.
9	Create sales report.	Be aware of anticipated sales for at least the current month, as well as changes in the backlog. This should be included in a weekly sales report that goes not only to the CFO but to the entire management team.

10	Create flash report.	Incorporate the total periodic sales listed on the sales report in a flash report that itemizes the latest expectation for total financial results for the reporting period. As was the case for the sales report, this should be issued weekly, and should go to the entire management team. By completing these top ten priorities, the CFO has gained knowledge of all aspects of cash flow, any contractual problems, and short-term financial results.
11	Review the staff.	With short-term issues taken care of, it is now time to deal with the CFO's primary long-term asset—the staff. This review should include an examination of all resumes for employees reporting either directly or indirectly to the CFO, face-to-face meetings with them, and group sessions. The outcome should be a clear understanding of each person's capabilities and aspirations, training needs, and weaknesses.
12	Review department efficiencies.	Develop metrics for those functions reporting to the CFO, and determine where efficiencies are in the most need of improvement. Based on the initial staff review, create a plan to improve efficiency levels and begin its implementation.
13	Establish training schedules.	Based on the staff review and departmental efficiency plans, create a training schedule for each employee that is precisely tailored to how that person fits into the CFO's plans for increasing departmental efficiency.
14	Delegate tasks.	Based on information gleaned from the last three tasks, consider a gradual shifting of selected tasks to subordinates, allowing more time to delve into the priorities yet to come. If there are no competent staff to whom anything can be delegated, then the next step will be staff replacement in order to upgrade staff quality. With these basic staff-management priorities initiated, shift to the identification and resolution of risk issues.
15	Review auditors' management letter.	Outside auditors usually issue a letter to management at the conclusion of each audit that itemizes control and other problems that they feel should be addressed. This is an excellent source of information for the new CFO who wants a quick grasp of potential problem areas.
16	Review internal audit reports.	Internal audit reports are similar to the auditors' management letter in providing information about potential areas of risk, though many firms do not have internal audit teams or target the activities of their teams at only a small number of areas each year. If available, obtain and read these reports.
17	Review controls.	Conduct a general overview of all financial controls, based on the information contained in the last two priority items, plus an examination of control flowcharts for all key accounting and financial processes. This should result in the identification of control weaknesses for immediate fixing.
18	Review insurance policies.	Retain legal counsel to review all outstanding insurance policies, as well as to conduct an assessment of all liabilities for which additional insurance coverage may be required. This is a technical area for which the CFO will probably not be entirely qualified, hence the need for an expert. Evaluate the expert's report and change insurance as necessary.

(*continued*)

Priority	Action	Description
19	Review other risks.	Meet with other department managers to assess any other types of risk to which the company is subject, and devise a risk management strategy to compensate for each one. This concludes the priorities addressing risk management. Then turn to the creation of better reporting systems.
20	Review financial disclosures.	If the company is publicly held, compare all current SEC filing requirements to what the company is actually reporting and adjust reports as necessary. This chore can be given to a qualified subordinate or even the outside auditors.
21	Revise management reports.	The CFO should now have enough preliminary knowledge of company operations to see if the management reports being issued by the accounting and finance departments contain the right kind of information needed to properly run the company. It is likely that a substantial overhaul of the existing reporting system will be necessary.
22	Review computer system requirements.	The creation of new management reports may uncover flaws in the underlying computer systems, such as data storage capacity problems or the inability to automatically collect various types of key information. This is a good time to assess the requirements of these systems and initiate their long-term overhaul, if necessary.
23	Conduct cost review.	Use group and individual sessions with the accounting staff, as well as with most department managers, in order to walk through the entire income statement and devise both short- and long-term plans for reducing costs.
24	Review finance policies.	Company profits can be linked to the finance department's policies on the extension of credit, allowed investment options, and taxation issues. Work with impacted departments (such as the credit policy with the sales manager) to determine the appropriate policies to use in these areas.
25	Create budgeting process.	The priority for budgeting may be accelerated if the CFO begins work near or in the midst of the standard budgeting period. This process should include an evaluation of how well the process has worked in the past, how it supports company strategy, and how it supports the management compensation plan. A key aspect is the creation of a financing plan, so the CFO has some idea of the timing and amount of funds that may be needed.
26	Meet with lenders.	This priority may be substantially accelerated if the company is in substantial difficulties when the CFO is hired. Otherwise, the CFO should first create a financing budget and then meet with lenders to see how they can assist in accommodating the company's needs.
27	Meet with investment bankers.	The result of the budgeting process is not just a plan for obtaining debt (see last two priorities), but also the acquisition of more equity, if necessary. Work with the company's investment bankers to determine the state of the equity markets and the cost to obtain more equity.

28	Review inventory aging.	If the company has substantial assets tied up in inventory, take a significant amount of time to physically review the state of the inventory, where it is stored, how old it is, and how much appears to be reduced in value. These steps are necessary because inventory is subject to reporting fraud and shrinkage, can be grossly overvalued, and in short can cause reporting nightmares if not properly kept track of.
29	Review document retention systems.	Last in priority is a review of document retention systems. Some CFOs may ignore this item entirely, but inadequate paperwork storage can cause major problems in the event of any type of audit, which may result in fines by government entities. Though a low priority, it must be addressed at some point.

The preceding priority list should not lead one to believe that an item, once completed, does not have to be addressed again. On the contrary, additional problem areas will likely be revealed during the completion of each priority item that will require additional work to address. In addition, any system is likely to degrade over time, requiring repeated reviews by the CFO to ensure that it is operating properly. In short, new CFOs will find that they will repeatedly cycle through this list.

APPENDIX B

Performance Measurement Checklist

THIS APPENDIX CONTAINS ALL of the measurements that a CFO would need in order to determine the financial condition of a company, as well as the operational performance of the accounting department. It is intended to be a quick reference for the reader who needs to find a formula as soon as possible.

The following measurements are listed in alphabetical order within these general categories:

- Asset utilization
- Operating performance
- Cash flow
- Liquidity
- Capital structure and solvency
- Return on investment
- Market performance
- Measurements for the accounting/finance department

In some cases, multiple variations on the same measurement are shown.

Name	Formula
Asset Utilization Measurements	
Accumulated depreciation to fixed assets ratio	$\frac{\text{Accumulated depreciation}}{\text{Total fixed assets}}$
Breakeven point	$\frac{\text{Total operating expenses}}{\text{Average gross margin percentage}}$

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	$\frac{\text{Total operating expenses} - (\text{Depreciation} + \text{Amortization} + \text{Other noncash expenses})}{\text{Average gross margin percentage}}$
Foreign exchange ratios	$\frac{\text{Foreign currency gains and losses}}{\text{Net income}}$ $\frac{\text{Foreign currency gains and losses}}{\text{Total sales}}$
Fringe benefits to wages and salaries expense	$\frac{\text{Life insurance} + \text{Medical insurance} + \text{Pension funding expense} + \text{Other benefits}}{\text{Wages} + \text{Salaries} + \text{Payroll taxes}}$
Goodwill to assets ratio	$\frac{\text{Unamortized goodwill}}{\text{Total assets}}$
Interest expense to debt ratio	$\frac{\text{Interest expense}}{\text{Short-term debt} + \text{Long-term debt}}$
Investment turnover	$\frac{\text{Sales}}{\text{Stockholders' equity} + \text{Long-term liabilities}}$
Margin of safety	$\frac{\text{Current sales level} - \text{Breakeven point}}{\text{Current sales level}}$
Overhead rate	$\frac{\text{Total overhead expenses}}{\text{Direct labor}}$ $\frac{\text{Total overhead expenses}}{\text{Total machine hours}}$
Overhead of cost of sales ratio	$\frac{\text{Total overhead expenses}}{\text{Cost of goods sold}}$ $\frac{\text{Total overhead expenses}}{\text{Direct materials} + \text{Direct labor}}$ $\frac{\text{Total overhead expenses}}{\text{Direct materials}}$
Repairs and maintenance expense to fixed assets ratio	$\frac{\text{Total repairs and maintenance expense}}{\text{Total fixed assets before depreciation}}$
Sales backlog ratio	$\frac{\text{Backlog of orders received}}{\text{Sales}}$ $\frac{\text{Total backlog}}{\text{Annual sales}/360\text{ days}}$
Sales expenses to sales ratio	$\frac{\text{Sales salaries} + \text{Commissions} + \text{Sales travel expenses} + \text{Other sales expenses}}{\text{Sales}}$
Days of working capital	$\frac{(\text{Accounts receivable} + \text{Inventory} - \text{Accounts payable})}{\text{Net sales}}$
Sales per person	$\frac{\text{Annualized revenue}}{\text{Total full-time equivalents}}$
Sales returns to gross sales ratio	$\frac{\text{Total sales returns}}{\text{Gross sales}}$

Sales to administrative expenses ratio	$\frac{\text{Annualized net sales}}{\text{Total general and administrative expenses}}$
Sales to equity ratio	$\frac{\text{Annual net sales}}{\text{Total equity}}$
Sales to fixed assets ratio	$\frac{\text{Annualized net sales}}{\text{Total fixed assets}}$ $\frac{\text{Annualized net sales}}{\text{Total fixed assets before accumulated depreciation}}$
Sales to working capital ratio	$\frac{\text{Annualized net sales}}{(\text{Accounts receivable} + \text{Inventory} - \text{Accounts payable})}$
Tax rate percentage	$\frac{\text{Income tax paid}}{\text{Before-tax income}}$ $\frac{\text{Income tax expense}}{\text{Before-tax income}}$

Operating Performance Measurements

Gross profit index	$\frac{\text{Gross profit in period two}}{\text{Sales in period two}}$ $\frac{\text{Gross profit in period one}}{\text{Sales in period one}}$
Core growth rate	$\frac{(\text{Current annual revenue} - \text{Annual revenue 5 years ago} - \text{Acquired revenue} - \text{Revenue recognition changes})/\text{Annual revenue 5 years ago}}{5 - \text{Average annual price increase}}$
Gross profit percentage	$\frac{\text{Revenue} - (\text{Overhead} + \text{Direct materials} + \text{Direct labor})}{\text{Revenue}}$ $\frac{\text{Revenue} - \text{Direct materials}}{\text{Revenue}}$
Investment income percentage	$\frac{\text{Dividend income} + \text{Interest income}}{\text{Carrying value of investments}}$
Net income percentage	$\frac{\text{Net income}}{\text{Revenue}}$
Operating assets ratio	$\frac{\text{Assets used to create revenue}}{\text{Total assets}}$
Operating leverage ratio	$\frac{\text{Sales} - \text{Variable expenses}}{\text{Operating income}}$
Operating profit percentage	$\frac{\text{Sales} - (\text{Cost of goods sold} + \text{Sales, general, and administrative expenses})}{\text{Sales}}$
Profit per person	$\frac{\text{Net profit}}{\text{Total full} - \text{time equivalents}}$
Sales margin	$\frac{\text{Gross margin} - \text{Sales expenses}}{\text{Gross sales}}$
Sales to operating income ratio	$\frac{\text{Operating income}}{(\text{Net sales} - \text{Investment income})}$

Cash Flow Measurements

Cash flow coverage ratio	$\frac{\text{Total debt payments} + \text{Dividend payments} + \text{Capital expenditures}}{\text{Net income} + \text{Noncash expenses} - \text{Noncash sales}}$
Cash flow from operations	$\frac{\text{Income from operations} + \text{Noncash expenses} - \text{Noncash sales}}{\text{Income from operations}}$
	$\frac{\text{Net income} + \text{Noncash expenses} - \text{Noncash sales}}{\text{Net income}}$
Cash flow return on assets	$\frac{\text{Net income} + \text{Noncash expenses} - \text{Noncash sales}}{\text{Total assets}}$
Cash flow return on sales	$\frac{\text{Net income} + \text{Noncash expenses} - \text{Noncash sales}}{\text{Total sales}}$
Cash flow to debt ratio	$\frac{\text{Net income} + \text{Noncash expenses} - \text{Noncash sales}}{\text{Debt} + \text{Lease obligations}}$
	$\frac{\text{Net income} + \text{Noncash expenses} - \text{Noncash sales}}{\text{Total long-term debt payments for the period}}$
Cash flow to fixed asset requirements	$\frac{\text{Net income} + \text{Noncash expenses} - \text{Noncash sales}}{\text{Budgeted fixed asset purchases}}$
	$\frac{\text{Net income} + \text{Noncash expenses} - \text{Noncash sales} - \text{Dividends} - \text{Principal payments}}{\text{Budgeted fixed asset purchases}}$
Cash receipts to billed sales and progress payments	$\frac{\text{Cash receipts}}{\text{Billed sales} + \text{Billed progress payments}}$
Cash reinvestment ratio	$\frac{\text{Increase in fixed assets} + \text{Increase in working capital}}{\text{Net income} + \text{Noncash expenses} - \text{Noncash} - \text{Sales dividends}}$
Cash to current assets ratio	$\frac{\text{Cash} + \text{Short-term marketable securities}}{\text{Current assets}}$
Cash to current liabilities ratio	$\frac{\text{Cash} + \text{Short-term marketable securities}}{\text{Current liabilities}}$
Cash to working capital ratio	$\frac{\text{Cash} + \text{Short-term marketable securities}}{\text{Current assets} - \text{Current liabilities}}$
Dividend payout ratio	$\frac{\text{Total dividend payments}}{\text{Net income} + \text{Noncash expenses} - \text{Noncash sales}}$
Expense coverage days	$\frac{\text{Cash} + \text{Short-term marketable securities} + \text{Accounts receivable}}{\text{Annual cash expenditures} \div 360}$
Fixed charge coverage	$\frac{\text{Fixed expenses} + \text{Fixed payments}}{\text{Cash flow from operations}}$
Stock price to cash flow ratio	$\frac{\text{Stock price} \times \text{Number of shares outstanding}}{\text{Earnings before interest, taxes, depreciation, and amortization}}$

Liquidity Measurements

Accounts payable days	$\frac{\text{Accounts payable}}{\text{Purchases}/360}$

Accounts payable turnover	$\dfrac{\text{Total purchases}}{\text{Ending accounts payable balance}}$
Accounts receivable investment	$\dfrac{\text{Average days to payment}}{\text{360 days}} \times \text{Annual credit sales} \times (1 - \text{Gross margin}\%) \times (\text{Cost of capital})$
Accounts receivable turnover	$\dfrac{\text{Annualized credit sales}}{\text{Average accounts receivable} + \text{Notes payable by customers}}$
Altman's Z-score bankruptcy prediction formula	$(\text{Operating income/Total assets}) \times 3.3 + (\text{Sales/Total assets}) \times 0.999 + (\text{Market value of common stock} + \text{Preferred stock/Total liabilities}) \times 0.6 + (\text{Working capital/Total assets}) \times 1.2 + (\text{Retained earnings/Total assets}) \times 1.4$
Average receivable collection period	$\dfrac{\text{Average accounts receivable}}{\text{Annual sales}/365}$
Cash ratio	$\dfrac{\text{Cash} + \text{Short-term marketable securities}}{\text{Current liabilities}}$
Current liability ratio	$\dfrac{\text{Current liabilities}}{\text{Total liabilities}}$
Current ratio	$\dfrac{\text{Current assets}}{\text{Current liabilities}}$
Days delinquent sales outstanding	$\dfrac{\text{365 annualized credit sales from delinquent accounts}}{\text{Average delinquent accounts receivable}}$
Days' sales in receivables index	$\dfrac{\dfrac{\text{Accounts receivable in period two}}{\text{Sales in period two}}}{\dfrac{\text{Accounts receivable in period one}}{\text{Sales in period one}}}$
Defensive interval ratio	$\dfrac{\text{Cash} + \text{Marketable securities} + \text{Accounts receivable}}{\text{Expected daily operating expenses}}$
Ending receivable balance	$\text{Average receivable} \times \dfrac{\text{Sales forecast for period}}{\text{Days in period}}$ Collection period
Inventory to sales ratio	$\dfrac{\text{Sales}}{\text{Inventory}}$
Inventory to working capital ratio	$\dfrac{\text{Inventory}}{\text{Accounts receivable} + \text{Inventory} - \text{Accounts payable}}$
Collection effectiveness index	$\dfrac{\text{Beginning receivables} + \text{Credit sales} - \text{Ending total receivables}}{\text{Beginning receivables} + \text{Credit sales} - \text{Ending current receivables}} \times 100$

Inventory turnover	$\frac{\text{Cost of goods sold}}{\text{Inventory}}$ $365 / \frac{\text{Cost of goods sold}}{\text{Inventory}}$ $\frac{\text{Direct materials}}{\text{Raw materials inventory}}$
Liquidity index	$\frac{(\text{Accounts receivable} \times \text{Days to liquidate}) + (\text{Inventory} \times \text{Days to liquidate})}{\text{Accounts receivable} + \text{Inventory}}$
Noncurrent assets to noncurrent liabilities ratio	$\frac{\text{Noncurrent assets}}{\text{Noncurrent liabilites}}$
Quick ratio	$\frac{\text{Cash} + \text{Marketable securities} + \text{Accounts receivable}}{\text{Current liabilities}}$
Required current liabilities to total current liabilities ratio	$\frac{\text{Current liabilities with required payment dates}}{\text{Total current liabilities}}$
Risky asset conversion ratio	$\frac{\text{Cost of assets with Minimal cash conversion value}}{\text{Total assets}}$
Sales to current assets ratio	$\frac{\text{Sales}}{\text{Current assets}}$
Short-term debt to long-term debt ratio	$\frac{\text{Total short-term debt}}{\text{Total long-term debt}}$
Working capital productivity	$\frac{\text{Annual sales}}{\text{Working capital}}$
Working capital to debt ratio	$\frac{\text{Cash} + \text{Accounts receivable} + \text{Inventory} - \text{Accounts payable}}{\text{Debt}}$

Capital Structure and Solvency Measurements

Accruals to assets ratio	$\frac{\text{Change in working capital} - \text{Change in cash} - \text{Change in depreciation}}{\text{Change in total assets}}$
Asset quality index	$1 - \frac{\text{Current assets in period two} + \text{Net fixed assets in period two}}{\frac{\text{Total assets in period two}}{\text{Current assets in period one}} + 1 - \frac{\text{Net fixed assets in period one}}{\text{Total assets in period one}}}$
Debt coverage ratio	$\frac{\text{Earnings before interest and taxes}}{\text{Interest} + \frac{\text{Scheduled principal payments}}{(1 - \text{Tax rate})}}$
Debt to equity ratio	$\frac{\text{Debt}}{\text{Equity}}$

Funded capital ratio	$\frac{\text{Stockholders' equity} + \text{Long-term debt}}{\text{Fixed assets}}$
Issued shares to authorized shares	$\frac{\text{Issued shares} + \text{Stock options} + \text{Stock warrants} + \text{Convertible securities}}{\text{Total authorized shares}}$
Preferred stock to total stockholders' equity	$\frac{\text{Preferred stock}}{\text{Stockholders' equity}}$
Retained earnings to stockholders' equity	$\frac{\text{Retained earnings}}{\text{Total stockholders' equity}}$
Times interest earned	$\frac{\text{Average cash flow}}{\text{Average interest expense}}$
Times preferred dividend earned	$\frac{\text{Net income}}{\text{Preferred dividend}}$

Return on Investment Measurements

Book value per share	$\frac{\text{Total equity} - \text{Cost to liquidate preferred stock}}{\text{Total number of common shares outstanding}}$
Dividend payout ratio	$\frac{\text{Dividend per share}}{\text{Earnings per share}}$
Dividend yield ratio	$\frac{\text{Dividend per share}}{\text{Market price per share}}$
Earnings per share	$\frac{\text{Net income} - \text{Dividends on preferred stock}}{\text{Number of outstanding common shares} + \text{Common stock equivalents}}$
Economic value added	$\text{Net investment} \times (\text{Actual return on investment} - \text{Percentage cost of capital})$
Equity growth rate	$\frac{\text{Net income} - \text{Common stock dividends} - \text{Preferred stock dividends}}{\text{Beginning common stockholders' equity}}$
Financial leverage index	$\frac{\text{Return on equity}}{\text{Return on assets}}$
Net worth	$\frac{\text{Total assets} - \text{Total liabilities} - \text{Preferred stock dividends}}{\text{Total outstanding common shares}}$
Percentage change in earnings per share	$\frac{\text{Incremental change in earnings per share}}{\text{Earnings per share from previous period}}$
Return on assets employed	$\frac{\text{Net profit}}{\text{Total assets}}$
Return on common equity	$\frac{\text{Net income} - \text{Preferred stock dividends}}{\text{Common stockholders' equity}}$

Return on equity percentage	$\frac{\text{Net income}}{\text{Total equity}}$
Return on operating assets	$\frac{\text{Net income}}{\text{Assets used to create revenue}}$
Tangible book value	Book value – (Goodwill + Other intangibles)

Market Performance Measurements

Capitalization rate	$\frac{\text{Earnings per share}}{\text{Market price per share}}$
Cost of capital	$\frac{\text{Interest expense} \times (1 - \text{Tax rate})}{\text{Amount of debt} - \text{Debt acquisition fees} + \text{Premium on debt} - \text{Discount on debt}} + \frac{\text{Interest expense}}{\text{Amount of preferred stock}} + \text{Risk-free return} + (\text{Beta} \times (\text{Average stock return} - \text{Risk-free return}))$
Insider stock buy-sell ratio	$\frac{\text{Number of stock sale transactions by insiders}}{\text{Number of stock purchase transactions by insiders}}$
Market value added	(Number of common shares outstanding × Share price) + (Number of preferred shares outstanding × Share price) – Book value of invested capital
Price/earnings ratio	$\frac{\text{Average common stock price}}{\text{Net income per share}}$
Enterprise value/ earnings ratio	$\frac{(\text{Total shares} \times \text{Stock price}) + \text{Debt} - \text{Cash} - \text{Marketable securities}}{\text{Net income} - \text{Interest expense}}$
Sales to stock price ratio	$\frac{\text{Annual net sales}}{\text{Average common stock price}}$

Measurements for the Accounting/Finance Department

Average employee expense report turnaround time	Date of payment to employees – Date of expense report receipt
Average time to issue invoices	$\frac{\text{Sum of invoice dates} - \text{Sum of shipment dates}}{\text{Number of invoices issued}}$
Bad debt percentage	$\frac{\text{Total bad debt dollars recognized}}{\text{Total outstanding accounts receivable}}$ $\frac{\text{Total bad debt dollars recognized}}{\text{Total credit sales}}$
Borrowing base usage percentage	$\frac{\text{Amount of debt outstanding}}{(\text{Accounts receivable} \times \text{Allowable percentage}) + (\text{Inventory} \times \text{Allowable percentage})}$
Brokerage fee percentage	$\frac{\text{Bank/broker transaction fees charged}}{\text{Total funds invested}}$ $\frac{\text{Bank/broker transaction fees charged}}{\text{Number of bank/broker transactions processed}}$

Cost of credit	$\text{Discount\%}/(100 - \text{Discount\%}) \times (360/(\text{Full allowed payment days} - \text{Discount days}))$
Earnings rate on invested funds	$\dfrac{\text{Interest earned} + \text{Increase in market value of securities}}{\text{Total funds invested}}$
Internal audit efficiency	$\dfrac{\text{Number of internal audits completed}}{\text{Number of internal audits planned}}$
Internal audit savings to cost percentage	$\dfrac{\text{Internal audit recommended savings}}{\text{Internal audit expense}}$
Payroll transaction fees per employee	$\dfrac{\text{Total payroll outsourcing fee per payroll}}{\text{Total number of employees itemized in payroll}}$
Percent of cash applied on day of receipt	$\dfrac{\text{Dollars of cash receipts applied on day of receipt}}{\text{Total dollars of incoming cash on day of receipt}}$
Percent of receivables over XX days old	$\dfrac{\text{Dollar amount of outstanding receivables XX days old}}{\text{Total dollars of outstanding receivables}}$
Percentage collected of dollar volume assigned	$\dfrac{\text{Cash received from collection agency}}{\text{Total accounts receivable assigned to collection agency}}$
Percentage of payment discounts missed	$\dfrac{\text{Number of payment discounts missed}}{\text{Total number of payment discounts available}}$
Percentage of tax filing dates missed	$\dfrac{\text{Total number of tax returns filed late}}{\text{Total number of tax returns filed}}$
Proportion of products costed before release	$\dfrac{\text{Number of products costed before release}}{\text{Total number of products released}}$
Unmatched receipts exposure	$\dfrac{\text{Total balance in unmatched receipts suspense account}}{\text{Total accounts receivable balance}}$

APPENDIX C

Due Diligence Checklist

THE GENERAL TOPIC OF mergers and acquisitions was covered in Chapter 22, including a lengthy discussion of the key topics to address in a due diligence proceeding. This appendix includes a more detailed checklist that can be used as a master list, picking only those topics that appear to be relevant to the due diligence tasks at hand.

INDUSTRY OVERVIEW

1. What is the size of the industry?
2. How is the industry segmented?
3. What is the industry's projected growth and profitability?
4. What are the factors affecting growth and profitability?
5. What are the trends in the number of competitors and their size, product innovation, distribution, finances, regulation, and product liability?

CORPORATE OVERVIEW

1. When and where was the company founded, and by whom?
2. What is its history of product development?
3. What is the history of the management team?
4. Has the corporate location changed?
5. Have there been ownership changes?
6. Have there been acquisitions or divestitures?
7. What is its financial history?

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ORGANIZATION AND GENERAL CORPORATE ISSUES

1. Obtain the articles of incorporation and bylaws. Review for the existence of preemptive rights, rights of first refusal, registration rights, or any other rights related to the issuance or registration of securities.
2. Review the bylaws for any unusual provisions affecting shareholder rights or restrictions on ownership, transfer, or voting of shares.
3. Review the terms associated with any preferred stock or unexercised warrants.
4. Describe any antitakeover provisions.
5. Obtain certificates of good standing for the company and all significant subsidiaries.
6. Obtain the minutes from all shareholder meetings for the past five years. Review for proper notice prior to meetings, the existence of a quorum, and proper voting procedures; verify that stock issuances have been authorized; verify that insider transactions have been approved; verify that officers have been properly elected; verify that shares are properly approved and reserved for stock option and purchase plans.
7. Obtain the minutes of the executive committee and audit committee for the past five years, as well as the minutes of any other special board committees. Review all documents.
8. If the company is publicly held, obtain all periodic filings for the past five years, including the 10-K, 10-Q, 8-K, and Schedule 13D.
9. Review all annual and quarterly reports to shareholders.
10. Obtain a list of all states in which the company is qualified to do business and a list of those states in which it maintains significant operations. Determine if there is any state where the company is not qualified but should be qualified to do business.
11. Review the articles of incorporation and bylaws of each significant subsidiary. Determine if there are restrictions on dividends to the company. For each subsidiary, review the minutes of the board of directors for matters requiring disclosure. Also review each subsidiary's legal right to do business in each state in which it operates.
12. Review the company's correspondence with the SEC, any national exchange, or state securities commission, other than routine transmittals, for the past five years. Determine if there are or were any enforcement or disciplinary actions or any ongoing investigations or suggestions of violations by any of these entities.
13. Review all corporate insurance, using a schedule from the company's insurance agency. If there is material pending litigation, determine the extent of insurance coverage and obtain insurance company confirmation.
14. Review all pending and threatened legal proceedings to which the company or any of its subsidiaries is a party. Describe principal parties, allegations, and relief sought. This includes any governmental or environmental proceedings. Obtain copies of existing consent decrees or significant settlement agreements relating to the company or its subsidiaries.
15. Review the auditors' letter to management concerning internal accounting controls and procedures, as well as any management responses.
16. If there has been a change in accountants during the past five years, find out why.

17. Review any reports of outside consultants or analysts concerning the company.
18. Review any correspondence during the past five years with the EPA, FTC, OSHA, EEOC, or IRS. Determine if there are any ongoing investigations or suggestions of violations by any of these agencies.
19. Research any press releases or articles about the company within the past year (see Bloomberg.com, NEXIS, Equifax, etc.).
20. Review all contracts that are important to operations. Also review any contracts with shareholders or officers. In particular, look for the following provisions:
    - Default or termination provisions
    - Restrictions on company action
    - Consent requirements
    - Termination provisions in employment contracts
    - Ownership of technology
    - Cancellation provisions in major supply and customer contracts
    - Unusual warranties or the absence of protective provisions
21. Review any required regulatory compliance and verify that necessary licenses and permits have been maintained, as well as ongoing filings and reports.
22. Review all current patent, trademark, service mark, trade name, and copyright agreements, and note renewal dates. Determine which patents have commercial applications. Estimate the possibility of extending the duration of patent protection.
23. Review all related-party transactions for the past three years.
24. Review the terms of any outbound or inbound royalty agreements.
25. Was any company software (either used internally or resold) obtained from another company? If so, what are the terms under which the code is licensed? Are there any associated royalty payments?
26. Review all legal invoices for the past two years.
27. Obtain a copy of any factoring agreements.
28. Obtain copies of all outsourcing agreements.

CAPITALIZATION AND SIGNIFICANT SUBSIDIARIES

1. Review all board resolutions authorizing the issuance of stock to ensure that all shares are validly issued.
2. Review debt agreements to which the company or any subsidiary is a party, as well as all debt guarantees. Note any restrictions on dividends, on incurring extra debt, and on issuing additional capital stock. Note any unusual consent or default provisions. If subordinated debt securities are being issued, compare new subordination provisions with the provisions for other agreements for compatibility. Review the latest borrowing base certificates. Inquire whether there are any defaults or potential defaults.
3. Review any disclosure documents used in the private placement of securities or loan applications during the preceding five years.
4. Review all documents affecting ownership, voting, or rights to acquire the company's stock for required disclosure and significance to the purchase transactions,

such as warrants, options, security holder agreements, registration rights agreements, shareholder rights, or poison pill plans.

EMPLOYEES

1. Obtain copies of any employment agreements, and document any change in control clauses that will trigger the cancellation of employee loans, severance payments, or the acceleration of vesting in such benefits as stock options.
2. Obtain copies of any noncompete agreements.
3. Obtain copies of any salesperson compensation agreements.
4. Obtain copies of any director compensation agreements.
5. Obtain copies of any option plans.
6. Summarize any loan amounts and terms to officers, directors, or employees.
7. Obtain any union labor agreements.
8. Determine the number of states to which payroll taxes must be paid.
9. Obtain a copy of the employee manual.
10. Obtain a list of all employees, their current compensation, and compensation for the prior year.
11. Summarize the names, ages, titles, education, experience, and professional biographies of the senior management team.
12. Obtain copies of employee resumes.
13. What has been the employee turnover rate for the past two years?
14. Obtain a copy of the organization chart.

REVENUE

1. Summarize sales by customer for the current and past year.
2. Summarize sales by product for the current and past year.
3. Summarize the backlog by customer.
4. Summarize the backlog by custom work and standard products.
5. Determine how much staffing is required to complete the existing backlog of custom work.
6. Determine the seasonality of revenue.
7. Determine the amount of ongoing maintenance revenue from standard software products.
8. Obtain copies of all outstanding proposals, bids, and offers pending award.
9. Obtain copies of all existing contracts for products or services, including warranty and guarantee work.

ASSETS

1. Obtain copies of all asset leases, and review for term, early payment, and bargain purchase clauses.

2. Obtain copies of all office space lease agreements, and review for term and renewal provisions.
3. Review the title insurance for any significant land parcels owned by the company.
4. Obtain current detail of accounts receivable.
5. Obtain a list of all accounts and notes receivable from employees.
6. Obtain a list of all inventory items, and discuss the obsolescence reserve.
7. Obtain the current fixed asset listing, as well as depreciation calculations.
8. Review the bad debt reserve calculation.
9. Obtain an itemized list of all assets that are not receivables or fixed assets.
10. Obtain any maintenance agreements on company equipment.
11. Is there an upcoming need to replace assets?
12. Discuss whether there are any plans to close, relocate, or expand any facilities.
13. Itemize all capitalized R&D or software development expenses.

LIABILITIES

1. Verify wage and tax remittances to all government entities and that there are no unpaid amounts.
2. Obtain a list of all accounts payable to employees.
3. Review the sufficiency of accruals for wages, vacation time, legal expenses, insurance, property taxes, and commissions.
4. Review the terms of any lines of credit.
5. Review the amount and terms of any other debt agreements.
6. Review the current accounts payable listing.
7. Obtain copies of all unexpired purchasing commitments (purchase orders, etc.).

FINANCIAL STATEMENTS

1. Obtain audited financial statements for the last three years.
2. Obtain monthly financial statements for the current year.
3. What are the revenues and profits per employee?
4. What is direct labor expense as a percentage of revenue?
5. Obtain copies of federal tax returns for the last three years.
6. Verify the most recent bank reconciliation.
7. Determine profitability by product, by customer, and by segment.
8. Obtain a copy of the business plan and budget.

INTERNET

1. Does the company use the Internet for internal use as an interactive part of operations? What functions are used in this manner?
2. Has the company's firewall ever been penetrated, and how sensitive is the information stored on the company network's publicly available segments?

3. Does the company provide technical support information through its Web site?
4. Are Web site usage statistics tracked? If so, how are they used for management decisions?
5. In what way could operational costs decrease if the company's customers interacted with it through the Internet?

SOFTWARE DEVELOPMENT

1. Who are the key development personnel involved with the creation, coding, and evaluation of software products? What is their tenure and educational background?
2. How much money is invested annually in development? As a proportion of sales?
3. What is the strategic plan for the development of new products? What is the timeline for their introduction? To what markets are they targeted?
4. How many patches were required to make the last major software release stable and commercially viable?
5. What was the average time required to resolve customer software problems?
6. How many customer accounts have been lost due to a software upgrade? What reasons did they give for dropping maintenance?
7. What operating system platforms are the target for the company's software products? Is there a plan to port any company products to other platforms? For what proportion of existing products has this been done?
8. Does the company use structured programming techniques that allow for easy software updating, maintenance, and enhancement?
9. What development languages and tools do the development staff use now? Are there plans to change to other languages and tools?
10. What are the attributes that make the company's products unique?
11. What is the company's strategy in designing new products (e.g., quality, support, special features)?

MARKETING

1. What types of advertising and promotion are used?
2. Does the company have a Web site? Who owns the site, and how is it hosted?
3. Does the company use e-mail for marketing notifications to customers?
4. What are the proportions of sales by distribution channel?
5. How many customers can the company potentially market its products to? What would be the volume by customer?
6. What is the company's market share? What is the trend?
7. Are there new markets in which the products can be sold?

SALES

1. What is the sales strategy (e.g., add customers, increase support, increase penetration into existing customer base, pricing, etc.)?

2. What is the structure of the sales organization? Are there independent sales representatives?
3. Obtain the sales organization chart.
4. How many sales personnel are in each sales position?
5. What is the sales force's geographic coverage?
6. What is the sales force's compensation, split by base pay and commission?
7. What was the sales per salesperson for the past year?
8. What was the sales expense per salesperson for the past year?
9. What is the sales projection by product for the next 12 months?
10. Into what category do customers fall—end users, retailers, OEMs, wholesalers, and/or distributors?
11. Who are the top ten customers, based on sales volume?
12. What is the historical sales volume to all customers for the past three years?
13. How many customers are there for each product, industry, and geographic region?
14. What is the average order size?
15. Does the company have an Internet store? Does the site accept online payments and orders? What percentage of total sales come through this medium?
16. How many customers have current subscriptions or maintenance for the company's software? What is the dollar amount per customer? What is the growth rate in the number of customers?
17. What is the structure of the technical support group? How many people are in it, and what is their compensation?
18. Obtain a list of all customers who have stopped doing business with the company in the last three years.

RESEARCH AND DEVELOPMENT

1. Obtain a summary of all R&D projects currently underway, including their current status, estimated time and cost to complete, and estimated unit costs as compared to target costs.
2. Determine the need for key staff positions to complete current R&D projects.
3. Estimate the worst-case, average-case, and best-case scenarios for revenue streams resulting from current R&D projects.
4. Estimate the types of patents that may be filed as a result of current R&D projects, and determine how these patents could be used to enhance the company's competitive position and/or block the positions of competitors.

PAYROLL

1. Verify if any special bonuses are to be paid to acquiree employees in the event of a merger or acquisition, and quantify the amount.
2. Determine if the acquiree has agreed to an extension of the IRS's statute of limitations for reviewing the acquiree's tax records, and adjust the review period for the following items to match the resulting longer period subject to IRS audit.

3. Verify that employees are properly categorized as contractors versus employees, as well as exempt versus nonexempt.
4. Verify compliance with filing dates for federal, state, and local payroll tax deposits.
5. Verify that all payroll tax returns have been filed by the required dates.
6. Verify that annual state unemployment rate notices have been incorporated into unemployment tax remittances.
7. Reconcile wages reported on quarterly Forms 941 to year-end Forms W-2 for both federal and state reporting.
8. Search for payroll tax liabilities recorded in the general ledger that have not been cleared by scheduled payment due dates.
9. Examine the number and size of payroll tax remittance penalties paid to determine if the remittance process has significant ongoing weaknesses.
10. Determine if the acquiree is being audited for various payroll taxes, and determine the size of the tax amounts under review.
11. Match the employee benefits listed in the employee handbook to benefits expenditures and related employee deductions actually being made.

HUMAN RESOURCES

1. Review the unemployment rate notices and reserve balances for every state in which the acquiree has employees.
2. Determine the matching contribution levels for pension plans.
3. Determine the pension plan eligibility criteria and vesting period.

TREASURY

1. Document banking relationships, available credit lines, and collateral.
2. Document all foreign exchange and interest rate hedging activities and identify areas of risk.
3. Document investment strategies and related policies.
4. Document transfer pricing policies and note government audits in this area.
5. Identify all funds invested in nonliquid assets, and determine their first possible liquidation dates and associated penalties for early liquidation.
6. Determine the extent and accuracy of cash forecasting systems.

CULTURE

1. What is the company's intent in forcing the acquired company to use its business practices?
2. What are the decision-making processes of the company?
3. What are the performance monitoring and bonus payment systems of the company?
4. How does the company resolve conflicts?
5. What types of formal and informal communication systems are used by the company?
6. What is the command structure of the company?

COMPLEXITY

1. Evaluate the number and variability of revenue sources.
2. Review the size and volatility of individual revenue transactions.
3. Review the volatility of the effective tax rate.
4. Investigate differences between tax and book income.
5. Review off-balance-sheet assets and liabilities.

OTHER

1. Discuss revenue recognition policies.
2. Construct a cash forecast through the end of the year.
3. Obtain a copy of the chart of accounts.
4. Determine risk management strategies and insurance coverage.
5. Is there a 401(k) plan? Any company contribution? Who manages it? Are contribution payments current?
6. Evaluate the company benefit plan to determine its cost, as well as the amount of employee participation.
7. Obtain a list of all significant accounting policies.

About the Author

STEVEN BRAGG, CPA, HAS been the chief financial officer or controller of four companies, as well as a consulting manager at Ernst & Young and auditor at Deloitte & Touche. He received a master's degree in finance from Bentley College, an MBA from Babson College, and a bachelor's degree in economics from the University of Maine. He has been the two-time president of the Colorado Mountain Club and is an avid alpine skier, mountain biker, and certified master diver. Mr. Bragg resides in Centennial, Colorado. He has written the following books published by John Wiley & Sons:

Accounting and Finance for Your Small Business
Accounting Best Practices
Accounting Control Best Practices
Accounting Policies and Procedures Manual
Billing and Collections Best Practices
Business Ratios and Formulas
Controller's Guide to Costing
Controller's Guide to Planning and Controlling Operations
Controller's Guide: Roles and Responsibilities for the New Controller
Controllership
Cost Accounting
Cost Reduction Analysis
Essentials of Payroll
Fast Close
Financial Analysis
GAAP Guide
GAAP Policies and Procedures
GAAS Guide
Inventory Accounting
Inventory Best Practices
Just-in-Time Accounting
Management Accounting Best Practices
Managing Explosive Corporate Growth
Mergers & Acquisitions
Outsourcing
Payroll Accounting

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Payroll Best Practices
Revenue Recognition
Running a Public Company
Running an Effective Investor Relations Department
Sales and Operations for Your Small Business
Throughtput Accounting
The Controller's Function
The New CFO Financial Leadership Manual
The Ultimate Accountants' Reference
Treasury Management
The Vest Pocket Controller
The Vest Pocket IFRS

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