

they have been immersed in the financial, marketing, production, and R&D activities. Not surprisingly, a manager's assessment of whether a certain internal factor—such as production facilities, sales organization, financial capacity, control systems, or key personnel—is a strength or a weakness will be strongly influenced by his or her experience in connection with that factor. In the capital-intensive package delivery industry, for example, operating margin is a strategic internal factor affecting a firm's flexibility to add capacity. A few years ago, UPS managers viewed its declining operating margins (down from 12 percent to 9 percent by mid-decade) as a troubling weakness, limiting their flexibility to aggressively continue to expand their overnight air fleet. FedEx managers viewed a similar operating margin around the same time as a growing strength because it was a steady improvement and almost double its 5 percent level five years earlier.

Although historical experience can provide a relevant evaluation framework, strategists must avoid tunnel vision in making use of it. NEC, Japan's HP, initially dominated Japan's PC market with a 70 percent market share by using a proprietary hardware system, much higher screen resolution, powerful distribution channels, and a large software library from third-party vendors. Far from worried, Hajime Ikeda, manager of NEC's planning division at the time, was quoted as saying, "We don't hear complaints from our users." Soon, IBM, Apple, and HP filled the shelves in Japan's famous consumer electronics district, Akihabara. Hiroki Kamata, president of a Japanese computer research firm, reported that Japan's PC market, worth more than \$50 billion, saw Apple, Dell, IBM, and HP with more market share than NEC because of better technology, software, and the restrictions created by NEC's proprietary technology. As NEC learned, using only historical experience as a basis for identifying strengths and weaknesses can prove dangerously inaccurate.

### **Benchmarking: Comparison with Competitors**

A major focus in determining a firm's resources and competencies is comparison with existing (and potential) competitors. Firms in the same industry often have different marketing skills, financial resources, operating facilities and locations, technical know-how, brand images, levels of integration, managerial talent, and so on. These different internal resources can become relative strengths (or weaknesses) depending on the strategy a firm chooses. In choosing a strategy, managers should compare the firm's key internal capabilities with those of its rivals, thereby isolating its key strengths and weaknesses.

In the global tech-services industry, New York-based IBM and India-based Tata Consultancy Services are major rivals. Tata has focused on large American and European companies providing lower-cost information technology (IT) services and business process simplification consulting. IBM has taken a different strategy, focusing in on helping U.S. clients cut costs while helping emerging market customers build out their technology infrastructure. Tata's strength has become its ability to offer low-cost outsourcing options to large U.S. and European firms for their information system operation needs. IBM, with a personnel cost structure that would put it at a disadvantage versus Tata in this regard, has emphasized systems design and optimization of the latest technology infrastructure to make that system perform well—building on its technical skills and computer technology expertise where it maintains a relative strength. Interestingly, this has led to a situation where Tata generates half of its revenue from U.S. clients, while IBM generates 65 percent of its revenue overseas and is the largest seller of tech services in India. Managers in both Tata and IBM have built successful strategies, yet those strategies are fundamentally different. Benchmarking each other, they have identified ways to build on relative strengths while avoiding dependence on capabilities at which the other firm excels.<sup>8</sup>

<sup>8</sup> Steve Hamm, "IBM vs. Tata: Who's More American?" *BusinessWeek.com*, April 23, 2008.



**benchmarking**  
Evaluating the sustainability of advantages against key competitors. Comparing the way a company performs a specific activity with a competitor or other company doing the same thing.

**Benchmarking**, or comparing the way “our” company performs a specific activity with a competitor or other company doing the same thing, has become a central concern of managers in quality commitment companies worldwide. Particularly as the value chain framework has taken hold in structuring internal analysis, managers seek to systematically benchmark the costs and results of the smallest value activities against relevant competitors or other useful standards because it has proven to be an effective way to continuously improve that activity.

Exhibit 6.12 shows Kodak highlighting a value chain activity in which it believes it excels, low-cost/high-quality inks, and using it to differentiate its recently introduced printer. Kodak is seeking to not only highlight its internal managerial benchmarking versus other ink-jet printer makers, notably Hewlett-Packard, but it is also taking a page out of benchmarking to touch a long-held raw nerve they believe millions of customers share—the shock and awe they feel every time they go to a store and buy a new printer cartridge for their HP, Canon, or Epson printer. They want to identify with and inform the average consumer looking for a credible alternative when “benchmarking” different solutions to their printer needs.

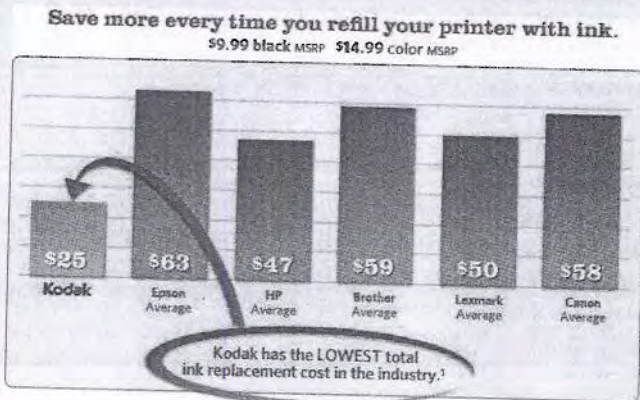
The ultimate objective in benchmarking is to identify the “best practices” in performing a value chain activity and to learn how lower costs, fewer defects, or other outcomes linked to excellence can be achieved. Companies committed to benchmarking attempt to isolate and identify where their costs or outcomes are out of line with what they identify as the best practices of competitors or other companies or organizations that undertake similar tasks. Once identified and studied, this allows managers to change what they do or how they do these activities to achieve the new best practices “benchmarks.” General Electric sends managers to benchmark FedEx’s customer service practices, seeking to compare and improve on its own practices within a diverse set of businesses none of which compete directly with FedEx. It earlier did the same thing with Motorola, leading it to embrace Motorola’s Six Sigma program for quality control and continuous improvement.

### Comparison with Success Factors in the Industry

Industry analysis (see Chapter 4) involves identifying the factors associated with successful participation in a given industry. As was true for the evaluation methods discussed earlier, the key determinants of success in an industry may be used to identify a firm’s internal strengths and weaknesses. By scrutinizing industry competitors as well as customer needs, vertical industry structure, channels of distribution, costs, barriers to entry, availability of substitutes, and suppliers, a strategist seeks to determine whether a firm’s current internal capabilities represent strengths or weaknesses in new competitive arenas. The discussion in Chapter 4 provides a useful framework—five industry forces—against which to examine a firm’s potential strengths and weaknesses. General Cinema Corporation, the largest U.S. movie theater operator, determined that its internal skills in marketing, site analysis, creative financing, and management of geographically dispersed operations were key strengths relative to major success factors in the soft-drink bottling industry. This assessment proved accurate. Within 10 years after it entered the soft-drink bottling industry, General Cinema became the largest franchised bottler of soft drinks in the United States, handling Pepsi, 7UP, Dr Pepper, and Sunkist. Or consider large-scale discount retailing, where two key success factors in that industry are same-store sales growth and steady updating of store facilities or new locations. During the last decade, once-mighty Wal-Mart saw itself begin to fall behind its key rivals in same-store sales growth and age/quality of 60 percent of its U.S. stores. These two critical success factors drive and indicate the relative health of large discount retail firms. Firms with solid same-store sales growth



The Ink Wars: Kodak Takes Benchmarking Public versus Hewlett-Packard

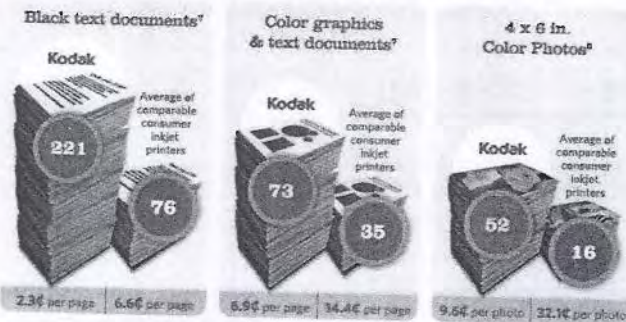


Kodak has long been a world leader in film processing, but it's a new player in the ink-jet printer industry, facing intense competition from entrenched players Hewlett-Packard, Epson, and Canon. Forgoing conventional wisdom based on the Gillette model to "give away" its printer and make money on consumables, the ink cartridges, Kodak seeks to differentiate itself and gain market share by tapping into consumer dissatisfaction with high ink prices by selling its printers for slightly more than the competition while selling its cartridges for less than half the price. Kodak is sharing its benchmarking results, suggesting its EasyShare printers have a lower total cost of ownership than competitors' models and that users will save substantially on consumables over the life of the printer.

Ink Value Comparison Chart

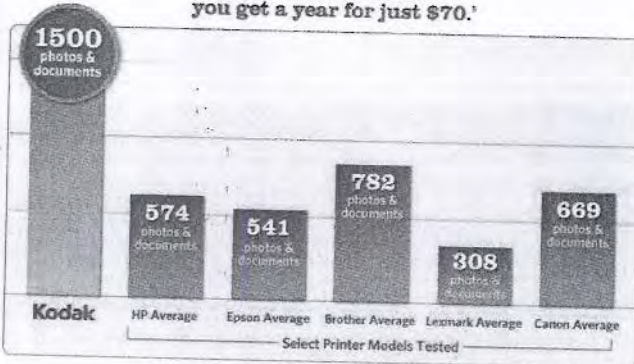
Kodak's promise to you is that you'll save up to 50% on everything you print compared to similar consumer inkjet printers<sup>10</sup>. View the information below for details on ink yield, as verified by third party test and quality assurance professionals.

What you get for every \$5 (USD) spent on ink<sup>8</sup>



Source: Reprinted with permission of Kodak, www.kodak.com.

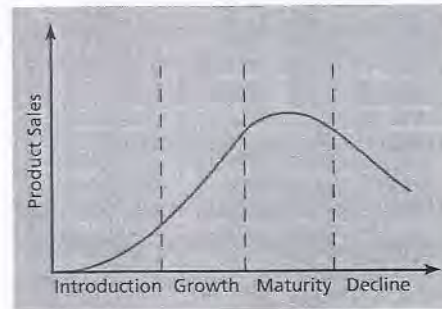
Look how much more you get a year for just \$70.<sup>1</sup>



indicate wise choices in location, attractiveness of their stores, and the merchandise inside them. Likewise, aging and probably substandard store facilities are typically not as efficient as newer ones, nor are they as inviting to shoppers. So Wal-Mart, Target, and other discount retailers conduct internal analyses in part by comparing themselves on these two



**EXHIBIT 6.13**  
Illustration of the  
Product Life Cycle



**product life cycle**  
A concept that describes a product's sales, profitability, and competencies that are key drivers of the success of that product as it moves through a sequence of stages from development, introduction to growth, maturity, decline, and eventual removal from a market.

(and surely others) critical success factors to interpret their strength or weakness relative to factors that drive industry success.

### Product Life Cycle

*Product life cycle* (PLC) is one way to identify success factors against which executives can evaluate their firm's competencies relative to its key product or products. The **product life cycle** is a concept that describes a product's sales, profitability, and competencies that are

key drivers of the success of that product as it moves through a sequence of stages from development, introduction to growth, maturity, decline, and eventual removal from a market. Exhibit 6.13 illustrates the "typical" product life cycle.

Core competencies associated with success are thought to vary across different stages of the product life cycle. Those competencies might include the following.

#### **Introduction Stage**

During this stage the firm needs competence in building product awareness and market development along with the resources to support initial losses:

- Ability to create product awareness.
- Good channel relationships in ways to get the product introduced quickly, gaining a first-mover advantage.
- Premium pricing to "skim" profitability if few competitors exist.
- Solid relationships with and access to trendsetting early adopters.
- Financial resources to absorb an initial cash drain and lack of profitability.

#### **Growth**

During this stage market growth accelerates rapidly, with the firm seeking to build brand awareness and establish/increase market share:

- Brand awareness and ability to build brand.
- Advertising skills and resources to back them.
- Product features that differentiate versus increased competitive offerings.
- Establishing and stabilizing market shares.
- Access to multiple distribution channels.
- Ability to add additional features.

#### **Maturity**

This stage sees growth in sales slow significantly, along with increased competition and similar product offerings leading the firm to need competencies that allow it to defend its market share while maximizing profit:

- Sustained brand awareness.
- Ability to differentiate products and features.
- Resources to initiate or sustain price wars.
- Operating advantages to improve slimming margins.
- Judgment to know whether to stay in or exit saturated market segments.



### *Decline*

At this point the product and its competitors start to experience declining sales and increased pressure on margins. Competencies needed are:

- Ability to withstand intense price-cutting.
- Brand strength to allow reduced marketing.
- Cost cutting capacity and slack to allow it.
- Good supplier relationships to gain cost concessions.
- Innovation skills to create new products or “re-create” existing ones.

The PLC is an interesting concept or framework against which executives might gauge the strength of relevant competencies. Caution is necessary in its use beyond that purpose, however. In reality, very few products follow exactly the cycle portrayed in the PLC model. The length in each stage can vary, the length and nature of the PLC for any particular product can vary dramatically, and it is not easy to tell exactly what stage a product might be in at any given time. Not all products go through each stage. Some, for example, go from introduction to decline. And movement from one stage to the next can be accelerated by strategies or tactics executives emphasize. For example, price-cutting can accelerate the movement from maturity to decline.

Product life cycles can describe a single product, a category of products, or an industry segment. Applying the basic idea to an industry segment (category of products) rather than a specific product has been a more beneficial adaptation of the PLC concept, providing executives with a conceptual tool to aid them in strategic analysis and choice in the context of the evolution of an industry segment in which their firm competes. So we examine the concept of stages of evolution of an industry segment or category of products as a tool of strategic analysis and choice in Chapter 8.

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### Summary

This chapter looked at several ways managers achieve greater objectivity and rigor as they analyze their company's internal resources and capabilities. Managers often start their internal analysis with questions like, How well is the current strategy working? What is our current situation? What are our strengths and weaknesses? SWOT analysis is a traditional approach that has been in use for decades to help structure managers' pursuit of answers to these questions. A logical approach still used by many managers today, SWOT analysis has limitations linked to the depth of its analysis and the risk of overlooking key considerations.

Three techniques for internal analysis have emerged that overcome some of the limitations of SWOT analysis, offering more comprehensive approaches that can help managers identify and assess their firm's internal resources and capabilities in a more systematic, objective, and measurable manner. Value chain analysis has managers look at and disaggregate their business as a chain of activities that occur in a sequential manner to create the products or services they sell. The value chain approach breaks down the firm's activities into primary and support categories of activities, then breaks these down further into specific types of activities with the objective to disaggregate activity into as many meaningful subdivisions as possible. Once done, managers attempt to attribute costs to each. Doing this gives managers very distinct ways of isolating the things they do well and not so well, and it isolates activities that are truly key in meeting customer needs—true potential sources of competitive advantage. Three circles analysis provides an additional technique, simple yet



insightful, for applying a customer needs perspective that should help improve the quality of a management team's internal analysis in understanding potential value-based sources of competitive advantage at the firm's disposal.

The third approach covered in this chapter was the resource-based view (RBV). RBV is based on the premise that firms build competitive advantage based on the unique resources, skills, and capabilities they control or develop, which can become the basis of unique, sustainable competitive advantages that allow them to craft successful competitive strategies. The RBV provides a useful conceptual frame to first inventory a firm's potential competitive advantages among its tangible assets, intangible assets, and its organizational capabilities. Once inventoried, the RBV provides four fundamental guidelines that managers can use to "value" these resources and capabilities. Those with major value, defined as ones that are valuable for several reasons, become the bases for building strategies linked to sustainable competitive advantages.

Finally, this chapter covered three ways objectivity and realism are enhanced when managers use meaningful standards for comparison regardless of the particular analytical framework they employ in internal analysis. This chapter is followed by two appendixes. The first provides a useful inventory of the types of activities in different functional areas of a firm that can be sources of competitive advantage. The second appendix covers traditional financial analysis to serve as a refresher and reminder about this basic internal analysis tool.

When matched with management's environmental analyses and mission priorities, the process of internal analysis provides the critical foundation for strategy formulation. Armed with an accurate, thorough, and timely internal analysis, managers are in a better position to formulate effective strategies. The next chapter describes basic strategy alternatives that any firm may consider.

## Key Terms

benchmarking, <i>p. 163</i>	primary activities, <i>p. 146</i>	tangible assets, <i>p. 154</i>
core competence, <i>p. 153</i>	product life cycle, <i>p. 165</i>	threat, <i>p. 140</i>
intangible assets, <i>p. 154</i>	resource-based view, <i>p. 153</i>	three circles analysis, <i>p. 151</i>
isolating mechanisms, <i>p. 157</i>	strength, <i>p. 141</i>	value chain, <i>p. 145</i>
opportunity, <i>p. 140</i>	SWOT analysis, <i>p. 140</i>	value chain analysis, <i>p. 145</i>
organizational capabilities, <i>p. 154</i>	support activities, <i>p. 146</i>	weakness, <i>p. 141</i>

## Questions for Discussion

1. Describe SWOT analysis as a way to guide internal analysis. How does this approach reflect the basic strategic management process?
2. What are potential weaknesses of SWOT analysis?
3. Describe the difference between primary and support activities using value chain analysis.
4. How is VCA different from SWOT analysis?
5. What is three circles analysis, and how might it help doing internal analysis?
6. What is the resource-based view? Give examples of three different types of resources.
7. What are three ways resources become more valuable? Provide an example of each.
8. Explain how you might use VCA, RBV, three circles analysis, and SWOT analysis to get a better sense of what might be a firm's key building blocks for a successful strategy.
9. Attempt to apply SWOT, VCA, RBV, and three circles analysis to yourself and your career aspirations. What are your major strengths and weaknesses? How might you use your knowledge of these strengths and weaknesses to develop your future career plans?



## Chapter 6 Appendix A

### Key Resources across Functional Areas

#### MARKETING

Firm's products-services: breadth of product line  
 Concentration of sales in a few products or to a few customers  
 Ability to gather needed information about markets  
 Market share or submarket shares  
 Product-service mix and expansion potential: life cycle of key products; profit-sales balance in product-service  
 Channels of distribution: number, coverage, and control  
 Effective sales organization: knowledge of customer needs  
 Internet usage; Web presence; e-commerce  
 Product-service image, reputation, and quality  
 Imaginativeness, efficiency, and effectiveness of sales promotion and advertising  
 Pricing strategy and pricing flexibility  
 Procedures for digesting market feedback and developing new products, services, or markets  
 After-sale service and follow-up  
 Goodwill—brand loyalty

#### FINANCIAL AND ACCOUNTING

Ability to raise short-term capital  
 Ability to raise long-term capital; debt-equity  
 Corporate-level resources (multibusiness firm)  
 Cost of capital relative to that of industry and competitors  
 Tax considerations  
 Relations with owners, investors, and stockholders  
 Leverage position; capacity to utilize alternative financial strategies, such as lease or sale and leaseback  
 Cost of entry and barriers to entry  
 Price-earnings ratio  
 Working capital; flexibility of capital structure  
 Effective cost control; ability to reduce cost  
 Financial size  
 Efficiency and effectiveness of accounting system for cost, budget, and profit planning

#### PRODUCTION, OPERATIONS, TECHNICAL

Raw materials' cost and availability, supplier relationships  
 Inventory control systems; inventory turnover  
 Location of facilities; layout and utilization of facilities  
 Economies of scale  
 Technical efficiency of facilities and utilization of capacity  
 Effectiveness of subcontracting use  
 Degree of vertical integration; value added and profit margin  
 Efficiency and cost-benefit of equipment

Effectiveness of operation control procedures: design, scheduling, purchasing, quality control, and efficiency  
 Costs and technological competencies relative to those of industry and competitors  
 Research and development—technology—innovation  
 Patents, trademarks, and similar legal protection

#### PERSONNEL

Management personnel  
 Employees' skill and morale  
 Labor relations costs compared with those of industry and competitors  
 Efficiency and effectiveness of personnel policies  
 Effectiveness of incentives used to motivate performance  
 Ability to level peaks and valleys of employment  
 Employee turnover and absenteeism  
 Specialized skills  
 Experience

#### QUALITY MANAGEMENT

Relationship with suppliers, customers  
 Internal practices to enhance quality of products and services  
 Procedures for monitoring quality

#### INFORMATION SYSTEMS

Timeliness and accuracy of information about sales, operations, cash, and suppliers  
 Relevance of information for tactical decisions  
 Information to manage quality issues: customer service  
 Ability of people to use the information that is provided  
 Linkages to suppliers and customers

#### ORGANIZATION AND GENERAL MANAGEMENT

Organizational structure  
 Firm's image and prestige  
 Firm's record in achieving objectives  
 Organization of communication system  
 Overall organizational control system (effectiveness and utilization)  
 Organizational climate; organizational culture  
 Use of systematic procedures and techniques in decision making  
 Top-management skill, capabilities, and interest  
 Strategic planning system  
 Intraorganizational synergy (multibusiness firms)



## Chapter 6 Appendix B

### Using Financial Analysis

One of the most important tools for assessing the strength of an organization within its industry is financial analysis. Managers, investors, and creditors all employ some form of this analysis as the beginning point for their financial decision making. Investors use financial analyses in making decisions about whether to buy or sell stock, and creditors use them in deciding whether or not to lend. They provide managers with a measurement of how the company is doing in comparison with its performance in past years and with the performance of competitors in the industry.

Although financial analysis is useful for decision making, some weaknesses should be noted. Any picture that it provides of the company is based on past data. Although trends may be noteworthy, this picture should not automatically be assumed to be applicable to the future. In addition, the analysis is only as good as the accounting procedures that have provided the information. When making comparisons between companies, one should keep in mind the variability of accounting procedures from firm to firm.

There are four basic groups of financial ratios: liquidity, leverage, activity, and profitability.

Depicted in Exhibit 6.B1 are the specific ratios calculated for each of the basic groups. Liquidity and leverage ratios represent an assessment of the risk of the firm. Activity and profitability ratios are measures of the return generated by the assets of the firm. The interaction between certain groups of ratios is indicated by arrows.

Typically, two common financial statements are used in financial analyses: the balance sheet and the income statement. Exhibit 6.B2 is a balance sheet and Exhibit 6.B3 an income statement for the ABC Company. These statements will be used to illustrate the financial analyses.

#### LIQUIDITY RATIOS

Liquidity ratios are used as indicators of a firm's ability to meet its short-term obligations. These obligations include any current liabilities, including currently maturing long-term debt. Current assets move through a normal cash cycle of inventories—sales—accounts receivable—cash. The firm then uses cash to pay off or reduce its current liabilities. The best-known liquidity ratio is the current ratio: current assets divided by current liabilities. For the ABC Company, the current ratio is calculated as follows:

$$\begin{aligned}\frac{\text{Current assets}}{\text{Current liabilities}} &= \frac{\$4,125,000}{\$2,512,500} = 1.64 \text{ (2012)} \\ &= \frac{\$3,618,000}{\$2,242,250} = 1.161 \text{ (2011)}\end{aligned}$$

Most analysts suggest a current ratio of 2 to 3. A large current ratio is not necessarily a good sign; it may mean that an organization is not making the most efficient use of its assets. The optimum current ratio will vary from industry to industry, with the more volatile industries requiring higher ratios.

Because slow-moving or obsolescent inventories could overstate a firm's ability to meet short-term demands, the quick ratio is sometimes preferred to assess a firm's liquidity. The quick ratio is current assets minus inventories, divided by current liabilities. The quick ratio for the ABC Company is calculated as follows:

$$\begin{aligned}\frac{\text{Current assets} - \text{Inventories}}{\text{Current liabilities}} &= \frac{\$1,950,000}{\$2,512,500} = 0.78 \text{ (2012)} \\ &= \frac{\$1,618,000}{\$2,242,250} = 0.72 \text{ (2011)}\end{aligned}$$

A quick ratio of approximately 1 would be typical for American industries. Although there is less variability in the quick ratio than in the current ratio, stable industries would be able to operate safely with a lower ratio.

#### LEVERAGE RATIOS

Leverage ratios identify the source of a firm's capital—owners or outside creditors. The term *leverage* refers to the fact that using capital with a fixed interest charge will "amplify" either profits or losses in relation to the equity of holders of common stock. The most commonly used ratio is total debt divided by total assets. Total debt includes current liabilities and long-term liabilities. This ratio is a measure of the percentage of total funds provided by debt. A total debt–total assets ratio higher than 0.5 is usually considered safe only for firms in stable industries.

$$\begin{aligned}\frac{\text{Total debt}}{\text{Total assets}} &= \frac{\$3,862,500}{\$7,105,000} = 0.54 \text{ (2012)} \\ &= \frac{\$3,667,250}{\$6,393,000} = 0.57 \text{ (2011)}\end{aligned}$$

The ratio of long-term debt to equity is a measure of the extent to which sources of long-term financing are provided by creditors. It is computed by dividing long-term debt by the stockholders' equity:

$$\begin{aligned}\frac{\text{Long-term debt}}{\text{Equity}} &= \frac{\$1,350,000}{\$3,242,500} = 0.42 \text{ (2012)} \\ &= \frac{\$1,425,000}{\$2,725,750} = 0.52 \text{ (2011)}\end{aligned}$$



**EXHIBIT 6.B1 Financial Ratios**

	Liquidity	Leverage	Activity	Profitability
	<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Current assets</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Current liabilities</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Current assets— inventory</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Current liabilities</div>			
		<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Total debt</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Total assets</div> <div style="text-align: center;"> </div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Long-term debt</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Equity</div>		
			<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Net sales</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Assets</div> <div style="text-align: center;"> </div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Net sales</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Fixed assets</div> <div style="text-align: center;"> </div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Net sales</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Inventory</div> <div style="text-align: center;"> </div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Net sales</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Accounts receivable</div>	
Return measures				<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Net income</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Sales</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Net income</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Total assets</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Net income</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Net worth</div>



**EXHIBIT 6.B2 ABC Company Balance Sheet as of December 31, 2011, and 2012**

	2012		2011	
<b>Assets</b>				
Current assets:				
Cash	\$	140,000	\$	115,000
Accounts receivable		1,760,000		1,440,000
Inventory		2,175,000		2,000,000
Prepaid expenses		50,000		63,000
Total current assets		<u>4,125,000</u>		<u>3,618,000</u>
Fixed assets:				
Long-term receivable		1,255,000		1,090,000
Property and plant	\$2,037,000		\$2,015,000	
Less: Accumulated depreciation	<u>862,000</u>		<u>860,000</u>	
Net property and plant		1,175,000		1,155,000
Other fixed assets		550,000		530,000
Total fixed assets		<u>2,980,000</u>		<u>2,775,000</u>
Total assets		<u>\$7,105,000</u>		<u>\$6,393,000</u>
<b>Liabilities and Stockholders' Equity</b>				
Current liabilities:				
Accounts payable		\$1,325,000		\$1,225,000
Bank loans payable		475,000		550,000
Accrued federal taxes		675,000		425,000
Current maturities (long-term debt)		17,500		26,000
Dividends payable		20,000		16,250
Total current liabilities		<u>2,512,500</u>		<u>2,242,250</u>
Long-term liabilities		1,350,000		1,425,000
Total liabilities		<u>3,862,500</u>		<u>3,667,250</u>
Stockholders' equity:				
Common stock				
(104,046 shares outstanding in 2012;				
101,204 shares outstanding in 2011)		44,500		43,300
Additional paid-in-capital		568,000		372,450
Retained earnings		2,630,000		2,310,000
Total stockholders' equity		<u>3,242,500</u>		<u>2,725,750</u>
Total liabilities and stockholders' equity		<u>\$7,105,000</u>		<u>\$6,393,000</u>

**EXHIBIT 6.B3 ABC Company Income Statement for the years ending December 31, 2011, and 2012**

	2012		2011	
Net sales		\$8,250,000		\$8,000,000
Cost of goods sold	\$5,100,000		\$5,000,000	
Administrative expenses	1,750,000		1,680,000	
Other expenses	<u>420,000</u>		<u>390,000</u>	
Total		<u>7,270,000</u>		<u>7,070,000</u>
Earnings before interest and taxes		980,000		930,000
Less: Interest expense		210,000		210,000
Earnings before taxes		770,000		720,000
Less: Federal income taxes		360,000		325,000
Earnings after taxes (net income)		<u>\$ 410,000</u>		<u>\$ 395,000</u>
Common stock cash dividends		\$ 90,000		\$ 84,000
Addition to retained earnings		\$ 320,000		\$ 311,000
Earnings per common share		\$ 3.940		\$ 3.90
Dividends per common share		\$ 0.865		\$ 0.83



## ACTIVITY RATIOS

Activity ratios indicate how effectively a firm is using its resources. By comparing revenues with the resources used to generate them, it is possible to establish an efficiency of operation. The asset turnover ratio indicates how efficiently management is employing total assets. Asset turnover is calculated by dividing sales by total assets. For the ABC Company, asset turnover is calculated as follows:

$$\begin{aligned}\text{Asset turnover} &= \frac{\text{Sales}}{\text{Total assets}} = \frac{\$8,250,000}{\$7,105,000} = 1.16 \text{ (2012)} \\ &= \frac{\$8,000,000}{\$6,393,000} = 1.25 \text{ (2011)}\end{aligned}$$

The ratio of sales to fixed assets is a measure of the turnover on plant and equipment. It is calculated by dividing sales by net fixed assets.

$$\begin{aligned}\text{Fixed asset turnover} &= \frac{\text{Sales}}{\text{Net fixed assets}} = \frac{\$8,250,000}{\$2,980,000} = 2.77 \text{ (2012)} \\ &= \frac{\$8,000,000}{\$2,775,000} = 2.88 \text{ (2011)}\end{aligned}$$

Industry figures for asset turnover will vary with capital-intensive industries, and those requiring large inventories will have much smaller ratios.

Another activity ratio is inventory turnover, estimated by dividing sales by average inventory. The norm for U.S. industries is 9, but whether the ratio for a particular firm is higher or lower normally depends on the product sold. Small, inexpensive items usually turn over at a much higher rate than larger, expensive ones. Because inventories normally are carried at cost, it would be more accurate to use the cost of goods sold in place of sales in the numerator of this ratio. Established compilers of industry ratios, such as Dun & Bradstreet, however, use the ratio of sales to inventory.

$$\begin{aligned}\text{Inventory turnover} &= \frac{\text{Sales}}{\text{Inventory}} = \frac{\$8,250,000}{\$2,175,000} = 3.79 \text{ (2012)} \\ &= \frac{\$8,000,000}{\$2,000,000} = 4.00 \text{ (2011)}\end{aligned}$$

The accounts receivable turnover is a measure of the average collection period on sales. If the average number of days varies widely from the industry norm, it may be an indication of poor management. A too-low ratio could indicate the loss of sales because of a too-restrictive credit policy. If the ratio is too high, too much capital is being tied up in accounts receivable, and management may be increasing the chance of bad debts. Because of varying industry credit policies, a comparison for the firm over time or within an industry is the only useful analysis. Because information on credit sales for other firms generally is unavailable, total sales must be used. Because not all firms have the same percentage of credit sales, there is only approximate comparability among firms:

$$\begin{aligned}\text{Accounts receivable turnover} &= \frac{\text{Sales}}{\text{Accounts receivable}} \\ &= \frac{\$8,250,000}{\$1,760,000} = 4.69 \text{ (2012)} \\ &= \frac{\$8,000,000}{\$1,440,000} = 5.56 \text{ (2011)}\end{aligned}$$

$$\begin{aligned}\text{Average collection period} &= \frac{360}{\text{Accounts receivable turnover}} \\ &= \frac{360}{4.69} = 77 \text{ days (2012)} \\ &= \frac{360}{5.56} = 65 \text{ days (2011)}\end{aligned}$$

## PROFITABILITY RATIOS

Profitability is the net result of a large number of policies and decisions chosen by an organization's management. Profitability ratios indicate how effectively the total firm is being managed. The profit margin for a firm is calculated by dividing net earnings by sales. This ratio is often called *return on sales* (ROS). There is wide variation among industries, but the average for U.S. firms is approximately 5 percent.

$$\begin{aligned}\frac{\text{Net earnings}}{\text{Sales}} &= \frac{\$410,000}{\$8,250,000} = 0.0497 \text{ (2012)} \\ &= \frac{\$395,000}{\$8,000,000} = 0.0494 \text{ (2011)}\end{aligned}$$

A second useful ratio for evaluating profitability is the *return on investment*—or ROI, as it is frequently called—found by dividing net earnings by total assets. The ABC Company's ROI is calculated as follows:

$$\begin{aligned}\frac{\text{Net earnings}}{\text{Total assets}} &= \frac{\$410,000}{\$7,105,000} = 0.0577 \text{ (2012)} \\ &= \frac{\$395,000}{\$6,393,000} = 0.0618 \text{ (2011)}\end{aligned}$$

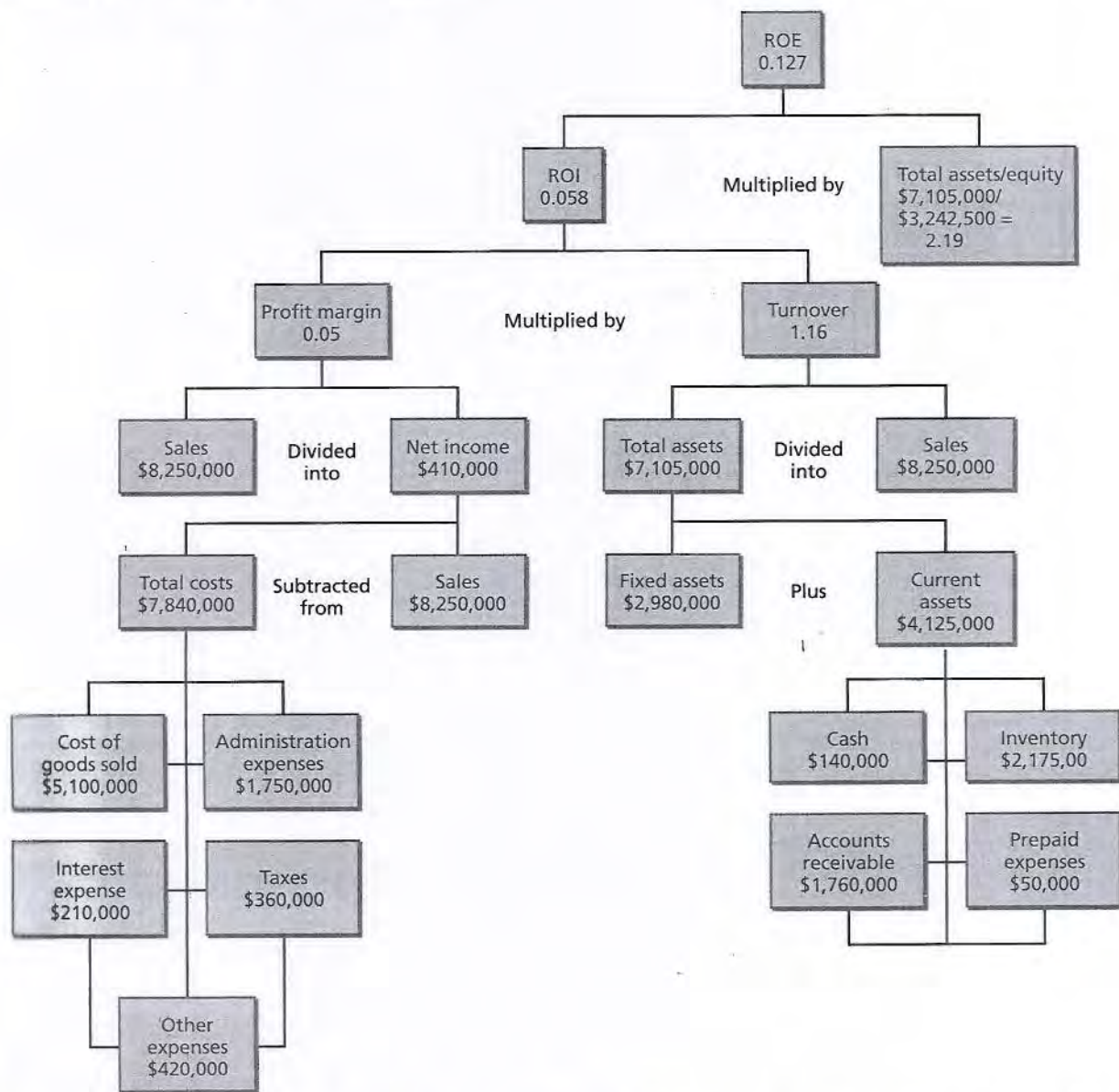
The ratio of net earnings to net worth is a measure of the rate of return or profitability of the stockholders' investment. It is calculated by dividing net earnings by net worth, the common stock equity and retained earnings account. ABC Company's *return on net worth* or *return on equity*, also called ROE, is calculated as follows:

$$\begin{aligned}\frac{\text{Net earnings}}{\text{Net worth}} &= \frac{\$410,000}{\$3,242,500} = 0.1264 \text{ (2012)} \\ &= \frac{\$395,000}{\$2,725,750} = 0.1449 \text{ (2011)}\end{aligned}$$

It is often difficult to determine causes for lack of profitability. The Du Pont system of financial analysis provides management with clues to the lack of success of a firm. This financial tool brings together activity, profitability, and



EXHIBIT 6.B4 Du Pont's Financial Analysis



leverage measures and shows how these ratios interact to determine the overall profitability of the firm. A depiction of the system is set forth in Exhibit 6.B4.

The right side of the exhibit develops the turnover ratio. This section breaks down total assets into current assets (cash, marketable securities, accounts receivable, and inventories) and fixed assets. Sales divided by these total assets gives the turnover on assets.

The left side of the exhibit develops the profit margin on sales. The individual expense items plus income taxes are subtracted from sales to produce net profits after taxes. Net

profits divided by sales gives the profit margin on sales. When the asset turnover ratio on the right side of Exhibit 6.B4 is multiplied by the profit margin on sales developed on the left side of the exhibit, the product is the return on assets (ROI) for the firm. This can be shown by the following formula:

$$\frac{\text{Sales}}{\text{Total assets}} \times \frac{\text{Net earnings}}{\text{Sales}} = \frac{\text{Net earnings}}{\text{Total assets}} = \text{ROI}$$

The last step in the Du Pont analysis is to multiply the rate of return on assets (ROI) by the equity multiplier, which is the ratio of assets to common equity, to obtain the rate of return