



Finding and Evaluating the Opportunity: Is It Real and Large Enough?

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Finding and Evaluating the Opportunity

Is It Real and Large Enough?

Key Topics Covered in This Chapter

- *five characteristics of a genuine business opportunity*
- *where to look for profitable opportunities*
- *the process of opportunity evaluation*

FRED MANAGED THE service department of a large automobile dealer of Japanese cars. With five years on the job as manager and many more as a mechanic, Fred understood the economics of the auto service business, and he saw what might be an opportunity.

“We’re selling more and more hybrid engine cars,” he told his brother at a family gathering. “The national organization estimates that hybrids will account for thirty to forty percent of our unit sales three years from now. And two other automakers are moving into hybrids. I think that these gasoline-electric hybrids will define the automobile market for the next twenty years or so, until fuel cell technology or some other technology is commercialized.”

“How’s that going to affect your service department?” the brother asked.

“Quite a bit,” Fred responded. “We’ve already brought in new diagnostic machines and trained people on hybrid electronic systems and power trains—which are substantially different than those of traditional cars. And we’ll be very busy in the years ahead, since we’ll get *all* the repair and maintenance business on these cars for the foreseeable future, even after warranties have expired. Traditional mechanics don’t know how to work on hybrids, and many will never learn.”

Later that day, Fred reflected on this conversation. “There may be an opportunity here,” he told himself. After new hybrid vehicle warranties expired, he reasoned, owners would have no options for repair and maintenance except high-priced dealer service departments like his. Neighborhood mechanics wouldn’t be equipped or trained to deal with these cars for many years. Many owners would

welcome a lower-priced alternative—one that specialized in the repair and maintenance of hybrid engine vehicles.

With his experience and knowledge of service department costs to guide him, Fred began to measure the breadth of his newfound business opportunity. He had industry estimates of hybrid vehicle sales; he knew which diagnostic and other equipment was needed—and what it cost; and he was intimately familiar with the cost of running a fully staffed service facility. He began putting these numbers together, and his optimism grew as he did so. Before long, Fred was envisioning a high-quality service center called The Hybrid Auto Care Center. And if that proved successful, he could foresee a chain of cloned outlets—perhaps a national franchise.

Fred had recognized a business opportunity, the first step in the entrepreneurship process. This chapter will help you explore it.

Characteristics of an Opportunity

Entrepreneurial people are always generating ideas for potential businesses. But how can they sift through these ideas and recognize the few that represent true business opportunities? One way to begin is to define the characteristics of a genuine opportunity.

Jeffrey Timmons, a leading expert on entrepreneurship, has described an opportunity as a product or service that

1. creates significant value for customers by solving a significant problem or filling a significant unmet need for which they are willing to pay a premium
2. offers significant profit potential to the entrepreneur and investors—enough to meet their risk/reward expectations
3. represents a good fit with the capabilities of the founder and the management team—that is, something they have the experience and skills to pursue¹
4. is durable in the sense that the opportunity for profits will persist over a reasonable length of time—that is, is not based on a momentary fad or need that will quickly disappear²

We add a fifth characteristic to this commendable list, this one suggested by Alfred E. Osborne Jr., director of UCLA's Price Center for Entrepreneurial Studies:

5. The opportunity is amenable to financing. One would think that a promising commercial idea would always find financial backing, but experience teaches us otherwise.

Now let's examine each segment of this definition in detail.

Creating Value

Customers will pay for a product or service only if they perceive a benefit whose value exceeds its cost. And the greater the perceived value, the more they will pay. CEMEX, a global producer of cement and ready-mixed cement, does not have a unique product or service. Cement is a commodity product. Construction companies can phone almost any cement company and schedule the delivery of ready-mixed cement to their building sites. The only problem is that delivery is often unreliable, or the vendor can promise delivery only within a three-hour window. Unfortunately, that's not good enough for many customers. A delivery that fails to show up or that makes a construction crew of twenty people stand around waiting creates havoc with the schedule and causes labor costs to escalate.

To create value for its customers, CEMEX adopted a concept popularized by pizza shops: twenty-minute delivery guaranteed, or CEMEX would pay the bill. Its ability to execute this concept has allowed the company to grow and prosper. As described by consultants David Bovet and Joseph Martha, "Cemex offers delivery reliability in an industry that is chronically unreliable. It meets its delivery commitments 90 percent of the time versus the 34 percent commonly achieved by its competitors. This super-reliability allows CEMEX to charge a premium in most markets, contributing to operating profit levels 50 percent higher than those of its key competitors."³ Yes, even something as mundane as cement can create customer value and become the basis of a competitive enterprise,

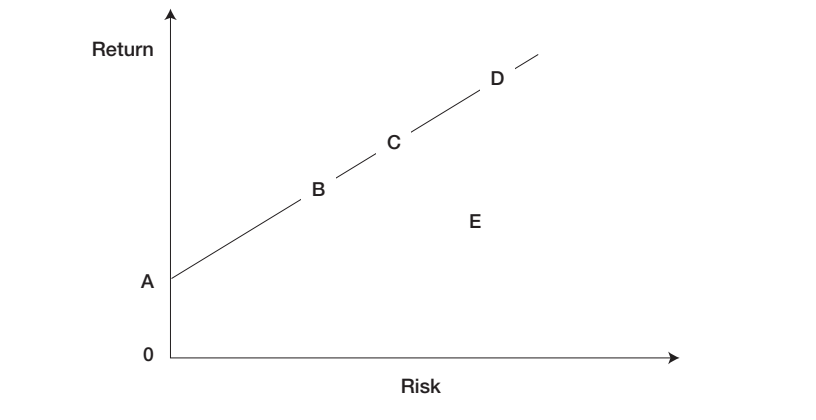
Significant Profit Potential

To qualify as an opportunity, a business must offer the potential for significant profit. But what is “significant”? Each person will have a different view. The person seeking a lifestyle business will look for something capable of providing a comfortable livelihood—perhaps one that can be passed on to children as they mature. Truly ambitious entrepreneurs and their financial backers will seek much more. For them, significant profit potential is likely to be a business capable of turning a profit within two or three years, \$10 million in sales within five years, with a 10–12 percent profit margin, and, if all goes well, 20 percent annual revenue growth over the next five years. Anything with less potential may not interest them.

Risk must play a part in every consideration of profit opportunity because the two tend to go hand in hand. Corporate employees often fret about workplace insecurity: “I could lose my job if the economy doesn’t improve.” True, people who are not protected by employment contracts run the risk of being fired or furloughed. For the people who start new businesses, however, the risks are much, much higher. If things don’t work out, they lose both their employment *and* the personal savings they’ve invested. Investors are similarly at risk; in the worst case they can lose 100 percent of their invested capital. Given the high risks of entrepreneurship, there should be correspondingly high potential rewards associated with an opportunity.

There is a very real trade-off between risk and return, as shown in figure 2-1. Notice the association between risk and return. Point A in the figure has zero risk and a very low return. Points B, C, and D provide the investor or entrepreneur with rewards commensurate with the risk. Point E—in fact, any point below the diagonal line—is to be avoided because it does not fully reward the investor or entrepreneur for the risks taken. Thus, there’s no point in investing in a business that promises no more than a 5 percent return when a person could do almost as well by investing in ten-year U.S. Treasury bonds, which have no default risk.

FIGURE 2-1

The Risk/Return Trade-Off

The profit opportunity can be measured by means of a pro forma income statement. (If you are unfamiliar with the income statement or other financial statements used in business, see appendix A.) A pro forma income statement provides a best estimate of future revenues, expenses, and taxes for one or more years. The net result shown on this statement is the anticipated profit, the entrepreneur's measure of opportunity for those years. Because lenders and investors will want to see a set of these statements, let's create a pro forma income statement using The Hybrid Auto Care Center as an example (table 2-1). Here, Fred has forecast results during the first three years of operation.

In Fred's case, the first year of operation shows a net loss of more than \$21,000, even though he has earmarked a very small salary for himself. The magnitude of the opportunity grows substantially in succeeding years, however, as the volume of business (i.e., revenues) increases. If volume continues to build in subsequent years, a second facility—if not a regional chain—might be feasible.

Naturally, the opportunity reflected in a pro forma income statement is only as valid as the numbers it contains. A person such as Fred, who conceives of a business that is closely or directly related to his current experience, can usually develop reliable expense num-

TABLE 2-1

The Hybrid Auto Care Center, Pro Forma Income Statement for Years Ending 31 December 2005, 2006, and 2007

	2005	2006	2007
Revenues	\$250,000	\$450,000	\$700,000
Expenses:			
Owner's salary	35,000	50,000	70,000
Employee salaries	70,000	90,000	150,000
Benefits	26,250	35,000	55,000
Workers insurance	7,000	8,000	14,000
Equipment loan 1*	42,000	42,000	42,000
Equipment loan 2**			14,000
Insurance	3,500	3,800	4,000
Shop rent	20,000	20,000	20,000
Utilities	5,500	5,700	6,000
Other	5,000	8,000	15,000
Parts & materials	50,000	90,000	140,000
Advertising	7,000	8,000	9,000
Total expenses	\$271,250	\$360,500	\$539,000
Profits before tax	(\$21,250)	\$89,500	\$161,000
Tax	0	26,850	48,300
Profits after tax	<u>(\$21,250)</u>	<u>\$62,650</u>	<u>\$112,700</u>

* \$300,000 loan@9% 12 years

** \$100,000 loan@9% 12 years

bers. Labor and benefits costs, interest expenses, rent costs per square foot, and so forth are within the scope of his experience. Revenue projections are another matter. In the absence of existing customers, revenue figures and revenue growth must be assumed. And therein lies the most dangerous trap for the entrepreneur.

A Good Fit

A *good fit* is a situation in which the entrepreneur and management team have the managerial, financial, and technical capabilities, along

Other Traps for the Intrepid Entrepreneur

An optimistic revenue projection is the most dangerous trap for the prospective business owner, but not the only one. People often underestimate the amount of advertising they must do to show up on customers' radar. Marketing experts warn against single ad strategies. Most people, they say, must see a company's name repeatedly before they will do business with it. Retailer L.L. Bean, for example, figures that it must send six or seven direct mail catalogs before a prospective customer places an order.

Estimating the space and personnel required to operate a business can also be a trap. In manufacturing and retailing, for example, most people will usually look to their assumed level of sales to determine the amount of space and staffing they will require. The link between sales and these other factors may be inaccurate, resulting in the owner's renting too much space and hiring too many people—or the reverse.

with the personal commitment, that are needed to address a business opportunity. Fred, the fictional character in our hybrid car service example, appears to have a good fit with the opportunity he has identified. He already understands the technology and knows how to deal with it. He is also experienced in the management of an auto service business. Like Fred, Young Bill Gates found a good fit when he began his software business at the dawn of the personal computer era. He understood programming, was committed to the emerging computer industry, and had developed a level of management ability and sales sense commensurate with his early-stage business. But not every entrepreneur or manager has a good fit with the opportunity.

Durability

Some opportunities are durable—that is, they are opportunities that business people can exploit over long periods. They are long-lasting and destined to grow over time. The software industry has demon-

strated this durability, as has cell phone service. Others are too fleeting to sustain profitability. Do you remember the Pet Rock, the gag-gift phenomenon of the 1970s? For a few months, people all over the United States were buying Pet Rocks for their friends. But that was the end of it. Most opportunities associated with adolescent fads and fashion are equally short-lived. By the time customer requirements are defined and addressed, teenagers have lost interest and moved on to the next new thing.

Teenagers are not the only fickle customers. Consider the U.S. golfing boom of the 1990s. Golf suddenly became very popular with young and middle-aged adults, mostly men. But before you could learn to spell Annika Sorenstam, interest waned. The sport continued to command a sizable spectator audience, but the number of active amateur participants declined every year between 1999 and 2003. Equipment makers and golf course owners around the country felt the pinch, and many went into bankruptcy. Especially hard hit were the municipalities and private clubs that built new or expanded facilities. By the time these links opened for business, the window of commercial opportunity had slammed shut.

Some opportunities lack durability even though demand remains high for a long time. Low barriers to entry create these situations. A visible opportunity with low entry barriers to new competition is a deadly combination. The supply of the product or service can quickly exceed demand, resulting in price reductions and business distress all around.

Financing

By definition, a business opportunity must be amenable to financing. One would think that any promising commercial idea would find financial backing—from the idea generator, friends and family, bankers, and so forth. But experience does not bear this out. Between 2000 and 2004, for example, entrepreneurs in the biotech industry had plenty of ideas for new vaccines and therapies. Several years earlier, these great ideas would have found the financing they needed, but they were starved for financing during the period in question because of a lack of investor confidence.

Before You Leap

When you've identified a business opportunity, size it up in terms of these characteristics.

- Does it create value for its intended customers—enough so that they will pay for it, and hopefully pay a premium price?
- Can you profitably deliver your product or service?
- Is the potential profitability commensurate with the associated business risks?
- Is there a good fit between the opportunity and the capabilities of you and your team?
- Will the window of opportunity stay open long enough for you to exploit it? You must avoid a situation that will evaporate in a short time. You must also avoid situations where competitors can quickly enter the field.
- Is your idea amenable to financing?

Before moving on, ask yourself how well Fred's idea for a hybrid vehicle care center measures up to these definitions of a credible opportunity. Do the same for any opportunities you've been considering.

Where to Look for Opportunities

Opportunities for profitable enterprises are always opening in free-market economies, and alert entrepreneurs are eager to identify them. But where are the best places to look? The answer is to look (1) where things are changing and (2) under the radar of big, powerful companies.

New Knowledge and Technological Change

Enterprise follows in the wake of expanding knowledge and technical change. New knowledge in the field of microbiology, for exam-

ple, has spawned hundreds of new biotech enterprises and their supplier companies. Technology created in MIT's research labs has produced hundreds of high-tech business start-ups in the Boston area. Meanwhile, in the centuries-old steel industry, Nucor Corporation's success in producing a workable system of continuous casting has led to the rise of new mini-mills.

Regulatory Change

The 1980s deregulation of the U.S. telephone industry—namely, the court-ordered breakup of the AT&T/Bell monopoly—provides a powerful example of how regulatory change creates business opportunities. That set of events created a tidal wave of innovation and new company start-ups, including new long-distance carriers such as Sprint and MCI. Later, dozens of cell phone companies and equipment producers emerged. Similarly, deregulation of the U.S. airline industry produced many regional start-ups, including Southwest Airlines and JetBlue. The same explosion of product and service innovations followed the lifting of government-mandated commission rates in the securities industries of the United States and the United Kingdom.

Social Turmoil and Civic Failure

People want the best for themselves and their children. When the public sector fails in its responsibilities, people often take those responsibilities into their own hands and patronize companies that can help them. Thus, perceptions of rising crime rates and the documented mediocrity of many public school systems have opened a floodgate of opportunities for entrepreneurs—for car alarms, bullet-proof vests, home security systems, private schools and child day care, and tutoring systems, to name only a few.

Changing Tastes

Big companies are so invested in their existing products and so consumed with operational details that they are often slow in responding to changing tastes among customers. Their slowness results in unmet needs that entrepreneurs can exploit.

For example, few non-European adults drank wine until the 1960s. But after they developed a taste for it and grew more discerning, opportunities for small, high-quality vintners exploded in the United States, Chile, Australia, and New Zealand. European firms were unable to meet this rising demand. We witness a similar situation today as North Americans and populations in northern Europe are beginning to recognize the nutritional and culinary benefits of olive oil, a staple of the heart-healthy Mediterranean diet. Olive oil consumption in the United States has been racing ahead at roughly a 20 percent annual growth rate as consumers move away from butter, margarine, and other cooking fats. This change is opening opportunities for quality olive oil producers such as Long Meadow Ranch and McAvoy Ranch in northern California, Hacienda La Laguna outside Baeza, Spain, and many other new producers around the globe.

Entrepreneurs can spot such opportunities by watching trend-setters: outstanding chefs, upwardly mobile and highly educated young adults, and cutting-edge health care providers. Their choices and recommendations to others often contain the seeds of broad-based trends.

The Quest for Convenient Solutions

Modern urban life has provided many households with substantial discretionary income but has robbed them of discretionary time. Particularly in Japan and the United States, where vacation days are few and leisure hours are eaten up by commuting and chores, people are receptive to convenient solutions to life's annoyances. They will gladly pay someone for servicing the car, cleaning the house, steam-cleaning the carpets, preparing meals, giving the dog a midday walk, providing after-school child care, painting and decorating, and on and on. Up until the early twentieth century, middle-class U.S. families employed live-in servants—usually immigrant girls—to handle these many chores. Today they outsource those tasks to entrepreneurial caterers, pet and lawn care companies, grocery delivery ser-

vices (e.g., Peapod), house cleaning specialists, and so forth. How many of these enterprises do you patronize today? Can you think of convenient solutions that you could provide to households like yours?

Under the Radar

Another place to look for promising opportunities is under the radar of big companies. Consider the plight of one enterprising corporate middle manager. She has just discovered an opportunity for a new line of business, which she has taken to her boss, the vice president of product development for Gigantic Electronics Corporation. The first words out of his mouth are straightforward: “What’s the revenue potential of this business five years from now?”

“I’m estimating eight million to ten million dollars by the end of year five,” she says.

“That’s chump change to us,” he laughs. “Talk to me again when you have something with a revenue potential of a hundred million or more. Anything less is too small for us.”

The VP isn’t necessarily being arrogant or short-sighted; huge corporations are handicapped in dealing with what are, to them, small business opportunities. Their human and physical assets are configured to address large markets. Thus, many worthy projects are rejected. These discarded opportunities, however, may be gold mines for small, entrepreneurial businesses. In fact, many managers and engineers leave their companies to exploit projects that their employers have rejected as too small.

Ironically, the big, inflexible corporations that will not pursue small, entrepreneurial ventures often end up writing huge checks to acquire these same ventures after they are successful and have grown substantially. The case of Snapple is instructive. Snapple was an entrepreneurial firm that developed a very successful ice-tea and fruit-drink business. And it was growing fast. Between 1991 and 1994, its revenues skyrocketed from \$95 million to \$516 million. Instead of starting its own ice-tea and fruit-drink enterprise, U.S. food giant Quaker, a unit of PepsiCo, acquired Snapple in 1994 for \$1.7 billion.

Avoid This Mistake

Many people confuse their personal interests with real business opportunities. For example, Sheila loves to ski in the winter and bicycle during the rest of the year. She has a passion for these activities and substantial expertise in selecting, using, and repairing the equipment. She is also unhappy with her job as a securities analyst. So Sheila is thinking about opening a ski/bicycle shop in a small town in Vermont, near her favorite ski area. "If this works out," she tells herself, "I might be able to expand to other ski areas in New England."

Sheila's passion for skiing and biking is a big plus. Passion and commitment make it possible for business owners to put in the long days that success requires. But is there a significant unmet demand for her goods and services? Does this business have real profit potential? Does she have the experience or know-how to successfully manage a retail store? These are fundamental questions that many would-be entrepreneurs fail to ask—or answer—before leaping in. Thus, we see people opening bookstores because they like being around books and the people who read them. Other people open pet stores because they love animals.

A passion for a product or service is wonderful, but it's no substitute for a sound business opportunity.

From Identification to Evaluation

Identifying an opportunity is only the first step in the entrepreneurial process. The next is evaluation, whose purpose is to reveal the scope and details of the perceived opportunity. To be systematic in your evaluation, follow these steps:

1. Begin with a thorough examination of the market for the business's product or service.
2. Assess the current and anticipated level of competition and define the strategy that would give you an edge.

3. Look at the economics of the opportunity.
4. Consider the financial and human resources required for success.

The Market

Many entrepreneurs are so excited about what their new gizmo or service can do that they forget to assess its value to customers. But in the end, the business can succeed only if enough people recognize that value and are willing to pay for it. Thus, the entrepreneur should begin by asking customer and market questions, such as the following. Try to answer each of these questions about an opportunity you've identified.

- How will it benefit customers?
- How many people stand to benefit? In other words, what is the size of the market?
- Is the market stable or growing? If it's growing, at what annual rate?
- What percentage of the total market could the product (service) reasonably hope to capture over the next few years?
- Is another product or service from competitors available to fill part of this demand?
- Are potential customers aware of their need for this product (or service), or is the need latent—that is, an undiscovered need?
- Who exactly are the potential customers? Can you name them? Can you describe them? If you cannot, perhaps your business opportunity is strictly theoretical.
- How can you reach the potential customers and make a transaction—directly, through distributors, or through retail stores?
- What is the utility of the product (or service) relative to substitutes? For example, a cell phone provides telephone service when customers are moving from place to place. But users of landline phones don't need a second line to handle DSL service.

Hopefully, you were able to answer each of the previous questions without too much head-scratching. If you cannot, it's time to start digging for the answers.

Let's consider how our hypothetical new venture, Fred's Hybrid AutoCare Center, might fare in this type of assessment. Table 2-2 shows how Fred might have sized up his opportunity.

The Competitive Situation

Now try to answer the next set of questions. These address the competitive situation. If you're entering an existing market, you'll be up

TABLE 2-2

Market Evaluation for The Hybrid Auto Care Center

Customer benefit	• Lower price than equivalent service at the dealer • Greater expertise. We service only hybrid-powered vehicles and have all the right equipment.
Market size	• Currently (2004) 220,000 vehicles on the road—Toyotas and Hondas. Ford planning to enter the market beginning 2005; GM and DaimlerChrysler to follow in 2006–2007. Industry estimates point to 1.7 million on the road by 2007, and 2.6 million by 2010.
Market growth rate	• As of 2004, calculated at 23 percent compound annual rate.
Market share	• Share of service business within a 20-mile radius estimated at 18 percent during the first five years.
Competitors	• Main competition would be dealers, who would get most of the business during warranty periods. • Other new hybrid specialty shops likely to open to service the rising demand. • Few neighborhood garages would have the training or equipment to provide service.
Customer awareness of need	• Will become obvious as warranty periods expire and the high cost of dealer service becomes clear.
Customers	• All owners of hybrid-powered vehicles of all makes and models.
Reaching customers	• Advertising to list of hybrid owners in the service area • Free informational owner clinics ("Understanding Your Hybrid Vehicle")
Product utility	• Cost and quality

against competitors. Some may be entrenched and capable. If your market is new and attractive, you can be sure that it will attract other profit-seekers—like you.

- How are customers currently satisfying the need you've identified (e.g., with a landline phone instead of a cell phone)?
- What are the strengths and weakness of the main competitors (e.g., high quality, poor customer service, high price)?
- How would a smart competitor respond to your entering the market (e.g., by reducing price, making product improvements)?
- Are the barriers to market entry high or low? Low barriers usually mean that competitors will continue to enter the market until returns are driven to a low level. If entry barriers are high, how will you surmount them?
- Have current competitors shown themselves to be agile and responsive to customer needs and technical change?
- What is the single *worst* thing that a competitor could do to your business prospects (e.g., drop the price 20 percent)? When you've answered this question, think about how that worst thing would affect your prospects for success and how you would respond. What strategy on pricing, positioning, service, distribution, or product features would give you a sustainable competitive advantage?

You should thoroughly examine and satisfactorily answer each of these questions with documentation. If you will be seeking outside capital, those documented answers are essential.

Underlying Economics

Every business rests on an economic structure, and that structure influences its ability to compete and succeed. Some businesses—such as supermarkets—have a very low *profit margin* on sales, but the successful ones have very large sales volumes. (Expressed as a percentage, profit margin is profit divided by sales revenue.) On the other

end of the spectrum, we have, for example, custom furniture makers who don't sell many items but generally make a large profit on each sale. What is the profit structure of your business opportunity?

Think too about the cost structure of the proposed business. Some businesses operate with high fixed costs and low variable costs. *Fixed costs* are costs that stay about the same no matter how many goods or services are produced. For example, an automobile engine plant has high fixed costs—for debt payments, insurance, specialized equipment, and salaried supervisors. These costs remain roughly the same whether the plant produces one hundred engines per year or ten thousand. *Variable costs*, in contrast, are those that rise or fall with the level of output. These include the cost of materials, energy, and, in many cases, labor. It is important to understand these costs because (1) they will help you understand the basis of profitability, and (2) if you know the revenues you'll receive from each unit sale, you will be able to determine the *breakeven point* of your operations—that is, the number of units you'll have to sell before you earn a profit. (See Appendix B for an explanation of the breakeven point and information on how to calculate it.)

Enterprises with high fixed costs and low variable costs (e.g., high-volume manufacturers) generally have high breakeven points but enjoy high profitability on sales after they get past that point. Those with low fixed costs and high variable costs (e.g., a technical service firm) have low breakeven points but relatively low profitability on sales thereafter.

Understanding the economics of a business opportunity is critically important. The next set of questions will help you think through and evaluate the economics of your opportunity. Try to provide a complete answer to each.

- Will the business be a price setter or a price taker? What are the constraints on pricing what the business sells?
- What is the supply/demand situation relative to your product or service?
- Is demand elastic or inelastic—that is, would a price increase by you dramatically reduce buyer demand (elastic), or would demand be only slightly affected (inelastic) in the short run?

The Bottom Line

After you've identified an opportunity and evaluated it in terms of the market, competition, and economic value, ask yourself these two questions:

1. Is it still attractive in terms of the risk/return relationship described in figure 2-1?
2. Is it more or less attractive than other opportunities available to you?

Don't overlook these questions. Always consider the attractiveness of an opportunity relative to others you could pursue—including doing nothing. Remember that leaving your capital in a money-market fund earning an anemic 2 percent interest is an alternative, and one that you can follow until an opportunity with all the right characteristics appears on your radar.

- What substitutes do prospective customers have for your product or service?
- Will the business be dominated by fixed or variable costs?
- To what extent can suppliers and employees enforce cost increases on the proposed business?

Summing Up

- A business opportunity is one that (1) creates significant value for customers, (2) offers significant risk-adjusted profit potential, (3) has a good fit with the capabilities of the management team, (4) is potentially profitable over a reasonable time span, and (5) is amenable to financing.
- To uncover entrepreneurial opportunities, look in areas of (1) new knowledge and technological change, (2) changing

regulation, (3) social turmoil and civic failure, and (4) changing tastes. Also seek out opportunities for convenient solutions to people's problems.

- Large companies often reject profitable opportunities because they are “too small.” They can be exploited by the enterprising small business.
- Promising opportunities must be systematically evaluated through a process that considers the market, the current and anticipated level of competition, the underlying economics, and the resources required for success.

APPENDIX A

Understanding Financial Statements

A Primer

What does your company own, and what does it owe to others? What are its sources of revenue, and how has it spent its money? How much profit has it made? What is the state of your company's financial health? This appendix helps you answer those questions by explaining the three essential financial statements: the balance sheet, the income statement, and the cash flow statement. The appendix also helps you understand some of the managerial issues implicit in these statements and broadens your financial know-how through discussion of two important concepts: financial leverage and the financial structure of the firm.

If you have a business degree or senior management experience, you may already know as much as you need to know about these topics. But many entrepreneurs have neither. For example, Ken Olsen, the legendary founder of Digital Equipment Corporation in the late 1950s, knew all about electrical engineering and programming, and he had terrific ideas for building a new generation of computers. But he knew next to nothing about financial statements, which the venture capitalists wanted him to include in his business plan. According to entrepreneurial lore, Olsen went to the public library, borrowed a copy of Paul Samuelson's famous economics textbook, found an example of a balance sheet and income statement, and used them as models for his projected figures. The venture capitalists were impressed and gave him the money he needed to develop his business.

If you're already knowledgeable about financial statements, you can probably skip this appendix. But if you're more like novice entrepreneur Ken Olsen (and we hope you are, since he made lots of money and accomplished great things), then continue reading. The ability to read and interpret financial statements is essential for the enterprising businessperson. When the conversation turns to "current liabilities," "profit margin," and "working capital," the meaning of these terms must be understood.

Why Financial Statements?

Financial statements are the essential documents of business. Managers use them to assess performance and identify areas in which intervention is required. Shareholders use them to keep tabs on how well their capital is being managed. Outside investors use them to identify opportunities. And lenders and suppliers routinely examine financial statements to determine the creditworthiness of the companies with which they deal.

Publicly traded companies are required by the Securities and Exchange Commission (SEC) to produce financial statements and make them available to everyone as part of the full-disclosure requirement the SEC places on publicly owned and traded companies. Companies not publicly traded are under no such requirement, but their private owners and bankers expect financial statements nevertheless.

Financial statements—the balance sheet, the income statement, and the cash flow statement—follow the same general format from company to company. And even though specific line items may vary with the nature of a company's business, the statements are usually similar enough to allow you to compare one business's performance against another's.

The Balance Sheet

Many people go to a doctor once a year to get a checkup—a snapshot of their physical well-being at a particular time. Similarly, com-

panies prepare balance sheets as a way of summarizing their financial positions at a given point in time, usually at the end of the month, the quarter, or the fiscal year.

In effect, the balance sheet describes the assets controlled by the business and shows how those assets are financed—with the funds of creditors (liabilities), with the capital of the owners, or with both. A balance sheet reflects the following basic accounting equation:

$$\text{Assets} = \text{Liabilities} + \text{Owners' Equity}$$

Assets in this equation are the things in which a company invests so that it can conduct business. Examples include cash and financial instruments, inventories of raw materials and finished goods, land, buildings, and equipment. Assets also include money owed to the company by customers and others—an asset category referred to as *accounts receivable*.

Now look at the other side of the equation, starting with liabilities. To acquire its necessary assets, a company often borrows money or promises to pay suppliers for various goods and services. Moneys owed to creditors are called *liabilities*. For example, a computer company may acquire \$1 million worth of motherboards from an electronic parts supplier, with payment due in thirty days. In doing so, the computer company increases its inventory assets by \$1 million and increases its liabilities—in the form of *accounts payable*—by an equal amount. The equation stays in balance. Similarly, if the same company were to borrow \$100,000 from a bank, the cash infusion would increase its assets by \$100,000 and its liabilities by the same amount.

Owners' equity, also known as shareholders' or stockholders' equity, is what is left after total liabilities are deducted from total assets. Thus, a company that has \$3 million in total assets and \$2 million in liabilities would have owners' equity of \$1 million.

$$\begin{aligned}\text{Assets} - \text{Liabilities} &= \text{Owners' Equity} \\ \$3,000,000 - \$2,000,000 &= \$1,000,000\end{aligned}$$

If \$500,000 of this same company's uninsured assets burned up in a fire, its liabilities would remain the same, but its owners'

equity—what’s left after all claims against assets are satisfied—would be reduced to \$500,000:

$$\begin{aligned}\text{Assets} - \text{Liabilities} &= \text{Owners' Equity} \\ \$2,500,000 - \$2,000,000 &= \$500,000\end{aligned}$$

Thus, the balance sheet “balances” a company’s assets and liabilities. Notice, for example, that the total assets equal total liabilities and owners’ equity in the balance sheet of Amalgamated Hat Rack, our sample company (table A-1). The balance sheet also describes how much the company has invested in assets and shows where the money is invested. Further, the balance sheet indicates how much of those monetary investments in assets comes from creditors (liabilities) and how much comes from owners (equity). Analysis of the balance sheet can give you an idea of how efficiently a company is using its assets and how well it is managing its liabilities.

Balance sheet data is most helpful when compared with the same information from one or more previous years. Consider the balance sheet of Amalgamated Hat Rack. First, this statement represents the company’s financial position at a moment in time: December 31, 2002. A comparison of the figures for 2001 against those for 2002 shows that Amalgamated is moving in a positive direction: It has increased its owner’s equity by \$100,000.

Assets

You should understand some details about this particular financial statement. The balance sheet begins by listing the assets most easily converted to cash: cash on hand and marketable securities, receivables, and inventory. These are called *current assets*. Generally, current assets are those that can be converted into cash within one year.

Next, the balance sheet tallies other assets that are tougher to convert to cash—for example, buildings and equipment. These are called plant assets or, more commonly, *fixed assets* (because it is hard to change them into cash).

Because most fixed assets, except land, depreciate—or become less valuable—over time, the company must reduce the stated value of

TABLE A-1

Amalgamated Hat Rack Balance Sheet as of December 31, 2002

	2002	2001	Increase (Decrease)
Assets			
Cash and marketable securities	\$355,000	\$430,000	\$(75,000)
Accounts receivable	\$555,000	\$512,000	\$43,000
Inventory	\$835,000	\$755,000	\$80,000
Prepaid expenses	<u>\$123,000</u>	<u>\$98,000</u>	<u>\$25,000</u>
Total current assets	\$1,868,000	\$1,795,000	\$73,000
Gross property, plant, and equipment	\$2,100,000	\$1,900,000	\$200,000
Less: accumulated depreciation	<u>\$333,000</u>	<u>\$234,000</u>	<u>\$99,000</u>
Net property, plant, and equipment	<u>\$1,767,000</u>	<u>\$1,666,000</u>	<u>\$101,000</u>
Total assets	\$3,635,000	\$3,461,000	\$174,000
Liabilities and Owner's Equity			
Accounts payable	\$450,000	\$430,000	\$20,000
Accrued expenses	\$98,000	\$77,000	\$21,000
Income tax payable	\$17,000	\$9,000	\$8,000
Short-term debt	<u>\$435,000</u>	<u>\$500,000</u>	<u>\$65,000</u>
Total current liabilities	\$1,000,000	\$1,016,000	\$(16,000)
Long-term debt	<u>\$750,000</u>	<u>\$660,000</u>	<u>\$90,000</u>
Total liabilities	\$1,750,000	\$1,676,000	\$74,000
Contributed capital	\$900,000	\$850,000	\$50,000
Retained earnings	<u>\$985,000</u>	<u>\$935,000</u>	<u>\$50,000</u>
Total owner's equity	<u>\$1,885,000</u>	<u>\$1,785,000</u>	<u>\$100,000</u>
Total liabilities and owner's equity	\$3,635,000	\$3,461,000	\$174,000

Source: HMM Finance.

these fixed assets by something called accumulated depreciation. Gross property, plant, and equipment minus accumulated depreciation equals the current book value of property, plant, and equipment.

Some companies list *goodwill* among their assets. If a company has purchased another company for a price above the fair market value of its assets, that so-called goodwill is recorded as an asset. This is, however, strictly an accounting fiction. Goodwill may also represent intangible things such as brand names or the acquired company's excellent reputation. These may have real value. So too can other intangible assets, such as patents.

Finally, we come to the last line of the asset section of the balance sheet: total assets. Total assets represents the sum of current and fixed assets.

Liabilities and Owners' Equity

Now let's consider the claims against those assets, beginning with a category called current liabilities. *Current liabilities* represent the claims of creditors and others that typically must be paid within a year; they include short-term IOUs, accrued salaries, accrued income taxes, and accounts payable. This year's repayment obligation on a long-term loan is also listed under current liabilities.

Subtracting current liabilities from current assets gives you the company's net working capital. *Net working capital* is the amount of money the company has tied up in its current (short-term) operating activities. Just how much is adequate for the company depends on the industry and the company's plans. In the balance sheet shown in table A-1, Amalgamated has \$868,000 in net working capital.

Long-term liabilities are typically bonds and mortgages—debts that the company is contractually obliged to repay, with respect to both interest and principal.

According to the aforementioned accounting equation, total assets must equal total liabilities plus owners' equity. Thus, subtracting total liabilities from total assets, the balance sheet arrives at a figure for the owners' equity. Owners' equity comprises *retained earnings* (net profits that accumulate on a company's balance sheet after any

dividends are paid) and contributed capital (capital received in exchange for shares)

Historical Values

The values represented in many balance-sheet categories may not correspond to their actual market values. Except for items such as cash, accounts receivable, and accounts payable, the measurement of each classification will rarely be equal to the actual current value or cash value shown. This is because accountants must record most items at their historic cost. If, for example, XYZ's balance sheet indicated land worth \$700,000, that figure would represent what XYZ paid for the land way back when. If the land was purchased in downtown San Francisco in 1960, you can bet that it is now worth immensely more than the value stated on the balance sheet.

So why do accountants use historic instead of market values? The short answer is that it represents the lesser of two evils. If market values were mandated, then every public company would be required to get a professional appraisal of every one of its properties, warehouse inventories, and so forth—and would have to do so every year. And how many people would trust those appraisals? So we're stuck with historic values on the balance sheet.

Managerial Issues

Although the balance sheet is prepared by accountants, it represents a number of important issues for managers.

WORKING CAPITAL. Business owners give substantial attention to the level of working capital, which naturally expands and contracts with sales activities. Too little working capital can put a company in a bad position: The company may be unable to pay its bills or to take advantage of profitable opportunities. Too much working capital, on the other hand, reduces profitability, because that capital has a carrying cost; it must be financed in some way, usually through interest-bearing loans.

Inventory is one component of working capital—unless yours is a service business that has no inventory. Like working capital in general, inventory must be balanced between too much and too little. Having lots of inventory on hand allows a company to fill customer orders without delay and provides a buffer against potential production stoppages and strikes. The flip side of plentiful inventory is the cost of financing and the risk of deterioration in the market value of the inventory itself. Every excess widget in the stockroom adds to the company's financing costs, and that reduces profits. And every item that sits on the shelf may become obsolete or less salable as time goes by—again, with a negative impact on profitability.

The personal computer business provides a clear example of how excess inventory can wreck the bottom line. Some analysts estimate that the value of finished-goods inventory melts away at a rate of approximately 2 percent *per day* because of technical obsolescence in this fast-moving industry.

FINANCIAL LEVERAGE. You have probably heard someone say, “It’s a highly leveraged situation.” Do you know what “leveraged” means in the financial sense? *Financial leverage* refers to the use of borrowed money in acquiring an asset. We say that a company is highly leveraged when the percentage of debt on its balance sheet is high relative to the capital invested by the owners. For example, suppose that you paid \$400,000 for an asset, using \$100,000 of your own money and \$300,000 in borrowed funds. For simplicity, we’ll ignore loan payments, taxes, and any cash flow you might get from the investment. Four years go by, and your asset has appreciated to \$500,000. You decide to sell. After paying off the \$300,000 loan, you end up with \$200,000 in your pocket (your original \$100,000 plus a \$100,000 profit). That’s a gain of 100 percent on your personal capital, even though the asset increased in value by only 25 percent. Financial leverage made this possible. In contrast, if you had financed the purchase entirely with your own funds (\$400,000), then you would have ended up with only a 25 percent gain.

Financial leverage creates an opportunity for a company to gain a higher return on the capital invested by its owners. In the United

States and most other countries, tax policy makes financial leverage even more attractive by allowing businesses to deduct the interest paid on loans. But leverage can cut both ways. If the value of an asset drops (or fails to produce the anticipated level of revenue), then leverage works against its owner. Consider what would have happened in our example if the asset's value had dropped by \$100,000, that is, to \$300,000. The owner would have lost the entire \$100,000 investment after repaying the initial loan of \$300,000.

FINANCIAL STRUCTURE OF THE FIRM. The negative potential of financial leverage is what keeps CEOs from maximizing their debt financing. Instead, they seek a financial structure that creates a realistic balance between debt and equity on the balance sheet. Although leverage enhances a company's potential profitability as long as things go right, managers know that every dollar of debt increases the riskiness of the business—both because of the danger just cited and because high debt results in high interest payments, which must be paid in good times and bad. Many companies have failed when business reversals or recessions reduced their ability to make timely payments on their loans.

When creditors and investors examine corporate balance sheets, they look carefully at the debt-to-equity ratio. They factor the riskiness of the balance sheet into the interest they charge on loans and the return they demand from a company's bonds. Thus, a highly leveraged company may have to pay 14 percent on borrowed funds instead of the 10 to 12 percent paid by a less leveraged competitor. Investors also demand a higher rate of return for their stock investments in highly leveraged companies. They will not accept high risks without an expectation of commensurately large returns.

The Income Statement

The income statement indicates the results of operations over a specified period. Those last two words are important. Unlike the balance sheet, which is a snapshot of the enterprise's position at a point in

time, the *income statement* indicates cumulative business results within a defined time frame. It tells you whether the company is making a profit—that is, whether it has positive or negative net income (net earnings). This is why the income statement is often referred to as the *profit-and-loss statement*, or P&L. It shows a company's profitability at the end of a particular time—typically at the end of the month, the quarter, or the company's fiscal year. In addition, the income statement tells you how much money the company spent to make that profit—from which you can determine the company's *profit margin*.

As we did with the balance sheet, we can represent the contents of the income statement with a simple equation:

$$\text{Revenues} - \text{Expenses} = \text{Net Income (or Net Loss)}$$

An income statement starts with the company's *revenues*: the amount of money that results from selling products or services to customers. A company may have other revenues as well. In many cases, these are from investments or interest income from its cash holdings.

Various costs and expenses—from the costs of making and storing goods, to depreciation of plant and equipment, to interest expense and taxes—are then deducted from revenues. The bottom line—what's left over—is the *net income*, or net profit or net earnings, for the period of the statement.

Consider the meaning of various line items on the income statement for Amalgamated Hat Rack (table A-2). The *cost of goods sold* is what it cost Amalgamated to manufacture its hat racks. This figure includes the cost of raw materials, such as lumber, as well as the cost of turning them into finished goods, including direct labor costs. By deducting the cost of goods sold from sales revenue, we get a company's *gross profit*—the roughest estimation of the company's profitability.

The next major category of cost is *operating expenses*. Operating expenses include administrative employee salaries, rents, and sales and marketing costs, as well as other costs of business not directly attributed to the cost of manufacturing a product. The lumber for making hat racks would *not* be included here; the cost of the advertising and the salaries of Amalgamated administrative employees would be included.

TABLE A-2

Amalgamated Hat Rack Income Statement for the Fiscal Year Ending December 31, 2002

Retail Sales	\$2,200,000
Corporate Sales	<u>\$1,000,000</u>
Total Sales Revenue	\$3,200,000
Less: Cost of Goods Sold	<u>\$1,600,000</u>
Gross Profit	\$1,600,000
Less: Operating Expenses	\$800,000
Depreciation Expense	<u>\$42,500</u>
Earnings before Interest and Taxes	\$757,500
Less: Interest Expense	<u>\$110,000</u>
Earnings before Income Tax	\$647,500
Less: Income Tax	<u>\$300,000</u>
Net Income	\$347,500

Source: HMM Finance.

Depreciation is counted on the income statement as an expense, even though it involves no out-of-pocket payments. As described earlier, depreciation is a way of estimating the “consumption” of an asset, or the diminishing value of equipment, over time. A computer, for example, loses about one-third of its value each year. Thus, the company would not expense the full value of a computer in the first year of its purchase but rather would decrease its value as it is actually used over a span of three years. The idea behind depreciation is to recognize the diminished value of certain assets.

By subtracting operating expenses and depreciation from the gross profit, we get *operating earnings*. These earnings are often called earnings before interest and taxes, or EBIT.

We’re now down to the last reductions in the path that revenues follow on their way to the bottom line. Interest expense is the interest

charged on loans a company has taken out. Income tax, tax levied by the government on corporate income, is the final charge.

What revenues are left are referred to as net income, or earnings. If net income is positive—as it is in the case of Amalgamated—we have a profit, what the for-profit company lives for.

Making Sense of the Income Statement

As with the balance sheet, our analysis of a company's income statement is greatly aided when presented in a multiperiod format. This allows us to spot trends and turnarounds. Most annual reports make multiperiod data available, often going back five or more years. Amalgamated's income statement in multiperiod form is depicted in table A-3.

TABLE A-3

Amalgamated Hat Rack Multiperiod Income Statement

	FOR THE PERIOD ENDING DECEMBER 31			
	2002	2001	2000	1999
Retail Sales	\$2,200,000	\$2,000,000	\$1,720,000	\$1,500,000
Corporate Sales	\$1,000,000	\$1,000,000	\$1,100,000	\$1,200,000
Total Sales Revenue	<u>\$3,200,000</u>	<u>\$3,000,000</u>	<u>\$2,820,000</u>	<u>\$2,700,000</u>
Less: Cost of Goods Sold	<u>\$1,600,000</u>	<u>\$1,550,000</u>	<u>\$1,400,000</u>	<u>\$1,300,000</u>
Gross Profit	\$1,600,000	\$1,450,000	\$1,420,000	\$1,400,000
Less: Operating Expenses	\$800,000	\$810,000	\$812,000	\$805,000
Depreciation Expense	<u>\$42,500</u>	<u>\$44,500</u>	<u>\$45,500</u>	<u>\$42,500</u>
Earnings before Interest and Taxes	\$757,500	\$595,500	\$562,500	\$552,500
Less: Interest Expense	<u>\$110,000</u>	<u>\$110,000</u>	<u>\$150,000</u>	<u>\$150,000</u>
Earnings before Income Tax	\$647,500	\$485,500	\$412,500	\$402,500
Less: Income Tax	<u>\$300,000</u>	<u>\$194,200</u>	<u>\$165,000</u>	<u>\$161,000</u>
Net Income	\$347,500	\$291,300	\$247,500	\$241,500

In this multiyear format, we observe that Amalgamated's annual retail sales have grown steadily, and its corporate sales have stagnated and even declined slightly. Operating expenses have stayed about the same, however, even as total sales have expanded. That's a good sign that management is holding the line on the cost of doing business. The company's interest expense has also declined, perhaps because it has paid off one of its loans. The bottom line, net income, has shown healthy growth.

The Cash Flow Statement

The *cash flow statement*, the last of the three essential financial statements, is the least used and understood. This statement details the reasons that the amount of cash (and cash equivalents) changed during the accounting period. More specifically, it reflects all changes in cash as affected by operating activities, investments, and financing activities. Like the bank statement you receive for your checking account, the cash flow statement tells how much cash was on hand at the beginning of the period and how much was on hand at the end. It then describes how the company acquired and spent cash in a particular period. The uses of cash are recorded as negative figures, and sources of cash are recorded as positive figures.

If you're a manager in a large corporation, changes in the company's cash flow typically don't have an impact on your day-to-day functioning. Nevertheless, it's a good idea to stay up-to-date with your company's cash flow projections, because they may come into play when you prepare your budget for the upcoming year. For example, if cash is tight, you will probably want to be conservative in your spending. Alternatively, if the company is flush with cash, you may have opportunities to make new investments. If you're a manager in a small company (or its owner), you're probably keenly aware of your cash flow situation and feel its impact almost every day.

The cash flow statement is useful because it indicates whether your company is turning accounts receivable into cash—and that ability is ultimately what will keep your company solvent. *Solvency* is the ability to pay bills as they come due.

As we did with the other statements, we can conceptualize the cash flow statement in terms of a simple equation:

$$\text{Cash Flow from Profit} + \text{Other Sources of Cash} - \text{Uses of Cash} = \text{Change in Cash}$$

Again using the Amalgamated Hat Rack example, we see that in its year 2002 cash flow statement, the company generated a positive cash flow of \$377,900 (table A-4). The statement shows that cash

TABLE A-4

Amalgamated Hat Rack Cash Flow Statement, 2002

Net Income	\$347,500
Operating Assets and Liabilities	
Accounts receivable	\$(75,600)
Finished-goods inventory	\$(125,000)
Prepaid expenses	\$(37,000)
Accounts payable	\$83,000
Accrued expenses	\$25,000
Income tax payable	\$(23,000)
Depreciation expense	<u>\$89,000</u>
Total changes in operating assets and liabilities	<u>\$(63,600)</u>
Cash flow from operations	\$283,900
Investing Activities	
Sale of property, plant, and equipment	\$267,000
Capital expenditures	<u>\$(175,000)</u>
Cash flow from investing activities	\$92,000
Financing Activities	
Short-term debt increase	\$27,000
Long-term borrowing	\$112,000
Capital stock	\$50,000
Cash dividends to stockholders	<u>\$(187,000)</u>
Cash flow from financing activities	<u>\$2,000</u>
Increase in cash during year	\$377,900

Source: HMM Finance.

flows from operations (\$283,900) plus those from investing activities (\$92,000) and from financing (\$2,000) produced \$377,900 in additional cash.

The cash flow statement doesn't measure the same thing as the income statement. If there is no cash transaction, then it cannot be reflected on a cash flow statement. Notice, however, that net income at the top of the cash flow statement is the same as the bottom line of the income statement; it's the company's profit. Through a series of adjustments, the cash flow statement translates this net income into a cash basis.

The statement's format reflects the three categories of activities that affect cash. Cash can be increased or decreased because of (1) operations, (2) the acquisition or sale of assets, that is, investments, or (3) changes in debt or stock or other financing activities. Let's consider each in turn, starting with operations:

- Accounts receivable and finished-goods inventory represent items the company has produced but for which it hasn't yet received payment. Prepaid expenses represent items the company has paid for but has not yet consumed. These items are all subtracted from cash flow.
- Accounts payable and accrued expenses represent items the company has already received or used but for which it hasn't yet paid. Consequently, these items add to cash flow.

Now consider investments. Investment activities include the following:

- Gains realized from the sale of plant, property, and equipment—in other words, gains realized from converting investments into cash
- Cash that the company uses to invest in financial instruments and plant, property, and equipment (the latter investments are often shown as capital expenditures)

The cash flow statement shows that Amalgamated has sold a building for \$267,000 and has made capital expenditures of \$175,000, for a net addition to cash flow of \$92,000.

Cash Flow Versus Profit

Many people think of profits as cash flow. Don't make this mistake. For a particular period, profit may or may not contribute positively to cash flow. For example, if this year's profit derives from a huge sale made in November, the sale may be booked as revenues in the fiscal period, thus adding to profit. But if payment for that sale is not received until the next accounting period, it goes on the books as an account receivable, and that reduces cash flow.

Finally, we come to cash flow changes from financing activities. Amalgamated has raised money by increasing its short-term debt, by borrowing in the capital markets, and by issuing capital stock, thereby increasing its available cash flow. The dividends that Amalgamated pays, however (\$187,000), must be paid out of cash flow and thus represent a decrease in cash flow.

There's a lot more to financial statements and their interpretation than we can provide in this short primer, but you now have a basis for learning more. The statements generated by your small start-up will be fairly simple in any case, and you can learn more as you work with your accountant or financial officer, and as your company grows.

APPENDIX B

Breakeven Analysis

A Useful Decision Tool

Whether they are planning their new business or making decisions about offering new products or services, entrepreneurs need to know the point at which they will begin making money. Breakeven analysis is a handy tool for this purpose. *Breakeven analysis* can tell you how much (or how much more) you need to sell in order to pay for a fixed investment—in other words, at what point you will break even. With that information in hand, you can look at market demand and competitors' market shares to determine whether it's realistic to expect to sell that much. Breakeven analysis can also help you think through the impact of changing price and volume relationships.

More specifically, the breakeven calculation helps you determine the volume level at which the total after-tax contribution from a product line or an investment covers its total fixed costs. But before you can perform the calculation, you need to understand the components that go into it.

Making the Calculation

To calculate breakeven, you must first understand three accounting concepts: fixed costs, variable costs, and contribution margin.

- **Fixed costs.** These are costs that stay mostly the same, no matter how many units of a product or service are sold—costs such as insurance, management salaries, and rent or lease payments.

For example, the rent on the production facility will remain the same whether the company makes ten thousand or twenty thousand units, and so will the cost of insurance.

- **Variable costs.** Variable costs are those that change with the number of units produced and sold; examples include utilities, labor, and the costs of raw materials. The more units you make, the more you consume these items. Sales commissions are another variable cost.
- **Contribution margin.** This is the amount of money that every sold unit contributes to paying for fixed costs. It is defined as net unit revenue minus variable (or direct) costs per unit.

With these concepts understood, we can make the calculation. We are looking for the solution to this straightforward equation:

$$\text{Breakeven Volume} = \text{Fixed Costs} / \text{Unit Contribution Margin}$$

Here's how we do it. First, find the unit contribution margin by subtracting the variable costs per unit from the net revenue per unit. Then divide total fixed costs, or the amount of the investment, by the unit contribution margin. The quotient is the breakeven volume, that is, the number of units that must be sold in order for all fixed costs to be covered.

Let's consider a hypothetical situation. Amalgamated Hat Rack, Inc., is planning to sell its new plastic wall-mounted hat rack for \$75 per unit. The company's variable cost per unit is \$22. It will spend \$100,000 (a fixed cost) for the plastic extruder that will make these hat racks. Thus

$$\begin{aligned} \$75 \text{ (Price per Unit)} - \$22 \text{ (Variable Cost per Unit)} &= \$53 \\ \text{(Unit Contribution Margin)} \end{aligned}$$

Therefore

$$\begin{aligned} \$100,000 \text{ (Total Investment Required)} / \$53 \\ \text{(Unit Contribution Margin)} &= 1,887 \text{ Units} \end{aligned}$$

The preceding calculations indicate that Amalgamated must sell 1,887 hat racks to break even on its \$100,000 investment.

At this point, Amalgamated must decide whether the breakeven volume is achievable: Is it realistic to expect to sell 1,887 additional hat racks, and if so, how quickly?

A Breakeven Complication

Our hat rack breakeven analysis represents a simple case. It assumes that costs are distinctly fixed or variable, that costs and unit contributions will not change as a function of volume (i.e., that the sale price of the item under consideration will not change at different levels of output; rent will stay the same whether one thousand or ten thousand units are produced and sold).

These assumptions may not hold in your more complicated world. Rent may be fixed up to a certain level of production and then increase by 50 percent as you rent a secondary facility to handle expanded output. Labor costs may in reality be a hybrid of fixed and variable. And as you push more of your product into the market, you may find it necessary to offer price discounts, and that will reduce contribution per unit. You must adjust the breakeven calculation to accommodate these untidy realities.

Operating Leverage

Your goal as an entrepreneur, of course, is not to break even but to make a profit. After you've covered all your fixed costs with the contributions of many unit sales, every subsequent sale contributes directly to profits. As we observed earlier,

$$\text{Unit Net Revenue} - \text{Unit Variable Cost} = \text{Contribution to Profit}$$

You can see at a glance that the lower the unit variable cost, the greater the contribution to profits will be. In the pharmaceutical business, for example, the unit cost of cranking out and packaging a bottle of a new wonder drug may be less than a dollar. Yet if the company can sell each bottle for \$100, a whopping sum of \$99 contributes to corporate profits after sales have gotten beyond the

breakeven point! The trouble is that the pharmaceutical company may have invested \$400 million up front in fixed product development costs just to get the first bottle out the door. It will have to sell many bottles of the new medication just to break even. But when it does, profits can be extraordinary.

The relationship between fixed and variable costs is often described in terms of *operating leverage*. Companies whose fixed costs are high relative to their variable costs are said to have high operating leverage. The pharmaceutical business, for example, generally operates with high operating leverage. So too does the software industry: The greater percentage of its costs are fixed product development outlays; the variable cost of the CDs on which programs are distributed represents only pennies.

Now consider the opposite: low operating leverage. Here, fixed costs are low relative to the total cost of producing each unit of output. A consulting business is a good example of one that functions with low operating leverage. The firm has a minimal investment in equipment and fixed expenses. The bulk of its costs are the fees it pays its consultants, which vary depending on the actual hours they bill to clients.

Operating leverage is a great thing after a company passes its breakeven point, but it can cause substantial losses if breakeven is never achieved. In other words, it's risky. This is why managers give much thought to finding the right balance between fixed and variable costs.

Notes

Chapter 2

1. Jeffrey A. Timmons, *New Venture Creation*, 6th edition (Burr Ridge, Illinois: McGraw Hill-Irwin, 2004), 119–120.
2. Jeffrey A. Timmons, “Opportunity Recognition,” in *The Portable MBA in Entrepreneurship*, 2nd edition, ed. William D. Bygrave (New York: John Wiley & Sons, 1997).
3. David Bovet and Joseph Martha, *Value Nets* (New York: John Wiley & Sons, 2000), 40.

Harvard Business Essentials

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The Harvard Business Essentials series is designed to provide comprehensive advice, personal coaching, background information, and guidance on the most relevant topics in business. Drawing on rich content from Harvard Business School Publishing and other sources, these concise guides are carefully crafted to provide a highly practical resource for readers with all levels of experience, and will prove especially valuable for the new manager. To assure quality and accuracy, each volume is closely reviewed by a specialized content adviser from a world-class business school. Whether you are a new manager seeking to expand your skills or a seasoned professional looking to broaden your knowledge base, these solution-oriented books put reliable answers at your fingertips.

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Business Communication
Coaching and Mentoring
Creating Teams with an Edge
Crisis Management
Decision Making
Entrepreneur's Toolkit
Finance for Managers
Hiring and Keeping the Best People
Manager's Toolkit
Managing Change and Transition
Managing Creativity and Innovation
Managing Employee Performance
Managing Projects Large and Small
Marketer's Toolkit
Negotiation
Power, Influence, and Persuasion
Strategy
Time Management