

COMPETITION DEMYSTIFIED



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A Radically Simplified Approach

to Business Strategy

BRUCE GREENWALD AND JUDD KAHN

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*To Ava, who makes many inconceivable things possible, and
to Anne.*

PREFACE

Anyone running a business knows that competition matters and that strategy is important. But although most experienced businesspeople recognize that these two critical elements of business are associated, few understand their essential natures or the direct relationship between them.

This book cuts through the fog that pervades many discussions of competition and strategy. Our goal is to clarify readers' understanding of strategy and to reframe their approach to it. We want executives to know how their markets work, where their competitive opportunities lie, and how to develop and protect them. To this end, we include both broad discussions of general principles and detailed case studies of actual competitive interactions. Taken together, we think they present a useful guide for people who need to make strategic decisions.

Executives often confuse strategy with planning. They think that any plan for attracting customers or increasing margins is a strategy. Any large-scale plan that requires a lot of resources or takes a long time to execute is considered strategic. Essentially, any plan that answers the question "How can we make money?" qualifies as a business strategy. As a result, too many leaders end up fighting wars they cannot win while failing to protect and exploit the advantages that are the real bases for their success.

Strategies are indeed plans for achieving and sustaining success. But they are not just any ideas for how to make a product or service and sell it profitably to customers. Rather, strategies are those plans that specifically focus on the actions and responses of competitors.

At its core, strategic thinking is about creating, protecting, and exploiting competitive advantages. On a level playing field, in a market open to all competitors on equal terms, competition will erode the returns of all players to a uniform minimum. Therefore, to earn profits above this minimum, a company must be able to do something that its competitors cannot. It must, in other words, benefit from competitive advantages. The

appropriate starting point of any strategic analysis is a careful assessment of those economically advantageous aspects of a firm's market situation that cannot be replicated by its competitors or, at most, can be reproduced by only a handful of them.

The existence or absence of competitive advantages forms a kind of continental divide when it comes to strategy. On one side are the markets in which no firms benefit from significant competitive advantages. In these markets, strategy is not much of an issue. Lots of competitors have essentially equal access to customers, to technologies, and to other cost advantages. Each firm is in more or less the same competitive position. Anything that one does to improve its position can and will be immediately copied. Without any firm enjoying a competitive advantage, this process of innovation and imitation repeats itself continually. In these markets, the sensible course is not to try to outmaneuver the competitors, but rather to simply outrun them by operating as efficiently as possible.

Constant pursuit of operational efficiency is essential for companies in markets without competitive advantages. However, operational efficiency is a tactical matter, not a strategic one. It focuses internally on a company's systems, structures, people, and practices. Strategy, by definition, looks outward to the marketplace and to the actions of competitors.

On the other side of the divide are the markets where strategy is critically important. In these markets, incumbents have competitive advantages, and the race for profitability is shaped by how well companies manage the competition among their peers and how effectively they are able to fend off potential entrants. A focus on outsiders lies at the heart of business strategy. This book is a handbook on how to identify, understand, anticipate, and influence those important outsiders.

Many people have helped in the creation of our book. They include most importantly Paul Johnson, Nancy Cardwell, Barry Nalebuff, John Wright, Stephanie Land, Adrian Zackheim, Artie Williams, Paul Sonkin, Erin Bellissimo, and colleagues at Columbia Business School and The Hummingbird Value Funds. The help and support of our families, especially Ava Seave, Anne Rogin, and Gabriel Kahn, was indispensable.

We owe a major debt to the many fearsomely intelligent and energetic students who have contributed to the development of this material through their participation in the courses from which it arose. The origins of this book lie in a second-year MBA course taught at Columbia University. The "Economics of Strategic Behavior" was first offered in 1995 with an intended enrollment of sixty students. Almost ten years later, it is now taken as an elective by over 80 percent of the students in each class. In the Executive MBA program, with more experienced students who are sponsored by their employers, upwards of two hundred out of a class of three hundred fill the single available section. The goal of this course at inception was to bring clarity of vision to the complicated field of business strategy. The course's reception suggests that this goal has been substantially achieved. Our book is an attempt to convey that clarity of vision to a wider audience for whom business strategy is a significant issue.

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CHAPTER 1

Strategy, Markets, and Competition

WHAT IS STRATEGY?

For at least the last half century, strategy has been a major focus of management concern. The Allied victory in the Second World War highlighted the necessity of grand strategy for success in warfare, and in the subsequent decades, corporate chieftains appropriated the concept for their own battlefields. Today, strategy is a primary business school discipline. Most major companies have in-house strategic planning units, and those that don't often hire teams of outside consultants to come in and guide the process.

Over the decades, definitions of strategy have changed, and the processes for developing it have undergone endless modifications and revolutions. Some companies have even abandoned formal processes altogether. Yet within all of this flux, one feature of strategy has stood out to distinguish it from other management responsibilities.

Strategy is big. Unlike tactical choices, everyone knows strategic decisions mean long-term commitments for the organization. They require large allocations of resources. Top management makes the strategic decisions. And setting strategy entails arduous research and bone-wearying meetings. Changing strategies is like changing the direction of an aircraft carrier—it doesn't happen quickly.

In World War II, the highest-level strategic decision made by the United States was whether to fight the major campaign first in Europe or in the Pacific. Other strategic decisions at somewhat lower levels were the commitment to open a second front and the selection of the Normandy beaches for the invasion of Europe. On the corporate side, AT&T's two separate decisions to enter the information processing business and to spin off local telephone service were strategic choices.* Neither was successful. General Electric's policy, enunciated long before Jack Welch became CEO, that it would leave any business in which it did not have a leading market share, was a strategic principle.

TABLE 1.1

Distinctions between strategic and tactical decisions

	Strategic Decisions	Tactical (and Operational or Functional) Decisions
Management level	Top management, board of directors	Midlevel, functional, local
Resources	Corporate	Divisional, departmental
Time frame	Long term	Yearly, monthly, daily
Risk	Success or even survival	Limited
Questions	What business do we want to be in? What critical competencies must we develop? How are we going to deal with competitors?	How do we improve delivery times? How big a promotional discount do we offer? What is the best career path for our sales representatives?

Occasionally, enormous consequences flow from decisions that at the time do not look strategic. When IBM entered the personal computer business, it chose an open standards approach and made two build-or-buy

decisions that probably seemed inconsequential and merely tactical. Rather than developing the operating system itself, it licensed one from a tiny company no one had heard of. It made a similar choice for the microprocessor, giving the business to another supplier. These decisions created two of the most successful business franchises of all time, Microsoft and Intel. These companies, rather than IBM, became the beneficiaries of the boom in personal computing. In retrospect, these were clearly strategic decisions with enormous consequences. If we were to look closely at the history of big outcomes, we would no doubt find that many others were not results of any strategic planning process but were either unintended by-products of some other decision or simply were results on a much larger scale than anticipated.

But big, whether measured by financial commitments or hours spent in planning, or even outcomes, is not the same thing as strategic. Although size and significance are aspects of most strategic business decisions, we propose that they are not the defining criteria. We think the dividing line between strategy and tactics lies elsewhere.

In our view, strategic decisions are those whose results depend on the actions and reactions of other economic entities. Tactical decisions are ones that can be made in isolation and hinge largely on effective implementation. Understanding this distinction is key to developing effective strategy.

Formulating effective strategy is central to business success. It is also extremely challenging. The most valuable resource in any business is management attention, especially the attention of high-level management. This attention should not be squandered on a range of unfocused or inappropriate objectives or consumed by endless discussions about the proper direction for the firm. Our goal in this book is to present a clear step-by-step process for strategic analysis, first to help a firm understand where it fits in the competitive environment and second, to guide it in its strategic choices.

STRATEGIC VS. TACTICAL ISSUES

Consider this example. Responding to the success of the Jeep in the mid 1980s, many automobile companies chose to produce a sport utility vehicle. The decision to enter the SUV market was strategic for those companies. After that, everything was tactical. Success depended on efficient performance, including the appropriate investments in plants and equipment, marketing campaigns, design and engineering time, and management attention devoted to continuous organizational improvement. That's because, given the competitive nature of this market, and the ease with which all the companies could enter, no firm needed to concern itself with the actions of its competitors. There were simply too many to worry about. Success depended on skillful implementation.

Strategic choices, in contrast to tactical ones, are outward looking. They involve two issues that every company must face.

The first issue is selecting the arena of competition, the market in which to engage. All the illustrations we've cited—the United States picking the prime theater of operations in World War II, AT&T's selection of markets to enter and to abandon, General Electric's policy of qualifying business segments in which to compete—involve this kind of choice. So did IBM's decision to outsource the operating system and the microprocessor for its PC; it opted not to compete in those markets. The choice of markets is strategic, according to our definition, because it determines the cast of external characters who will affect a company's economic future.

The second strategic issue involves the management of those external agents. In order to devise and implement effective strategy, a firm has to anticipate and, if possible, control the responses of these external agents. Both theory and experience indicate that this is no easy task. These interactions are complicated and uncertain. There are no exact prescriptions available for the managers who have to make strategic decisions or for the business scholars who have to explain why certain ones work out better than others. All the best-in-class disciplines in the world cannot predict with absolute certainty how some testosterone-crazed CEO will respond to your latest move. Yet devising strategy without taking that response into account can be a glaring mistake.

ONE SINGLE FORCE

Thanks to Michael Porter's groundbreaking work, *Competitive Strategy*, published in 1980, strategic thinking in recent years increasingly has come to recognize the importance of interactions among economic actors. By concentrating on external agents and how they behave, Porter clearly moved strategic planning in the right direction. But, for many people, identifying the many factors in Porter's complex model and figuring out how they will play off one another has proven to be frustratingly difficult. What we are proposing here is a radically simpler approach.

We agree with Porter's view that five forces—Substitutes, Suppliers, Potential Entrants, Buyers, and Competitors within the Industry—can affect the competitive environment. But, unlike Porter and many of his followers, we do not think that those forces are of equal importance. One of them is clearly much more important than the others. It is so dominant that leaders seeking to develop and pursue winning strategies should begin by ignoring the others and focus only on it. That force is *barriers to entry*—the force that underlies Porter's "Potential Entrants."

If there are barriers, then it is difficult for new firms to enter the market or for existing companies to expand, which is basically the same thing. Essentially there are only two possibilities. Either the existing firms within the market are protected by barriers to entry (or to expansion), or they are not. No other feature of the competitive landscape has as much influence on a company's success as where it stands in regard to these barriers.

If there are no barriers to entry, then many strategic concerns can be ignored. The company does not have to worry about interacting with identifiable competitors or about anticipating and influencing their behavior. There are simply too many of them to deal with.

With a universe of companies seeking profitable opportunities for investment, the returns in an unprotected industry will be driven down to levels where there is no "economic profit," that is, no returns above the costs of the invested capital. If demand conditions enable any single firm to earn unusually high returns, other companies will notice the same opportunity and flood in. Both history and theory support the truth of this proposition. As more firms enter, demand is fragmented among them. Costs per unit rise as fixed costs are spread over fewer units sold, prices fall, and the high profits that attracted the new entrants disappear.

Life in an unprotected market is a game played on a level field in which anyone can join. In these markets, often but mistakenly identified as "commodity" markets,* only the very best players will survive and prosper, and even they have to be continually on their toes. Without the protection of barriers to entry, the only option a company has is to run itself as efficiently and effectively as possible.

Operational effectiveness might be thought of as a strategy, indeed, as the only strategy appropriate in markets without barriers to entry. However, operational effectiveness, identified by Michael Porter as doing what rivals do but doing it better, is an internal matter. According to our definition of strategy, it is tactical rather than strategic. That does not make it insignificant. Operational effectiveness can be the single most important factor in the success, or indeed in the survival, of any business. In the last chapter of this book, we describe the extent to which a determined focus on operational effectiveness may carry one firm far ahead of its competitors, even though there is nothing that distinguishes its fundamental economic position from that of its less successful rivals.

Still, the pursuit of operational effectiveness does not require consideration of all the *external* interactions that are the essence of real strategy.

BARRIERS TO ENTRY AND COMPETITIVE ADVANTAGES

The existence of barriers to entry means that incumbent firms are able to do what potential rivals cannot. Being able to do what rivals cannot is the definition of a competitive advantage. Thus, *barriers to entry* and *incumbent competitive advantages* are simply two ways of describing the same thing. *Entrant* competitive advantages, on the other hand, have no value. By definition, a successful entrant becomes the incumbent. It

then is vulnerable to the next entrant, who benefits from newer technology, less expensive labor, or some other temporary competitive edge. And because there are no barriers to entry, the cycle doesn't stop. So it is only in the presence of incumbent competitive advantages that strategy, in our sense of the term, comes to the fore.

LOCAL CHAMPIONS

In an increasingly global environment, with lower trade barriers, cheaper transportation, faster flow of information, and relentless competition from both established rivals and newly liberalized economies, it might appear that competitive advantages and barriers to entry will diminish. The fate of once powerful American firms in industries like machine tools (Cincinnati), textiles (Burlington Industries, J. P. Stevens), and even automobiles (Chrysler, GM, and Ford) seems to support this position. Either profits have shrunk or companies have disappeared entirely under the onslaught of imports. But this macro view misses one essential feature of competitive advantages—that competitive advantages are almost always grounded in what are essentially “local” circumstances.

Consider the history of Wal-Mart, one of the greatest economic success stories of the late twentieth century. The retail business, especially discount retailing, is not an industry with many trade secrets or rare skills. The practices for which Wal-Mart is known, like “everyday low prices” and efficient distribution, are hardly proprietary technologies, impossible for other firms to duplicate. Yet Wal-Mart has successfully dominated many, although not all, of the markets in which it competes. The way in which it achieved this position is instructive.

Wal-Mart began as a small and regionally focused discounter in a part of the country where it had little competition. It expanded incrementally outward from this geographic base, adding new stores and distribution centers at the periphery of its existing territory. The market that it dominated and in which it first enjoyed competitive advantages was not discount retailing in the United States, but discount retailing within a clearly circumscribed region. As it pushed the boundaries of this region outward, it consolidated its position in the newly entered territory before continuing its expansion. As we shall see, when it moved too far beyond its base, its results deteriorated.

The same process of establishing local dominance and then expanding into related territories accounts for two of the other great corporate achievements of the period, although in these cases the geography in question is product market space, not physical territory.

Microsoft began by dominating one particular segment, the operating system for IBM-type personal computers. It faced some competitors at the start, including for a time IBM itself, but Microsoft was able to establish and secure competitive advantages and marginalize all the other players. It expanded successfully at the edges of this business, adding adjacent software products like word processing, spreadsheets, and other productivity tools. Even as a much larger company, with an extensive product line, the core of its profitability remains the operating system and the adjacent software.

Apple's experience stands in stark contrast. From the start, Apple took a more global approach than Microsoft. It was both a computer manufacturer and a software producer. Its Macintosh operating system anticipated the attractive features of Windows by many years—“Windows 5 = Macintosh 87,” as the saying goes. Yet its comprehensive product strategy has been at best a limited and occasional success, especially when compared to Microsoft's more focused approach.

Intel's history is closer to Microsoft's. It began life as a manufacturer of memory chips in the 1970s and was profitable for a time in that market. It also designed and produced microprocessors, one of which was selected by IBM as the heart of its new PC in 1980. Intel continued in both businesses for several years, but it began to lose out on the memory chip side to companies with lower costs and fewer defects. It made the decision in 1985 to abandon that business, even though memory chips were part of its corporate DNA. By concentrating on microprocessors, Intel restored and increased its profitability and has maintained its dominance in that large market ever since.

Competitive advantages that lead to market dominance, either by a single company or by a small

number of essentially equivalent firms, are much more likely to be found when the arena is local—bounded either geographically or in product space—than when it is large and scattered. That is because the sources of competitive advantage, as we will see, tend to be local and specific, not general or diffuse.

Paradoxically, in an increasingly global world, the key strategic imperative in market selection is to *think locally*. Dominance at the local level may be easier to accomplish than one might initially think. If the global economy follows the path of the more developed national economies, service industries will become increasingly important and manufacturing less significant. The distinguishing feature of most services is that they are produced and consumed locally. As a consequence, opportunities for sustained competitive advantages, properly understood, are likely to increase, not diminish. The chances of becoming the next Wal-Mart or Microsoft are infinitesimal, but the focused company that understands its markets and its particular strengths can still flourish.

WHICH COMPETITIVE ADVANTAGES?

Strategic analysis should begin with two key questions: In the market in which the firm currently competes or plans to enter, do any competitive advantages actually exist? And if they do, what kind of advantages are they?

The analysis is made easier because there are only three kinds of genuine competitive advantage:

- **Supply.** These are strictly cost advantages that allow a company to produce and deliver its products or services more cheaply than its competitors. Sometimes the lower costs stem from privileged access to crucial inputs, like aluminum ore or easily recoverable oil deposits. More frequently, cost advantages are due to proprietary technology that is protected by patents or by experience—know-how—or some combination of both.
- **Demand.** Some companies have access to market demand that their competitors cannot match. This access is not simply a matter of product differentiation or branding, since competitors may be equally able to differentiate or brand their products. These demand advantages arise because of customer captivity that is based on habit, on the costs of switching, or on the difficulties and expenses of searching for a substitute provider.
- **Economies of scale.** If costs per unit decline as volume increases, because fixed costs make up a large share of total costs, then even with the same basic technology, an incumbent firm operating at large scale will enjoy lower costs than its competitors.

Beyond these three basic sources of competitive advantage, government protection or, in financial markets, superior access to information may also be competitive advantages, but these tend to apply to relatively few and specific situations. The economic forces behind all three primary sources of competitive advantage are most likely to be present in markets that are local either geographically or in product space. Pepsi loyalists have no particular attachment to Frito-Lay salty snacks, any more than Coke drinkers prefer movies from Columbia Studios when that was owned by Coca-Cola. Nebraska Furniture Mart, the store Warren Buffett bought for Berkshire Hathaway one afternoon, is a dominant player in Omaha and its hinterland, more powerful there than Ethan Allen or other large national furniture retailers.

As we examine the workings of the different sources of competitive advantages through detailed examples, the benefits of operating in markets with limited boundaries will become apparent, as will the difficulties of establishing or sustaining dominance where the boundaries are vast. Most companies that manage to grow and still achieve a high level of profitability do it in one of three ways. They replicate their local advantages in multiple markets, like Coca-Cola. They continue to focus within their product space as that space itself becomes larger, like Intel. Or, like Wal-Mart and Microsoft, they gradually expand their activities outward from the edges of their dominant market positions.

THE PROCESS OF STRATEGIC ANALYSIS

The natural starting point for any strategic analysis is a market-by-market assessment of the existence and sources of competitive advantages.

When there are no competitive advantages present, then genuine strategic issues are of little concern. Therefore, in markets along the “Competitive Advantage: No” branch in figure 1.1, operational effectiveness—efficiency, efficiency, efficiency—is both the first priority and the last.

But for markets along the “Competitive Advantage: Yes” branch, where companies do benefit from competitive advantages, the next step is to identify the nature of the competitive advantages and then to figure out how to manage them. The alternatives are not pleasant. If the advantages dissipate, whether through poor strategy, bad execution, or simply because of the unavoidable grindings of a competitive economy, these firms will find themselves on a level economic playing field—the no-competitive-advantage branch—where life is all work and where profits, except for the exceptionally managed companies, are average at best.



FIGURE 1.1

Strategic analysis, step one

THE COMPETITIVE LANDSCAPE

MANAGING COMPETITIVE ADVANTAGES

By definition, in any market in which companies enjoy a competitive advantage, there will be a short list of legitimate competitors. At the extreme, companies such as Microsoft in the world of PC operating systems or IBM in its golden days will find themselves alone or surrounded by dwarfs. From their perspective, their competitors constitute an army of ants who can't enjoy the picnic because they are outside the barriers to entry. These firms are free to make their decisions without regard to what the ants might do in response to their initiatives. They need not spend much time anticipating specific competitive interactions.

In this situation—generally one large firm and many smaller ones—a company is either an ant or an elephant. The ants, outside the walls and looking in, operate at a competitive disadvantage. The strategy for a firm that finds itself in the ant's position is clear-cut. If it is already in the industry, it should consider getting out as painlessly as possible and returning to its owners as much of its economic resources as are salvageable. Admittedly, the list of CEOs who have followed this prescription is short. If it is considering getting into the business, the company ought to stop and look elsewhere because whatever slim chance it has for success depends entirely on the elephant competitor messing up.

And then, even if the incumbent's advantage shrinks and the barriers to entry disappear, the new firm

will be just one of many entrants pursuing profit on an essentially level playing field. It should remind itself of Groucho Marx's rule not to join any club that would have him as a member. At best, economic life will be average, with normal profits; more likely, the elephant trods on it and the ant gets crushed.

For an elephant operating within the barriers, life is sweet and returns are high. But competitive advantages still have to be managed. Complacency can be fatal, as can ignoring or misunderstanding the sources of one's strength. An elephant's first priority is to sustain what it has, which requires that it recognize the sources and the limits of its competitive advantages.

A thorough understanding makes all the difference:

- It allows the firm to reinforce and protect existing advantages and to make those incremental investments that can extend them.
- It distinguishes those potential areas of growth—both geographically and in product lines—that are likely to yield high returns from tempting areas that would undermine the advantages.
- It highlights policies that extract maximum profitability from the firm's situation.
- It spots the threats that are likely to develop and identifies those competitive inroads that require strong countermeasures.

For functional departments within the firm, understanding the nature of the competitive advantages is essential for capital budgeting, for marketing, for evaluating mergers and acquisitions, and for new ventures.

In these markets of one dominant firm and an army of ants, strategic analysis for the dominant firm consists almost exclusively of understanding and managing competitive advantages. It doesn't need to confront the complexities of explicit mutual interactions among competitors. We illustrate this state in figure 1.2, which extends figure 1.1.

CONFLICTS AS GAMES: INTERACTING WITH COMPETITORS

In the remaining strategic situations, several companies enjoy roughly equivalent competitive advantages within a single market setting. The soft drink market in the United States is a prime example. Nationally, Coke and Pepsi are two elephants, with the other players considerably smaller, although in particular geographic markets, regional favorites like Dr Pepper may be legitimate competitors. Commercial aircraft manufacturing has a similar structure. Boeing and Airbus control the market for larger jets, with the smaller manufacturers like Embraer and Bombardier competing in the regional jet market. In the personal computer business, Intel and Microsoft dominate their specific niches, but they compete indirectly against one another for a share of the overall value created in the industry.

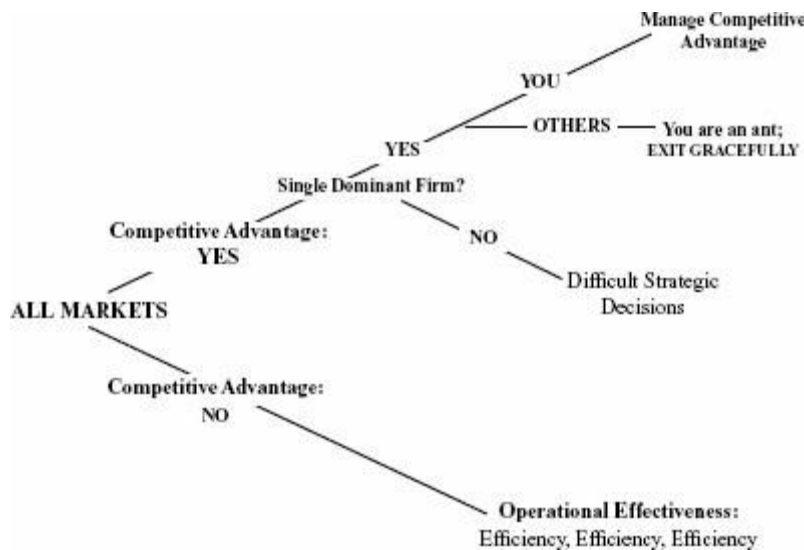


FIGURE 1.2
A single dominant firm

It is for companies in these markets, those that enjoy the benefits of competitive advantages but with potent competitors of similar capabilities, that strategy formulation is most intense and demanding. They face the big challenge of figuring out how to manage their competitors.

To develop an effective strategy, a company not only needs to know what its competitors are doing, but to also be able to anticipate these competitors' reactions to any move the company makes. This is the true essence of strategic planning. It embraces all of the things a company does in which a competitor's direct reactions are critical to its performance—pricing policies, new product lines, geographical expansions, capacity additions.

There are several distinct approaches that are particularly valuable in developing competitive strategies: game theory, simulation, and cooperative analysis.

Classical game theory is primarily useful because it imposes a systematic approach to collecting and organizing the mass of information about how competitors may behave. Game theory, as the *Stanford Encyclopedia of Philosophy* describes it, is “the study of the ways in which *strategic interactions* among *rational players* produce *outcomes* with respect to the *preferences* (or *utilities*) of those players, none of which might have been intended by any of them.”

The salient features of a competitive situation are:

- *The players*—a restricted number of identifiable actors, generally competitors; if the list is not short and manageable, there are probably no genuine barriers to entry
- *The actions* each player can pursue—the choices that are available to them
- *The motives* that drive them—profitability is the most common in business, but other goals, like winning against competitors regardless of the costs to oneself, may take hold and therefore need to be considered
- *The rules* that govern the game—who goes when, who knows what and when, and what penalties there are for breaking the rules

Fortunately, the fundamental dynamics of the great majority of competitive situations can be captured by two relatively simple games.

The prisoner's dilemma (PD) game has been thoroughly studied theoretically, historically, and

experimentally. It describes competition that concerns price and quality. A great deal is known about how a PD game is likely to play out, and this knowledge can be brought to bear on any situation in which price/quality competition is a key to competitive interactions. We describe the PD game in chapter 7 and use it to analyze competitive interactions in chapters 9 and 10.

Another game focuses on entry/preemption behavior, by capturing the dynamics of quantity and capacity competition (unfortunately this game lacks a catchy name). Whenever a company decides to build a new plant or open a new store in a market served by a competitor, entry/preemption is the game being played. There is also a wealth of established knowledge about how this game works out. We will discuss entry/preemption in chapter 11 and illustrate its principles at play in chapters 12 and 13.

Given these available insights, a valuable approach to strategic analysis is to start by putting this received wisdom to use. First you must identify the competitive situations to which one or another of these two games can appropriately be applied. For example, if an industry's history has been dominated by a long-lived and debilitating price war, then the natural place to look for a solution is the accumulated knowledge about how to play the prisoner's dilemma game. If the industry is one in which any expansion by one firm has habitually induced its rivals to counter with their own expansions, then the entry/preemption game provides the template for strategic analysis.

In simple, straightforward interactions, it may be possible to anticipate how the game will evolve merely by listing the various courses of action and comparing the results. In practice, however, alternative possibilities multiply rapidly, and the analysis becomes intractable. In many cases, a better way to proceed is by simulation. One can assign individuals or teams to represent each competitor, provide them with appropriate choices for actions and with motives, and then play the game several times. The simulation should provide a rough sense of the dynamics of the situation, even though the outcomes are only rarely definitive.

A Cooperative Alternative

In addition to classic games and simulations, another approach to analyzing competition among the elephants is to assume that instead of battling, companies can learn how to cooperate for mutual gain and to fairly share the benefits of their jointly held competitive advantage. This type of interaction among competitors—which could also be called “bargaining”—makes all the players better off, but it requires an outlook and a disposition rarely found in this environment.

Players, nonetheless, need to think about what this ideal state of affairs would look like, even if it is not immediately practical. They need to identify joint gains and envision the best configuration of market activity. This would be the one in which costs are minimized, products and services most efficiently produced and delivered, and prices set to maximize income. In this ideal configuration, everyone in the market, including their competitors, must benefit. In other words, if this market were organized as a cartel or a monopoly, what would it look like? The players also have to decide upon a fair division of the spoils, because cooperative arrangements do not last if any participant believes it is being unfairly treated.

This analysis of the theoretically ideal market configuration has two distinct benefits. First, it identifies the possibilities that a cooperative posture might produce. Second, it helps a firm on the margin of a protected market, or a potential entrant, to set reasonable strategic goals.

For example, the relatively high-cost supplier with no captive customers should see that it cannot expect to gain any advantage through strategic alliances, competitive threats, or other means. That's because, if the market is configured efficiently, such a supplier has really no role to play. Why should other, more powerful competitors support it at the price of a reduction in overall industry performance, especially when it is they who will inevitably pay the costs? In other words, if you don't bring anything to the dance, don't expect to take anything home.

When these conditions apply, the high-cost firm's continued existence will usually hinge on irrational and noncooperative behavior from the other companies. Identifying and exploiting that behavior—making sure they don't get together—thus becomes the core of its strategy.

In practice, a high level of cooperation among firms in any market is rare. Still, contemplating

cooperative possibilities reveals aspects of the strategic situation that can guide company decision making even in the absence of full-fledged cooperation. It adds a bargaining perspective as a complement to the more traditional noncooperative assumptions embodied in classical game theory and other treatments of competitive interaction.

Taken together, these three approaches—application of knowledge about specific games (prisoner's dilemma, entry/preemption), simulation, and cooperative analysis—produce a balanced and comprehensive treatment of the problems of formulating strategy in markets with a few genuine competitors, all mutually capable and conscious of one another.

This last step in the analysis is depicted in figure 1.3, which extends the previous figures to incorporate those situations in which several firms with competitive advantages share a market.

THE ROAD AHEAD

In this chapter and the two that follow, we discuss competitive advantage in general (position 1 in figure 1.3). There are only a few types of competitive advantage (demand, supply, and economies of scale) and two straightforward tests (market-share stability and high return on capital) to confirm their existence. Next, we will cover those situations in which a single firm dominates a market, using historical examples to illustrate how the different companies have identified and managed their competitive advantages, some successfully, others less so (position 2). We will then discuss competitive interactions among firms that share a single market (position 3). For these companies, strategy can lead to continual war punctuated by the occasional cease-fire, or to long-term cooperation for mutual benefit.

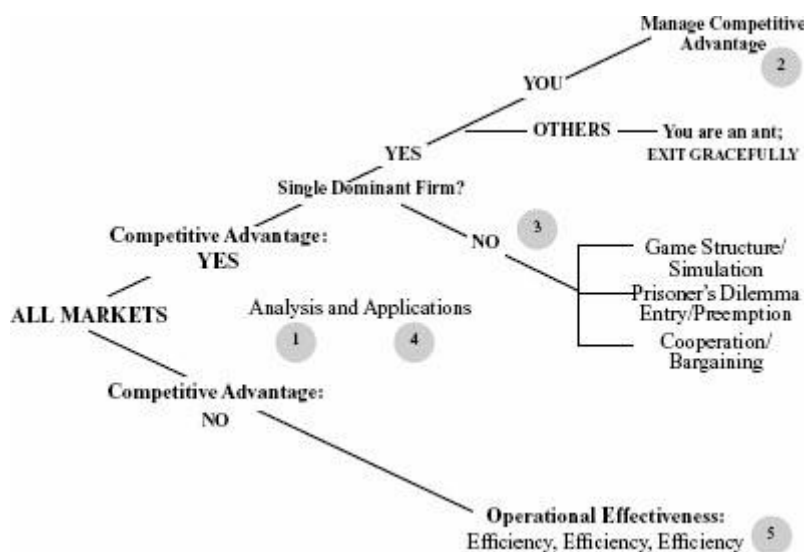


FIGURE 1.3

Architecture of the book

In the later chapters of the book we apply the competitive advantage concepts to functional areas like valuation, mergers and acquisitions, and brand extensions (position 4). Finally, we will turn to those markets in which there are no barriers to entry or competitive advantages (position 5), to explain why some firms do much better than others even though there is no fundamental economic distinction between them. Good management matters enormously. The key to operational effectiveness is relentless focus, which requires that the enveloping fog of visionary strategic possibilities first be dissipated. This book is designed to do just that.

Like most other recent authors on strategy, we owe a debt to Michael Porter. As we mentioned earlier,

Porter highlighted the importance of interactions among economic actors and identified the five forces that he feels explain the competitive world in which a company operates. He thus gave us an invaluable approach, but the complexity of his model makes it difficult to apply. It sacrifices clarity for completeness. Attending to five forces at one time is not easy, especially if none of them has any claim to priority.

We have simplified Porter's approach by concentrating first on the one force that dominates all the others: barriers to entry. Then we turn to the other forces, starting with industry competitors and direct competitive interactions where these apply and next including suppliers and customers in a bargaining context. Our purpose here is not to ignore Porter's forces but to prioritize and clarify them. Simplicity and clarity are important virtues of strategic analysis, provided we keep in mind Einstein's admonition that "Everything should be made as simple as possible, but not simpler."

CHAPTER 2

Competitive Advantages I

Supply and Demand

THE DIFFERENTIATION MYTH

According to an axiom of managerial wisdom, commodity businesses are to be avoided. Any operation in which sellers offer essentially identical products to price-sensitive customers faces an intense struggle for economic survival and must accept a lower than average level of profitability.

Strategic thinking often seems to start with this admonition: Do not allow yourself to be trapped in a commodity business. Fledgling business majors are taught that the essential first step in formulating any legitimate business plan is to differentiate your product from that of the competition. But on its own, differentiation as a strategy to escape the woes of commodity businesses has one major flaw—it doesn't work.

Differentiation may keep your product from being a generic commodity item, but it does not eliminate the intense competition and low profitability that characterize a commodity business. Although nature of the competition may change, the damage to profit persists because the problem is not lack of differentiation, but the absence of barriers to entry. Understanding the significance of barriers to entry and how they operate is the key to developing effective strategy.

There is probably no product in the world more successfully differentiated from its global competitors than a Mercedes-Benz automobile. Many newly installed heads of state seek to buttress their positions by acquiring at least one; the more grandiose opt for a fleet. Branding is a primary tactic for product differentiation, and the Mercedes-Benz star may be the most widely recognized symbol for quality in the global marketplace. Cadillac once had an equivalent position in the United States, and its name entered the vernacular as a mark of quality—"the Cadillac of burgers" (Nat Cole's commentary on a P. J. Clarke hamburger in the 1950s), "the Cadillac of bassinets" (www.epinions.com), "the Cadillac of PCs" (*BusinessWeek*, May 19, 1999). And yet, despite the recognition and the associations with quality, Mercedes-Benz and Cadillac have not been able to translate the power of their brands into exceptionally profitable businesses. In fact, their economic performance is not distinguishable from those mundane commodity businesses everyone tries so assiduously to avoid.

The process by which high returns are eroded is straightforward. In the case of automobiles, it began in the years after World War II, when Cadillac (with Lincoln in the United States) and Mercedes-Benz

dominated their local markets and made exceptional profits. Those profits attracted other companies to enter these markets, seeking a share of the high returns. In the American luxury car market, the first entrants of scale were the Europeans—Mercedes, Jaguar, BMW in the 1970s—soon followed by the Japanese—Acura, Lexus, Infiniti in the 1980s.

If luxury cars had been a commodity business, the entry of new competitors would have undermined prices. But that is not what happened. Cadillacs and Lincolns continued to sell for premium prices, even after the entry of the imports. This was because the imports did not, as a rule, undercut them on price. But with a wider variety of luxury cars available, the sales and market shares of Cadillac and Lincoln began to decline. Meanwhile, the fixed costs of their differentiation strategy—product development, advertising, maintaining dealer and service networks—did not contract. As a result, the fixed cost for each auto went up, and the overall profit margin per car dropped. Cadillac and Lincoln found themselves selling fewer cars with lower profit margins. Their profitability shrank even though their products were thoroughly differentiated.

This process—in which prices remain stable, while sales fall and fixed costs per unit sold rise—differs from that which operates in a price-driven (commodity) market, but the ultimate effect on profitability is the same. In the luxury car business, the decline did not happen all at once. When the first European brands entered the market, Cadillac and Lincoln lost some of their sales and saw their margins erode. But after this first wave, returns were still high enough to attract additional entrants. Inevitably, more competitors showed up, this time as carriage trade versions of Hondas, Toyotas, and Nissans.

The flood of entrants would only cease when lucrative profit opportunities in the luxury car market vanished. These opportunities would disappear only after entrants had fragmented the market to such an extent that high fixed costs per unit eliminated any extraordinary profit. When financial returns in this market became ordinary, the attraction ceased and entry stopped.

Given a process like this, it should be no surprise that even a brand as renowned as Mercedes-Benz has produced no better than average financial returns. By itself, product differentiation does not eliminate the corrosive impact of competition. Well-regarded brands are no better protected than commodities. High returns attract new entrants, or expansion by existing competitors, or both, in all markets. The inexorable nature of this process leads to our most important statement of strategic principle:

If no forces interfere with the process of entry by competitors, profitability will be driven to levels at which efficient firms earn no more than a “normal” return on their invested capital. It is barriers to entry, not differentiation by itself, that creates strategic opportunities.

EFFICIENCY MATTERS

This proposition has several significant implications. The first is the connection between *efficiency* and survival in all markets where there are no barriers to entry.

In copper, steel, or bulk textiles, it is clear that if a company cannot produce at a cost at or below the price established in the market, it will fail and ultimately disappear. Since the market price of a commodity is determined in the long run by the cost levels of the most efficient producers, competitors who cannot match this level of efficiency will not survive. But essentially the same conditions also apply in markets with differentiated products.

Product differentiation is like lunch; it doesn't come for free. Companies must invest in advertising, product development, sales and service departments, purchasing specialists, distribution channels, and a host of other functions to distinguish their offerings from those of their competitors. If they cannot operate all these functions efficiently, then they will lose out to better-run rivals. The prices their products command and/or their market share will trail those of their competitors. As a consequence, the return they earn on the investments made to differentiate their products will fall below that of their more efficient competitors.

When the successful companies expand, which they inevitably do, market shares of less efficient firms decline further. Even if they can continue to charge a premium price, the returns they earn on their investments in differentiation will fall.

Ultimately, when the returns no longer justify the investment, the less efficient companies will struggle merely to stay afloat. This has been the history of many industries with differentiated products—cars, appliances, retailing, beer, airlines, office equipment, and many others. Only a few successful competitors survive, and many once-dominant firms—General Motors, Zenith, A&P, Coors, Kmart, PanAm—decline, sometimes terminally.

The need for efficiency when products are differentiated is no less crucial than when they are commodities, and it is more difficult to achieve. In a commodity business, efficient operations are largely a matter of controlling production costs. Marketing requirements are usually minimal. With differentiated products, efficiency is a matter both of production cost control and effectiveness in all the functions that underlie successful marketing.

Competition extends to dimensions beyond simple cost control. A company in a differentiated business has to manage product and packaging development, market research, a product portfolio, advertising and promotion, distribution channels, and a skilled sales force, and do it all without wasting money. Unless something interferes with the processes of competitive entry and expansion, efficient operations in all aspects of the business are key to successful performance.

The second implication of our basic proposition involves understanding the nature of a “normal” return. Investors in a business need to be compensated for the use of their capital. To be “normal,” the return to capital should be equivalent to what the investor can earn elsewhere, suitably adjusted for risk. If investors can earn a 12 percent return by buying stocks in companies with average risk, then the companies have to earn 12 percent on their own average risk investments. Otherwise, investors will ultimately withdraw their capital. In practice, a management that produces a lower rate of return can hang on for many years before the process runs its course, but in the long run—and “normal” implies the average return over a period of years—the company will succumb.

BARRIERS TO ENTRY AND COMPETITIVE ADVANTAGES

Barriers to entry lie at the heart of strategy. The first task in our simplified approach to strategic thinking is to understand what barriers are and how they arise. It is essential to distinguish between the particular skills and competences that a firm may possess and genuine barriers to entry, which are characteristics of the structural economics of a particular market.

The skills and competencies of even the best-run companies are available to competitors, at least in theory. Systems can be replicated, talent hired away, managerial quality upgraded. All these are ultimately parts of the operational effectiveness of the company.

Strategy, on the other hand, is concerned with structural barriers to entry. Identifying those barriers and understanding how they operate, how they can be created, and how they must be defended is at the core of strategic formulation. If barriers to entry exist, then firms within the barriers must be able to do things that potential entrants cannot, no matter how much money they spend or how effectively they emulate the practices of the most successful companies. In other words, firms within the barriers must enjoy competitive advantages over potential entrants.

ENTRY, EXIT, AND LONG-RUN PROFITABILITY

There is a reverse side to the entry and expansion process in industries with out barriers to entry: exit and contraction. Just as extraordinary profits attract new competitors or motivate existing ones to expand, below-average profits will keep them away. If the process is sustained long enough, the less efficient firms within the industry will wither and disappear. But these two processes are not symmetrical. As any family with children knows, it is far easier to buy kittens and puppies than to drown them later. In business, the kittens and puppies are new plants, new products, new capacity of all sorts, and they are much more fun to

acquire than to close down.

Because of this asymmetry, it takes longer for an industry with excess capacity and below-average returns to eliminate unnecessary assets than it does for an industry with above average returns to add new capacity. Periods of oversupply last longer than periods in which demand exceeds capacity. Though in the long run companies do need to provide investors with returns commensurate with the level of risk—to earn their cost of capital—the long run can extend beyond what anyone other than management would regard as reasonable. The problem is compounded by the longevity of new plants and products. For mature, capital-intensive businesses, these time spans are apt to be longer than for younger industries that require less in the way of plant and equipment.

Commodity businesses are generally in the mature camp, and part of their poor performance stems from their durability, even after they are no longer earning their keep. But the powerful driving force is the dynamics of entry and exit, not the distinction between commodities and differentiated products. Competitors with patient capital and an emotional commitment to the business can impair the profitability of efficient competitors for years, as the history of the airlines industry attests.

Although often treated as separate aspects of strategy, barriers to entry and competitive advantages are essentially alternative ways of describing the same thing. The only necessary qualification to this statement is that barriers to entry are identical to *incumbent* competitive advantages; whereas *entrant* competitive advantages—situations in which the latest firm to arrive in the market enjoys an edge (the benefit of the latest generation of technology, the hottest product design, no costs for maintaining legacy products or retired workers)—are of limited and transitory value.

Once an entrant actually enters a market, it becomes an incumbent. The same types of advantages it employed to gain entry and win business from existing firms—cutting-edge technology, lower labor costs, hotter fashions—now benefit the next new kid on the block. If the last firm in always has the advantage, there are, by definition, no barriers to entry and no sustainable excess returns.

Because competitive advantages belong only to the incumbents, their strategic planning must focus on maintaining and exploiting those advantages. Meanwhile, any firms bold enough to enter markets protected by barriers to entry ought to devise plans that make it less painful for incumbents to tolerate them than to eliminate them.

TYPES OF COMPETITIVE ADVANTAGES

There are really only a few types of genuine competitive advantages. Competitive advantages may be due to superior production technology and/or privileged access to resources (supply advantages). They may be due to customer preference (demand advantages), or they may be combinations of economies of scale with some level of customer preference (the interaction of supply-and-demand advantages, which we discuss in chapter 3). Measured by potency and durability, production advantages are the weakest barrier to entry; economies of scale, when combined with some customer captivity, are the strongest.

In addition, there are also advantages emanating from governmental interventions, such as licenses, tariffs and quotas, authorized monopolies, patents, direct subsidies, and various kinds of regulation. Television broadcast licenses, for example, convey powerful competitive advantages to their holders. Designation as a “Nationally Recognized Statistical Rating Organization” by the Securities and Exchange Commission helps Standard & Poor’s, Moody’s, and several smaller agencies maintain their dominance in the market for credit ratings, despite the steep fees they charge. Even in the most liberal economy, the state is an actor from whom some benefit more than others. Government favor aside, the other sources of competitive advantages are rooted in basic economic conditions.

SUPPLY ADVANTAGES: COMPETITIVE COSTS

One way a market incumbent obtains a competitive advantage is by having a lower cost structure that cannot be duplicated by potential rivals. The incumbent can earn attractive returns under prevailing market conditions—prices and sales levels—but potential entrants, thanks to their higher cost structures, cannot.

Such an advantage deters most sensible firms from entering the incumbent's market. If some foolishly optimistic companies make the attempt anyway, the incumbent, taking advantage of its lower cost structure, can underprice, outadvertise, outservice, or otherwise outmarket them. Ultimately, the would-be entrants fail and exit the market, leaving a discouraging lesson for any who would follow them.

Lower cost structures are due either to lower input costs or, more commonly, proprietary technology. In its most basic form, proprietary technology is a product line or a process that is protected by patents. During the term of the patent, protection is nearly absolute. Patent infringement penalties and legal fees make the potential costs to a would-be entrant impractically high, perhaps even infinite.

Historically, Xerox in copiers, Kodak and Polaroid in film, and pharmaceutical companies in a range of medicines have enjoyed these kinds of advantages for the lives of their product patents. Process patents may be equally powerful. Alcoa was able to monopolize the aluminum market for many years through patents on processes, and DuPont has a history of economic success based on both process and product patents. But patents expire, generally after seventeen years. Thus, cost advantages based on patents are only sustainable for limited periods. Compared to IBM's long-term dominance in computers, from the late 1950s to 1990, for example, or Coca-Cola's century-long history in the soda market, patent protection is relatively brief.

Outside of pharmaceuticals, patent-protected positions are relatively rare. Even within pharmaceuticals, "me-too" products—how many selective serotonin reuptake inhibitors are there on the market?—tend to undermine technological advantages. But patents are not the only source of advantages from proprietary technology.

In industries with complicated processes, learning and experience are a major source of cost reduction. The percentage of good yields in most chemical and semiconductor processes often increases dramatically over time, due to numerous small adjustments in procedures and inputs. Higher yields mean lower costs, both directly and by reducing the need for expensive interventions to maintain quality. The same adjustments can trim the amount of labor or other inputs required. Companies that are continually diligent can move down these learning curves ahead of their rivals and maintain a cost advantage for periods longer than most patents afford.

But, as with patents, there are natural limits to the sustainability of these learning-based proprietary cost advantages. Much depends on the pace of technological change. If it is swift enough, it can undermine advantages that are specific to processes that quickly become outdated. Cost advantages thus have shorter life expectancies in rapidly changing areas like semiconductors, semiconductor equipment, and biotechnology.

On the other hand, if technological change slows down as an industry matures, then rivals will eventually acquire the learned efficiencies of the leading incumbents. In the 1920s, RCA, manufacturing radios, was the premier high-tech company in the United States. But over time, the competitors caught up, and radios became no more esoteric to make than toasters. In the long run everything is a toaster, and toaster manufacturing is not known for its significant proprietary technology advantages, nor for high returns on investment.

Further, simple products and simple processes are not fertile ground for proprietary technology advantages. They are hard to patent and easy to duplicate and transfer to other firms. If a particular approach to production and/or service can be fully understood by a few employees, competitors can hire them away and learn the essentials of the processes involved.* If the technologies are simple, it is difficult for the developer to make the case for intellectual theft of proprietary property since much of the technology will look like "common sense." This limitation is particularly important in the vast and growing area of services—medical care, transaction processing, financial services, education, retailing—that account for roughly 70 percent of global economic activity. The technology in these fields tends to be either rudimentary or else it has been developed by specialist third parties. Technology that is truly proprietary must be produced within

the firm. Markets in which consultants or suppliers, such as NCR in retailing, are responsible for most product or process innovations cannot be markets with substantial cost advantages based on technology, because the advantages are available to anyone willing to pay for them.

This is why the idea that information technologies will be the source of competitive advantages is misguided. Most of the innovations in information technology are created by firms like Accenture, IBM, Microsoft, SAP, Oracle, and a number of smaller and more specialized companies that make their living by disseminating innovations as widely as they can. Innovations that are common to all confer competitive advantages on none. Some firms may make better use of those innovations, but that is a matter of organizational effectiveness, not competitive advantage.

If cost advantages rooted in proprietary technology are relatively rare and short-lived, those based on lower input costs are rarer still. Labor, capital in all its various forms, raw materials, and intermediate inputs are all sold in markets that are generally competitive. Some companies have to deal with powerful unions that are able to raise labor costs. They may also face an overhang of underfunded pension and retiree health-care liabilities. But if one company can enter the market with nonunion, low-benefit labor, others can follow, and the process of entry will eliminate any excess returns from lower labor costs.

Unionized firms may stagnate or die, yet the survivors enjoy no competitive advantages. The first company to find a lower cost of labor in a country such as China may gain a temporary benefit over rivals who are slower to move, but the benefit soon disappears as others follow.

Access to cheap capital or deep pockets is another largely illusory advantage. One lesson the Internet boom taught is how easy it can be to raise money. Companies with barely plausible business plans had virtually unlimited access to capital at rates that proved ridiculously cheap, given the risks of new and untested businesses. But that easy funding did not assure them success.

History is full of companies driven out of business by more efficient competitors—steel producers, appliance manufacturers, small-scale retailers, and nationwide chain stores. But only a small number of companies have been forced to the wall by competitors whose sole advantage was their deep pockets. In many cases, the putatively deep-pocketed firms—such as IBM, AT&T, Kodak, Japan Inc.—have chiefly hurt themselves by spending lavishly on mistaken ventures in part because they simply had the money.

An argument sometimes made, especially during the high tide of Japanese incursions into the U.S. and European manufacturing sectors, is that some companies or sectors enjoy preferred access to capital, making capital “cheap” for them. This access is often underwritten by government, as in the case of Airbus. Sometimes the “cheap” capital is based on access to funds that were raised in the past at unusually low costs. But the real cost of funds in these cases is not “cheap.”

If capital markets at large offer 10 percent returns on investments, then investing capital in projects that return 2 percent is a money loser—an 8-percentage-point loser—even though the funds may have cost only 2 percent to raise. Taking advantage of “cheap” capital in this way is a stupidity, not a competitive advantage. Like all stupidities not underwritten by a government, it is unlikely to be sustainable for very long.

In the absence of government support, the notion of “cheap” capital is an economic fallacy. “Cheap” capital that is due to government support is best thought of as just another competitive advantage based on a government subsidy.

Some companies do have privileged access to raw materials (e.g., Aramco) or to advantageous geographical locations (e.g., United Airlines at Chicago’s O’Hare International Airport). These advantages, though, tend to be limited both in the markets to which they apply and in the extent to which they can prevent competitive entry. Aramco can make more profit on a barrel of oil than Norway’s Statoil, but so long as demand for oil is high enough, it can’t keep Statoil out of the market. And United cannot extend its strong position at O’Hare to other airports.

The same is true for exceptional talent. The studio that has signed up a Julia Roberts or a Tom Cruise enjoys a competitive advantage over other studios when it comes to opening a new movie, although even stars of this magnitude are no guarantee of success. However, like other advantages based on special resources, this one is limited in several ways. First, star power is ultimately owned not by the studio but by the stars themselves. They can sign with whomever they like for the next film. Second, stars lose their appeal or their contracts expire. And there are no barriers to entry in creating the next Julia Roberts or Tom Cruise, as the

armies of aspiring actors and agents attest. Third, the value of any star is limited to a particular audience and does not translate into broad market dominance.

These basic limitations apply equally to other special resources like rich mineral deposits or advantageous leases on desirable locations. With few exceptions, access to low-cost inputs is only a source of significant competitive advantage when the market is local, either geographically or in product space. Otherwise, it is not much help as a barrier to entry.

DEMAND ADVANTAGES: CUSTOMER CAPTIVITY

For an incumbent to enjoy competitive advantages on the demand side of the market, it must have access to customers that rivals cannot match. Branding, in the traditional sense of a quality image and reputation, by itself is not sufficient to establish this superior access. If an entrant has an equal opportunity to create and maintain a brand, the incumbent has no competitive advantage and no barrier impedes the process of entry.

Competitive demand advantages require that customers be captive in some degree to incumbent firms. This captivity is what gives the incumbent its preferred access. In a cigarette ad of some years ago—when there still were cigarette ads—smokers proclaimed that they “would rather fight than switch.” Every company would love to have customers with this kind of loyalty.

It may not be impossible for entrants to lure loyal customers away from an incumbent. They can cut prices to the bone, or even give the product away to induce people to try it. They can tie it in to other products and otherwise make it desirable. But customer captivity still entails a competitive advantage because entrants cannot attract customers under anywhere near the same terms as the established firms.

Unless they have found a way to produce the item or deliver the service at a cost substantially below that of the incumbent, which is not likely, either the price at which they sell their offerings or the volume of sales they achieve will not be profitable for them, and therefore not sustainable. The incumbent has a competitive advantage because it can do what the challenger cannot—sell its product at a profit to its captive customers.

There are only a limited number of reasons why customers become captive to one supplier.

HABIT

Cigarette smoking is an addiction; buying a particular brand is a habit. Habit leads to customer captivity when frequent purchases of the same brand establish an allegiance that is as difficult to understand as it is to undermine. Cigarette smokers have their brands, though in a pinch they will light up a substitute; such is the pull of the addiction.

Soda drinkers are also loyal. To someone who generally asks for coffee, tea, or water, Coca-Cola and Pepsi taste pretty much alike. Yet each cola has its devotees, and they are generally firm in their commitments. Coca-Cola decided to reformulate and sweeten the drink in the 1980s, to stem the loss of young and therefore uncommitted cola lovers to Pepsi. It made the change only after extensive taste tests among its own drinkers convinced them that the New Coke taste had more support. But when the company actually introduced New Coke and took the traditional drink off the shelves, Coca-Cola loyalists were furious. After some months of indecision, the company reversed course and reestablished Classic Coke, as it was briefly called, as the flagship brand. Coca-Cola was lucky to escape the problem it had created. As a rule, it isn't wise to antagonize captive customers.

For reasons that are not entirely evident, the same kind of attachment does not extend to beer drinkers. People who normally buy Coors or Budweiser for their homes, and order it when they eat in local restaurants, are only too eager to have a Corona or a Dos Equis in a Mexican restaurant, or a Tsingtao in a Chinese one, which may explain why Anheuser-Busch bought a stake in Tsingtao. Yet the cola drinker seldom thinks of asking for Great Wall Cola or some such brand.

Habit succeeds in holding customers captive when purchases are frequent and virtually automatic. We

find this behavior in supermarkets rather than automobile dealers or computer suppliers. Most consumers enjoy shopping for a new car, and the fact that they owned a Chevrolet last time, or a BMW, doesn't mean they won't test-drive a Ford or a Lexus.

Both personal computer buyers and IT managers shop for replacement hardware on the basis of price, features, and dependability, not whether their current machines are IBMs, Dells, or HPs. They do need to think about compatibility with their existing software, but that is a legacy situation and a switching-cost issue and does not mean that they are creatures or captives of habit.

Habit is usually local in the sense that it relates to a single product, not to a company's portfolio of offerings. The habitual user of Crest toothpaste is not necessarily committed to Tide or any of the other Procter & Gamble brands.

SWITCHING COSTS

Customers are captive to their current providers when it takes substantial time, money, and effort to replace one supplier with a new one. In the computer era, software is the product most easily associated with high switching costs. The costs can become prohibitive when they involve not simply the substitution of some computer code, proprietary or commercial, but the retraining of the people in the firm who are the application users.

In addition to all the extra money and time required, any new system is likely to bump up the error rate. When the applications involved are critical to the company's operations—order entry, inventory, invoicing and shipping, patient records, or bank transactions—few want to abandon a functioning system, even for one that promises vast increases in productivity, if it holds the threat of terminating the business through systemic failure, the ultimate “killer app.”

These costs are reinforced by network effects. If your computer system must work compatibly with others, then it is difficult to change to an alternative when others do not, even if the alternative is in some ways superior. The move will be costly, to ensure continued compatibility, and perhaps disastrous if the new system cannot be meshed with the existing one.

Software is not the only product or service that imposes substantial switching costs on customers and thus gives the incumbent a leg up on potential competitors. Whenever a supplier has to learn a great deal about the lives, needs, preferences, and other details of a new customer, there is a switching cost involved for the customer, who has to provide all this information, as well as a burden on the supplier to master it. This is one reason that clients don't switch lawyers lightly. Likewise, doctors who become comfortable prescribing a particular medicine may be reluctant to substitute a new drug with which they are less familiar, despite all the brochures and entreaties from the drug detail person.

Standardized products, especially if the standards are not proprietary, are one antidote to high switching costs, which is why customers like them. In its glory days, the IBM mainframe was built out of IBM components, ran an IBM operating system, used IBM-produced applications programs, and was even leased from IBM. Moving from one IBM computer to another was difficult, but switching to a new system entirely was perilous and daunting. Switching became easier as other companies offered compatible peripherals, applications programs, and financing. And the whole edifice began to collapse when new firms found ways to link desktop machines, built to open standards—thanks to IBM's design decision for its PC—into useable systems.

Changing credit cards used to require careful timing. Old card balances had to be paid off before the new credit facility became available. Then the card issuers began to offer preapproval and to encourage balance transfers. Costs of switching were reduced or eliminated, and competition in the industry intensified.

SEARCH COSTS

Customers are also tied to their existing suppliers when it is costly to locate an acceptable replacement. If the

need is a new refrigerator, the search costs are minimal; information and ratings on competitive products are easily available. But for many people, finding a new doctor involves more than looking in the yellow pages or even in a health-care network directory. There is no ready source of the kind of information a prospective patient wants, and given the personal nature of the relationship, no alternative to direct experience.

High search costs are an issue when products or services are complicated, customized, and crucial. Automobile insurance is basically a standardized product, so much coverage at so much cost, with concern for the reliability of the underwriter alleviated by state regulation. Home ownership insurance, by contrast, is more detailed, and can involve the kind of coverage, the deductibles, special schedules of items included or excluded, the creditworthiness of the insurance company, its history of payment for claims, and other issues.

All these details foster an aversion to change. Only homeowners made seriously unhappy by their insurer's premium or level of service are going to take the trouble to search for a replacement, especially since the penalty for picking an inadequate insurer may be substantial. In this case, the real relationship may be with a trusted broker, not the actual underwriter, so the broker may enjoy the benefits of customer captivity because of the high switching costs.

For businesses, the more specialized and customized the product or service, the higher the search cost for a replacement. Professional services, which also may involve an intense level of personal contact, fit into this category, as do complicated manufacturing and warehousing systems. It is easier to upgrade with a current vendor or continue with a law firm even when not totally satisfied, because finding a better one is costly and risky. To avoid the danger of being locked in to a single source, many firms develop relationships with multiple suppliers, including professional service providers.

Taken together, habits, switching costs, and search costs create competitive advantages on the demand side that are more common and generally more robust than advantages stemming from the supply or cost side. But even these advantages fade over time. New customers, by definition, are unattached and available to anyone. Existing captive customers ultimately leave the scene; they move, they mature, they die. In the market for teenage consumables, existing customers inevitably become young adults, and a new, formerly preteen, generation enters the market largely uncommitted. The process is repeated throughout the life cycle, putting a natural limit on the duration of customer captivity. Even Coca-Cola, as we shall see, was vulnerable to Pepsi when the latter discovered "the Pepsi Generation." Only a very few venerable products like Heinz ketchup seem to derive any long-term benefit from some intergenerational transfer of habit.

CHAPTER 3

Competitive Advantages II

Economies of Scale and Strategy

ECONOMIES OF SCALE AND CUSTOMER CAPTIVITY

The competitive advantages we have described so far are uncomplicated. An incumbent firm may defeat entrants either because it has sustainably lower costs or, thanks to customer captivity, it enjoys higher demand than the entrants. Together, these two appear to cover fully the revenue and cost elements that determine profitability. But there is an additional potential source of competitive advantage. In fact, the truly durable competitive advantages arise from the interaction of supply-and-demand advantages, from the linkage of economies of scale with customer captivity. Once the firm understands how these operate together—sometimes in ways that are surprisingly contrary to commonly held beliefs about the attractiveness of

growing markets—it can design effective strategies to reinforce them.

The competitive advantage of economies of scale depend not on the absolute size of the dominant firm but on the size difference between it and its rivals, that is, on market share. If average costs per unit decline as a firm produces more, then smaller competitors will not be able to match the costs of the large firm even though they have equal access to technology and resources so long as they cannot reach the same *scale* of operation. The larger firm can be highly profitable at a price level that leaves its smaller competitors, with their higher average costs, losing money. The cost structure that underlies these economies of scale usually combines a significant level of fixed cost and a constant level of incremental variable costs. An apparel company, for example, needs the same amount of fabric and labor to make each unit and very little in the way of complicated machinery, so its level of variable to fixed costs is high. A software publisher, by contrast, has almost all fixed costs, which are the expenses of writing and checking the software code. Once the program has been finished, the costs of producing an additional unit are miniscule. So its total expenses increase very slowly, no matter the number of customers. As the scale of the enterprise grows, the fixed cost is spread over more units, the variable cost per unit stays the same, and the average cost per unit declines.

But something in addition to this cost structure is necessary for economies of scale to serve as a competitive advantage. If an entrant has equal access to customers as the incumbents have, it will be able to reach the incumbents' scale. A market in which all firms have equal access to customers and common cost structures, and in which entrants and incumbents offer similar products on similar terms, should divide more or less evenly among competitors. This holds true for differentiated markets, like kitchen appliances, as well as commodity markets. All competitors who operate effectively should achieve comparable scale and therefore comparable average cost.

For economies of scale to serve as a competitive advantage, then, they need to be coupled with some degree of incumbent customer captivity. If an efficient incumbent matches his competitors on price and other marketing features, then, thanks to the customer captivity, it will retain its dominant share of the market. Though entrants may be efficient, they will not match the incumbent's scale of operations, and their average costs will be permanently higher.

The incumbent, therefore, can lower prices to a level where it alone is profitable and increase its share of the market, or eliminate all profit from competitors who match its prices. With some degree of customer captivity, the entrants never catch up and stay permanently on the wrong side of the economies of scale differential. So the combination of even modest customer captivity with economies of scale becomes a powerful competitive advantage.

The dynamics of situations like this are worth a closer look. It seems reasonable to think that a persistent entrant will sooner or later reach an incumbent's scale of operation if it has access to the same basic technologies and resources. If the incumbent is not vigilant in defending its market position, the entrant may indeed catch up. The Japanese entry into the U.S. car market, the success of Fuji Film in taking on Kodak, and the initial significant market share captured by Bic disposable razors from Gillette in the 1980s are testimony to the vulnerability of poorly safeguarded economies of scale advantages.

Still, if an incumbent diligently defends its market share, the odds are clearly in its favor. This is why it is important that incumbents clearly understand the nature of their competitive advantages and make sure that their strategies adequately defend them. Think of Microsoft in the operating systems market, Boeing versus McDonnell-Douglas in the commercial airframe business, or Pitney-Bowes in postage equipment.

A simple example should help explain why small markets are more hospitable than large ones for attaining competitive advantages. Consider the case of an isolated town in Nebraska with a population of fifty thousand or less. A town of this size can support only one large discount store. A determined retailer who develops such a store should expect to enjoy an unchallenged monopoly. If a second store were to enter the town, neither would have enough customer traffic to be profitable. Other things being equal, the second entrant could not expect to drive out the first, so its best choice would be to stay away, leaving the monopoly intact.

At the other extreme from our Nebraska town is downtown New York City. This large market can support many essentially similar stores. The ability of even a powerful, well-financed incumbent to prevent entry by a newcomer will be limited. It cannot, in other words, establish effective barriers to entry based on

economies of scale relative to its competitors. Markets of intermediate size and density, as we would expect, fall between small and large cities regarding the ability to establish and maintain barriers to entry. This general principle applies to product as well as to geographic space; the special-purpose computer in a niche market has an easier time in creating and profiting from economies of scale than the general-purpose PC competing in a much larger market.

Long before it became the global powerhouse in retailing, Wal-Mart enjoyed both high levels of profitability and a dominant market share in the south-central United States due to regional economies of scale in distribution, advertising, and store supervision. It defended its territory with an aggressive policy of “everyday low prices.” Southwest Airlines, with a regional franchise in Texas and the surrounding states, was similarly profitable, as have been a lot of other strong local companies in service industries like retailing, telecommunications, housing development, banking, and health care.

DEFENDING ECONOMIES OF SCALE

The best strategy for an incumbent with economies of scale is to match the moves of an aggressive competitor, price cut for price cut, new product for new product, niche by niche. Then, customer captivity or even just customer inertia will secure the incumbent’s greater market share. The entrant’s average costs will be uniformly higher than the incumbent’s at every stage of the struggle. While the incumbent’s profits will be impaired, the entrant’s will be even lower, often so much lower as to disappear altogether. The incumbent’s competitive advantage survives, even under direct assault.

The combination of economies of scale coupled with better access in the future to existing customers also produces an advantage in the contest for new customers and for new technologies. Consider the competition between Intel and Advanced Micro Devices (AMD)—or any other potential entrant, like IBM or Motorola—to provide the next-generation microprocessor for Windows-compatible personal computers.

Computer manufacturers are accustomed to dealing with Intel and are comfortable with the level of quality, supply stability, and service support they have received from it. AMD may have performed nearly as well in all these areas, but with a much smaller market share and less interaction, AMD does not have the same intimate association with personal computer manufacturers. If AMD and Intel produce next-generation CPUs that are similarly advanced, at equal prices, and at roughly the same time, Intel will inevitably capture a dominant market share. All Intel need do is match AMD’s offering to retain the roughly 90 percent share it currently commands. In planning its next-generation chip, Intel can afford to invest much more than AMD, knowing that its profits will be much greater, even if its CPU is no better.

A rough rule of thumb should lead Intel and AMD to invest in proportion to their current market shares. If each company invests 10 percent of current sales in R&D, Intel will outspend AMD \$2.6 billion to \$300 million. That enormous edge makes Intel the odds-on favorite in the race for next-generation technology. In fact, the situation is even more unequal for AMD. Should it manage to produce a better new chip, computer manufacturers would almost certainly allow Intel a significant grace period to catch up, rather than switch immediately to AMD. The history of competition between the two has seen instances both of Intel’s larger investments usually paying off in superior technology and of its customer captivity allowing it time to catch up when AMD has taken a lead. Thus, economies of scale have enabled Intel to sustain its technological advantage over many generations of technology.

Economies of scale in distribution and advertising also perpetuate and amplify customer captivity across generations of consumers. Even if smaller rivals can spend the same proportion of revenue on product development, sales force, and advertising as, for example, Kellogg’s, McDonald’s, and Coca-Cola, they can’t come close to matching the giants on actual dollars deployed to attract new customers. Because of the edge it gives incumbents in both winning new generations of customers and developing new generations of technology, the combination of economies of scale and customer captivity produces the most sustainable competitive advantages.

Three features of economies of scale have major implications for the strategic decisions that incumbents must make.

First, in order to persist, competitive advantages based on economies of scale must be defended. Any market share lost to rivals narrows the leader's edge in average cost. By contrast, competitive advantages based on customer captivity or cost advantages are not affected by market share losses. Where economies of scale are important, the leader must always be on guard. If a rival introduces attractive new product features, the leader must adopt them quickly. If the rival initiates a major advertising campaign or new distribution systems, the leader has to neutralize them one way or another.

Unexploited niche markets are an open invitation to entrants looking to reach a minimally viable scale of operations. The incumbent cannot concede these niches. When the Internet became a major focus of personal computing, Microsoft had to introduce its own browser to counter Netscape and offer network alternatives to niche players like AOL. When Pepsi-Cola targeted supermarkets in the 1950s as an alternative distribution channel, Coca-Cola was too slow to respond, and Pepsi picked up market share. The American motorcycle industry did not challenge Japanese companies like Honda when they began to sell inexpensive cycles in the 1960s. That was the beginning of the end for almost all the American firms. Harley-Davidson survived, though barely and with government help, in part because the Japanese allowed it to control the heavyweight bike niche. Economies of scale need to be defended with eternal vigilance.

Second, the company has to understand that pure size is not the same thing as economies of scale, which arise when the dominant firm in a market can spread the fixed costs of being in that market across a greater number of units than its rivals. It is the share of the relevant market, rather than size per se, that creates economies of scale.

The relevant market is the area—geographic or otherwise—in which the fixed costs stay fixed. In the case of a retail company, distribution infrastructure, advertising expenditures, and store supervision expenses are largely fixed for each metropolitan area or other regional cluster. If sales are added outside the territory, fixed costs rise and economies of scale diminish. When it was still in the cellular business, AT&T's cellular operations in the Northeast and Atlantic states had larger fixed costs per dollar of revenue in that region than Verizon's, which controlled a far greater share of the territory. The fact that AT&T cellular may have been larger nationally than Verizon cellular is irrelevant.

The same conditions apply when the relevant geography is a product line rather than a physical region. Research and development costs, including the start-up costs of new production lines and product management overhead, are fixed costs associated with specific product lines. Though IBM's total sales dwarf those of Intel, its research and development expenses are spread over a far greater range of products. In CPU development and production, which has its own particular technologies, Intel enjoys the benefits of economies of scale.

Network economies of scale are similar. Customers gain by being part of densely populated networks, but the benefits and the economies of scale extend only as far as the reach of the networks. Aetna's HMO has many more subscribers nationally than Oxford Health Plans. But because medical services are provided locally, what matters is share in a local market. In the New York metropolitan region, Oxford has more patients and more doctors enrolled than Aetna. Its 60 percent share of doctors makes it more appealing to new patients than Aetna's 20 percent share. The fact that Aetna also has 20 percent in Chicago, Los Angeles, Dallas, or even Philadelphia is irrelevant. The appropriate measure of economies of scale is comparative fixed costs within the relevant network.

There are only a few industries in which economies of scale coincide with global size. The connected markets for operating systems and CPUs is one example; Microsoft and Intel are the beneficiaries of global geographic economies of scale. The commercial airframe industry, now shared between Boeing and Airbus, is another. However, despite some other interests, each of these four companies concentrates on a single product line and hence on local product space economies of scale. General Electric, the most successful conglomerate, has always focused on its relative share within the particular markets in which it competes, not on its overall size.

Third, growth of a market is generally the enemy of competitive advantages based on economies of scale, not the friend. The strength of this advantage is directly related to the importance of fixed costs. As a market grows, fixed costs, by definition, remain constant. Variable costs, on the other hand, increase at least as fast as the market itself. The inevitable result is that fixed costs decline as a proportion of total cost.

This reduces the advantages provided by greater incumbent scale. Consider two companies, an incumbent and an entrant, competing in a market in which fixed costs are \$100,000 per year. If the entrant has sales of \$500,000 and the incumbent \$2,500,000, then fixed costs consume 20 percent of the entrant's revenue versus 4 percent of the incumbent's, a gap of 16 percent. Now the market doubles in size, and each company doubles as well. The gap in fixed cost as a percentage of sales declines to 8 percent. At a level ten times the original, the gap drops to 1.6 percent. See table 3.1.

Moreover, growth in the market lowers the hurdle an entrant must clear in order to become viably competitive. Let us assume that the entrant can compete with the incumbent if the economies of scale advantage is no more than 2 percent against it. With fixed costs at \$100,000 per year, the gap drops to that level if the entrant has sales of \$5 million. So if the size of the market were \$25 million, the entrant would need to capture a 20 percent share; in a market of \$100 million, it would only need a 5 percent share, clearly a much lower hurdle. Even if the incumbent were the only other firm in the industry and thus had sales of \$95 million, the entrant would still face less than a 2 percent competitive gap.

There are some highly visible instances of how economies of scale advantages have dwindled as markets have become international and thus massive. The global market for automobiles is so large that many competitors have reached a size, even with a small percentage of the total, at which they are no longer burdened by an economies of scale disadvantage. For very large potential markets like Internet services and online sales, the relative importance of fixed costs are unlikely to be significant. If new entrants can capture a share sufficient to support the required infrastructure, then established companies like Amazon will find it difficult to keep them out.

TABLE 3.1

	Entrant	Incumbent	Incumbent's Difference
Original market size			
Sales	\$500,000	\$2,500,000	\$2,000,000
Fixed costs (FC)	\$100,000	\$100,000	—
FC as % of sales	20%	4%	16% lower
Two times original market size			
Sales	\$1,000,000	\$5,000,000	\$4,000,000
Fixed costs (FC)	\$100,000	\$100,000	—
FC as % of sales	10%	2%	8% lower
Ten times original market size			
Sales	\$5,000,000	\$25,000,000	\$20,000,000
Fixed costs (FC)	\$100,000	\$100,000	—
FC as % of sales	2%	0.4%	1.6% lower

Although it may seem counterintuitive, most competitive advantages based on economies of scale are found in local and niche markets, where either geographical or product spaces are limited and fixed costs remain proportionately substantial.

The postderegulation telecommunications industry is a good example of the importance of local economies of scale. The old-technology local exchange carriers, whose markets are not large enough for a second or third company to reach viable scale, have fared much better in terms of profitability than the national long-distance and cellular carriers like AT&T, MCI-WorldCom, and Sprint.

STRATEGY AND COMPETITIVE ADVANTAGE THROUGH SUPPLY OR DEMAND

Prescriptions for strategy in any particular market depend on the existence and types of competitive advantages that prevail in it.

The first and simplest case is where there are no competitive advantages in the market. There is nothing that fundamentally distinguishes an existing firm from actual and potential rivals, and the economic playing

field is level. History and logic both confirm how difficult it is for a single firm to shift the basic economic structure of such a market significantly for its benefit.

A firm in an industry with no competitive advantages basically should forget visionary strategic dreams and concentrate on running itself as effectively as it can. What matters in these circumstances are efficiencies in managing costs, in product development, in marketing, in pricing to specific customer segments, in financing, and in everything else it does. If it can operate more effectively than its competitors, it will succeed.

Operational effectiveness can make one company much more profitable than its rivals even in an industry with no competitive advantages, where everyone has basically equal access to customers, resources, technology, and scale of production. In the last chapter of the book, we document for a range of industries just how large and important these differences are. Firms that are operationally effective, however, do tend to focus on a single business and on their own internal performance.

In competitive situations where a company enjoys advantages related to proprietary technologies and customer captivity, its strategy should be to both exploit and reinforce them where they can.

Exploitation can take several forms. A company with captive customers can charge more than the competition does. If the advantages stem from lower costs, it can strike a balance between underpricing competitors to increase sales and charging the same to keep the full benefit of the cost advantage. So long as the firm is either alone in the market or surrounded by a myriad of smaller and weaker competitors, it can determine the appropriate price level by trial and error. It needs to monitor its steps to see which price levels and other marketing choices provide the best return, but it does not have to worry explicitly about the reactions of particular competitors.

In fact, the process of exploitation in these cases is largely a matter of operational effectiveness. Strategies only become complicated where a small number of powerful firms enjoy competitive advantages in common. Much of the rest of this book concentrates on particular cases in which strategic interactions among the few are critical.

To reinforce its competitive advantages, a company first has to identify their sources and then to intensify the economic forces at work. If the source is cost advantages stemming from proprietary technologies, the company wants to improve them continually and to produce a successive wave of patentable innovations to preserve and extend existing advantages. The practice here is again a matter of organizational effectiveness, including making sure that investments in research and development are productive.

If the source is customer captivity, the company wants to encourage habit formation in new customers, increase switching costs, and make the search for alternatives more complicated and difficult. For expensive items, it wants to make purchases more frequent and to spread payments out over time, to ensnare the customer in an ongoing relationship that is easier to continue than to replace.

The automobile companies, facing lengthening intervals between car purchases, mastered the techniques long ago. In the late 1950s and early 1960s, they began to use highly visible annual style changes to encourage more frequent purchases. They also began accepting trade-ins and monthly payments to ease the financial burden. More recently, leasing programs have been tailored to accomplish the same thing, with customers offered new cars before the old leases have expired.

Customer loyalty programs—frequent-flier miles, affinity credit cards, and other reward plans—have the same goal, keeping captive customers in the corral. The famous Gillette strategy of selling the razor cheaply and then making money from the regular purchase of blades has been copied by other industries. Magazine subscription campaigns that offer inexpensive initial subscriptions to profit from higher-priced renewals are a variant. The common element in all these approaches is that they encourage repeated, virtually automatic and nonreflective purchases that discourage the customer from a careful consideration of alternatives.

Amplifying switching costs is usually a matter of extending and deepening the range of services offered. Microsoft has regularly added features to its basic Windows operating system, making the task of switching to other systems and mastering their intricacies more onerous. As banks move beyond simple check processing and ATM withdrawals to automatic bill payment, preestablished access to lines of credit, direct salary deposit,

and other routine functions, customers become more reluctant to leave for another bank, even if it offers superior terms on some products.

The same tactic of providing more integration of multiple features raises search costs. Comparison shopping is more difficult if the alternatives are equally complicated but not exactly comparable. Few people spend their leisure time analyzing the pricing and service plans of wireless telephone companies. Also, as the importance and added value of products and services increases, so does the risk of getting a poor outcome from an alternative provider.

The same potentially poor results also raise the cost of sampling; something might go seriously wrong during the trial period. This problem extends beyond the more obvious situations like finding a new cardiologist or a residential insurance carrier. Philip Morris spent a fortune promoting the image of the Marlboro smoker. If a Marlboro Man's standing in society seems to depend on the brand of cigarette he chooses, the risk of a switch to Camels may be more than he is willing to assume. Complexity, high added value, and significance are all components of high search costs.

STRATEGY AND ECONOMIES OF SCALE

Competitive advantages based on economies of scale are in a class by themselves for two reasons.

First, as we have mentioned, they tend to be far longer lived than the two other types, and therefore more valuable. Coca-Cola is one of the most valuable brands in the world not because it is so widely recognized, but because of customer captivity and, more importantly, local economies of scale in advertising and distribution. Due to these competitive advantages, Coca-Cola has an edge in acquiring new customers. It can appeal to them (advertising) and serve them (distribution) at a much lower unit cost than can its smaller competitors. But these advantages are particular to specific geographic regions. Despite its worldwide recognition, Coca-Cola is not the dominant soft drink everywhere. In places like Korea, where a local company allied with Pepsi is currently on top, Coca-Cola is not the most valuable brand. In Venezuela, Coca-Cola suddenly displaced Pepsi only because the leading local bottler suddenly shifted allegiance.

Second, advantages based on economies of scale are vulnerable to gradual erosion and thus need to be defended vigorously. Once a competitor increases the size of its operations, it shrinks the unit cost gap between it and the leader. Each step a competitor takes toward closing the gap makes the next step easier, because its margins and therefore its resources are improving as its costs decline. At some point the entire advantage may be gone or even turn negative for the incumbent, if the entrant has become the larger firm.

These advantages can be destroyed, but they can also be created. In a market with significant fixed costs but currently served by many small competitors, an individual firm has an opportunity to acquire a dominant share. If there is also a degree of customer captivity, that dominant share will be defensible.

The best course is to establish dominance in a local market, and then expand outward from it. This is the path Sam Walton initially pursued as he established dominance in small-town Arkansas and then from that base expanded nationally. It also describes Microsoft's extension of its product space from operating systems to office applications. Even where incumbent competitors have dominant positions, lack of vigilance on their part may present openings for successful encroachment.

Wal-Mart won out over Kmart and most of its other discount store competitors by extending its economies of scale strategy into what had been the enemy's territory. Microsoft did the same to Lotus and WordPerfect in applications software. Economies of scale, especially in local markets, are the key to creating sustainable competitive advantages.

In pursuit of these opportunities, it is important to remember that size and rapid growth of the target market are liabilities for incumbents, not assets. Big markets will support many competitors, even when there are substantial fixed costs. Markets grow rapidly because they attract many new customers, who are by definition noncaptive. They may provide a base of viable scale for new entrants.

The appropriate strategy for both incumbents and entrants is to identify niche markets, understanding that not all niches are equally attractive. An attractive niche must be characterized by customer captivity, small size relative to the level of fixed costs, and the absence of vigilant, dominant competitors. Ideally, it will

also be readily extendable at the edges. The key is to “think local.”

The other side of this coin is the need to defend those local markets where a firm enjoys competitive advantages by responding aggressively to all competitive initiatives however they arrive.

The incumbent can also take the first step and not wait to counterpunch. Anything it does to increase fixed costs, like advertising heavily, will present smaller competitors with the nasty alternatives of matching the expenses and hurting their margins or not matching and losing the competition for new customers. Production and product features that require capital expenditures, like building centralized facilities to provide automated processing, will also make life more difficult for smaller competitors. Accelerating product development cycles, and thereby upping the costs of research and development, is another possibility. Everything that efficiently shifts costs from variable to fixed will reinforce advantages from economies of scale.

Ill-conceived growth plans, in contrast, can do just the opposite. Grow *or* die corporate imperatives too often lead to grow *and* die results. The fates of Kmart, Kodak, RCA, Westinghouse, CBS, the original Bank of America, and AT&T, all once lustrous corporate names, are evidence of the perils of unfocused growth strategies. Instead of defending the markets in which they were dominant and profitable, they spent copiously in markets where they were newcomers battling powerful incumbents.

In contrast, companies that have stayed within their areas of fundamental competitive advantage, like Kimberly-Clark, Walgreen, Colgate-Palmolive, and Best Buy, have survived and generally flourished. Competitive advantages are invariably market-specific. They do not travel to meet the aspirations of growth-obsessed CEOs.

COMPETITIVE ADVANTAGE, STRATEGY FORMULATION, AND LOCAL OPPORTUNITIES

In the next chapter, we will provide a detailed procedure for assessing competitive advantages. The method needs to be used in the proper context. The first step in formulating strategy is to take an inventory of a firm’s current and potential markets from a competitive advantage point of view.

In some markets, where there are no competitive advantages and none likely ever to emerge, the only approach is to operate efficiently. In another group of markets, where vigilant incumbents enjoy competitive advantages, potential entrants would do well to back off, and nondominant incumbents to depart. In still other markets, a firm will enjoy current competitive advantages. In these cases, its strategy should be to manage and defend them.

Finally, there will be markets in which a company can establish competitive advantages by achieving defensible economies of scale. Most of these will be local, either geographically or in product space. They are the proper focus of strategic analysis. Many companies, if they look carefully, will find possibilities for dominance in some of their markets, where they can earn above normal returns on investment. Unfortunately, these local opportunities are too often disregarded in the pursuit of ill-advised growth associated with global strategic approaches.

CHAPTER 4

Assessing Competitive Advantages

THREE STEPS

Because the concept of competitive advantage lies at the core of business strategy, it is essential to determine whether a company benefits from a competitive advantage, and if it does, to identify the sources of that advantage.

There are three basic steps to doing such an assessment:

1. 1. Identify the competitive landscape in which the firm operates. Which markets is it really in? Who are its competitors in each one?
2. 2. Test for the existence of competitive advantages in each market. Do incumbent firms maintain stable market shares? Are they exceptionally profitable over a substantial period?
3. 3. Identify the likely nature of any competitive advantage that may exist. Do the incumbents have proprietary technologies or captive customers? Are there economies of scale or regulatory hurdles from which they benefit?

The first and most important step is to develop an industry map that shows the structure of competition in the relevant markets. This map will identify the market segments that make up the industry as a whole and list the leading competitors within each one. Deciding where one segment ends and another begins is not always obvious. However, if the same company names show up in adjacent market segments, then these segments can usually be treated as a single market. Mapping an industry helps a company see where it fits in the larger picture and who its competitors are, even if the segment breakdowns are not always precise.

The second step is to determine for each market segment whether it is protected by barriers to entry, or in other terms, whether some incumbent firms enjoy competitive advantages. There are two telltale signs of the existence of barriers to entry/competitive advantages:

- *Stability of market share among firms.* If companies regularly capture market share from each other, it is unlikely that any of them enjoys a position protected by competitive advantages. In contrast, if each firm can defend its share over time, then competitive advantages may be protecting their individual market positions.*

Stability in the relative market positions of firms is a related issue. The key indicator of this is the history of the dominant firm in the segment. If the leading company has maintained its position over a period of many years, that fact strongly suggests the existence of competitive advantages. If, on the other hand, it is impossible to single out a dominant firm, or if the firm at the top changes regularly, then no single company is likely to enjoy sustainable competitive advantages.

The history of entry and exit in a market segment provides another clue. The more movement in and out, the more turbulent the ranking of the companies that remain, and the longer the list of competitors, the less likely it is that there are barriers and competitive advantages. Where the list of names is short and stable, the chances are good that the incumbents are protected by barriers and benefit from competitive advantages.

- *Profitability of firms within the segment.* In a market without competitive advantages, entry should eliminate returns above a firm's cost of capital. If the companies in a market maintain returns on capital that are substantially above what they have to pay to attract capital, the chances are strong that they benefit from competitive advantages/ barriers to entry. These sustainable excess returns may be restricted to a single dominant firm, or they may be shared by a limited number of companies who all enjoy competitive advantages over smaller firms and potential entrants.

There are a number of ways to measure profitability. The approaches that permit comparisons across industries calculate returns either on equity or on invested capital.

After-tax returns on invested capital averaging more than 15 to 25 percent—which would equate to 23 to 38 percent pretax return with tax rates of 35 percent—over a decade or more are clear evidence of the presence of competitive advantages. A return on capital in the range of 6–8 percent after tax

generally indicates their absence.

There is one major difficulty in measuring returns on investment in any particular market. Corporations report their results for the company as a whole; they may include breakdowns for highly aggregated industry segments and for continental-sized geographic regions. But the markets where competitive advantages are likely to exist will often be local, narrowly bounded either in geography or product space. A typical company of even medium size may benefit from barriers to entry in several such markets, but stellar results there will be diluted in the financial reports by being combined with returns from other, less profitable operations. Identifying historical profitability for particular markets often requires extrapolation. The best way is to look at the reported profits of “pure play” companies, whose operations are narrowly focused within these markets. The resulting profitability calculations for focused segments are critical to any strategy for exploiting competitive advantages and minimizing the impact of competitive disadvantages.

When the analysis of market share stability and profitability are consistent with one another, the case for the existence of competitive advantage is robust. For example, Enron reported only a 6 percent return on capital for the year 2000—its most profitable year—and it needed the help of accounting manipulations to do even that. This result by itself should have cast doubt on its claim to competitive advantages in trading markets for new commodities like broadband and old ones like energy. The history of the trading operations of established Wall Street firms, in which changing relative market positions are the rule, makes the case against competitive advantage for Enron even stronger.

If market share stability and profitability indicate the existence of competitive advantages, the third step is to identify the likely source of these advantages. Do the dominant firms in this industry benefit from proprietary technologies or other cost advantages? Do they have captive customers, thanks to consumer habit formation, switching costs, or search costs? Are there significant economies of scale in the firm’s operations, combined with at least some degree of customer captivity? Or, if none of these conditions seems present, do the incumbent firms profit from government intervention, such as licenses, subsidies, regulations, or some other special dispensation?

Identifying the likely source of a firm’s competitive advantage serves as a check to confirm the findings from the data on market share stability and profitability. Even when market share is stable and profitability is high, a close look at the business may fail to spot any clearly identifiable cost, customer captivity, or economies of scale advantages.

The likely explanation for this discrepancy is either that the market share and profitability figures are temporary, or that they are the consequence of good management—operational effectiveness—that can be emulated by any sufficiently focused entrant. Identifying the sources of competitive advantages should help predict their likely sustainability, a necessary step for both incumbents and potential entrants when formulating their strategies.

The three-step procedure for assessing competitive advantage is depicted in figure 4.1.

THE STEPS IN PRACTICE: A LOOK AT THE FUTURE OF APPLE COMPUTER

Now let’s use this procedure to look at Apple Computer. We will review its past and forecast its likely future. In its history, Apple has chosen strategies that have involved it in almost every important segment of the personal computer (PC) industry. The visionaries at Apple, first Steve Jobs, then John Sculley, then Jobs in his second tenure, have at times sought to revolutionize not simply the PC industry itself, including most of the hardware and software segments, but also the related areas of personal communications and consumer electronics.

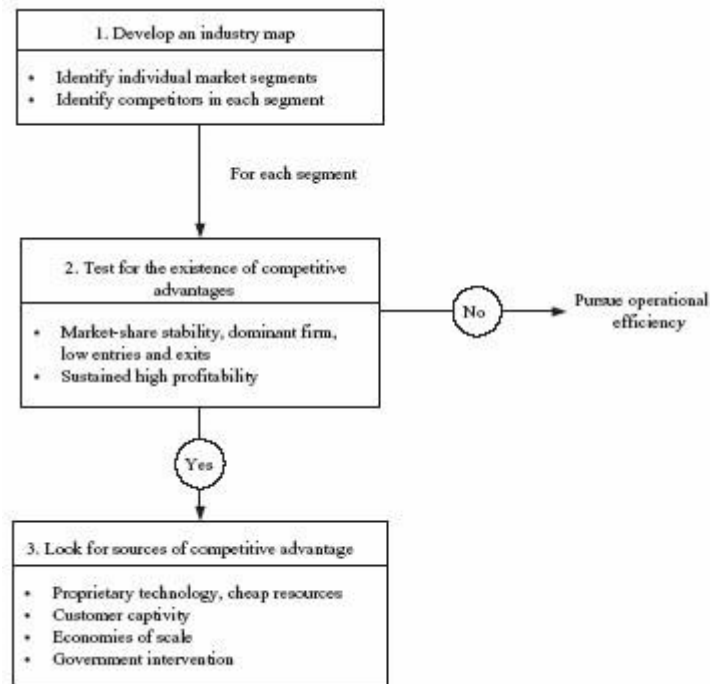


FIGURE 4.1
Assessing competitive advantage: three steps

Apple has consciously attempted to bring an inclusive vision to this collection of often unrelated segments. The hope was to reap the benefits of synergies across chip and component development, hardware design, manufacturing, software features, and even communications protocols. John Sculley, describing Apple’s personal digital assistant in 1992, said of the company “we really don’t invent new products, but the best ones are there already, only invisible, waiting to be discovered.”

Given Apple’s checkered economic history, the initial presumption has to be that its aspirations have not coincided with the economic realities of the markets in which it has competed. Since Apple has never been a particularly efficient operator, the burden has fallen almost entirely on the strategic choices it has made, its ability to benefit from competitive advantages. Apple is not alone in this position. An argument of this book is that large and diffuse, as opposed to local and specific, strategic visions are almost always misguided.

DEVELOPING AN INDUSTRY MAP: APPLE IN THE PERSONAL COMPUTER INDUSTRY

Like maps in an atlas, industry maps can be drawn at various levels of detail. Our initial effort divides the PC industry into only six segments, as shown in figure 4.2. PCs are built from components, of which the central processing unit (CPU), the chip at the heart of every personal computer, is the most important. The leading CPU manufacturers are Intel, Motorola, IBM, and AMD. Other components include keyboards, power supplies, graphic interface boards, disk storage devices, memory chips, monitors, speakers, and scores of additional parts.

Personal computer manufacturers like Dell, IBM, HP, Compaq (which merged with HP in 2002), and many others assemble these components into PC systems. They also incorporate operating system software, from companies such as Microsoft, and may add some applications software packages, such as word processors, spreadsheets, Internet browsers, financial management programs, graphics programs, security, and more. The applications programs are more frequently sold directly to users. Some of these applications programs are produced by the operating system software companies; some come from specialized providers

like Adobe and Intuit.

Finally, PC owners today almost invariably connect their machines to the Internet through network service providers, like AOL, Earthlink, MSN, Time Warner, or the regional telephone companies that allow them to communicate with other users. Yahoo, Google, and other Internet sites are also in the network segment, broadly conceived.



FIGURE 4.2
Map of the personal computer industry (first version)

An initial industry map almost invariably represents a compromise between the virtues of simplicity and tractability, on the one hand, and the requirements of comprehensiveness, on the other. Too much detail risks overwhelming the map with too many segments; too little detail risks missing important distinctions.

The appropriate amount of precision depends on the specific case, and also on what we discover in the initial analysis. The Other Components segment, for example, could be broken down into a number of separate units—printers, modems, disk drives, monitors, and so on. The Applications Software segment should ultimately also be subdivided into more niches, like database management, desktop publishing, photographic and motion picture editing, and more.

Our bias for starting simple also influences our treatment of the PC Manufacturing segment, where we have deliberately excluded game consoles, workstations, handheld computers, and other products that all compete at some level with PCs. Finer-grained divisions become necessary only if we think, after our initial foray, that Apple's future may depend significantly on the structure of competition in these particular markets. Starting with six segments allows us to keep things simple unless there is a need to make them more complex.

We next list the names of the firms that operate in each segment of the map, putting the dominant company, measured by market share, at the top (figure 4.3).

For microprocessors (CPU chips), Intel is clearly the leader, followed by AMD, IBM, and Motorola, which was Apple's primary supplier at the introduction of the Macintosh, and later shared the business with IBM. The hardware (PC) manufacturers include Dell, HP, Compaq, IBM, Gateway, Toshiba, and of course, Apple.

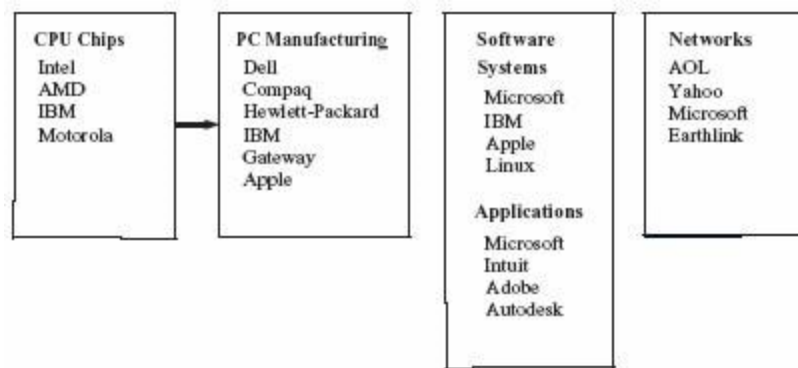


FIGURE 4.3
Map of the PC industry (with names)

Even at this early stage of the analysis, two obvious and important facts emerge. First, there is almost no overlap in names between the two segments, meaning that each has to be analyzed separately. (IBM is in both segments, but it primarily uses Intel CPUs in its own PCs.) Second, while there are only four companies in the microprocessor segment, the list of PC manufacturers is both long and incomplete, and the identity of the dominant firm is not obvious.

The Systems and Applications Software segment list is headed by Microsoft; other players are Apple, IBM (with its OS/2 system, at one time a potential competitor), and Linux, all much smaller. Two firms, IBM and Apple, are also PC manufacturers, but Microsoft makes neither chips nor PC “boxes.” In cases where there is some overlap in names, the segments need to be kept distinct and treated separately so long as the dominant firms differ across segments.

Microsoft is also the dominant firm in the Applications Software segment; its office productivity suite of programs and its browser lead their categories in current sales and size of the installed base of users. Other companies with visibility, including Intuit in financial software, Adobe in graphics and typography, Autodesk in architectural and design software, do not appear elsewhere. So there is a decision to make on whether to consolidate the segments.

It is usually preferable to begin by keeping segments distinct and then look for connections across segments. Amalgamation tends to conceal strategic issues that separate treatment may reveal. For the sake of simplicity, in this example we will use Microsoft’s dominance in both system and applications software to justify combining the two segments into one software group, with the intention of revisiting the decision when we are further along in the analysis.

AOL is the dominant firm in the Networks segment. The one company whose name appears here and elsewhere is Microsoft, whose MSN has become a major competitor in the network business. But because AOL operates only in this segment, and Apple has virtually no presence, we will treat it as distinct. PC wholesaling and retailing is also a distinct segment, even though Apple does run around eighty retail outlets. Because it is not relevant to the company’s competitive position, we are going to ignore it altogether.

We have also dropped the Other Components segment from this version of the map. Given the diversity of these components—printers, disk drives, memory chips, keyboards, and all the others—and the fact that each subsegment has many competitors with virtually no crossover of names, each would need to be analyzed separately. All these segments look much like the PC Manufacturing sector—a long and unstable list of competitors with no firm clearly dominant. Industries with these characteristics tend to have similar strategic implications, both in themselves and for segments upstream and downstream from them. So we can defer treatment of Other Components until we have looked closely at PC Manufacturing to see whether more detailed examination is necessary to understand Apple’s strategic choices. In this case, since Apple has not tended to compete significantly in these component segments, the chances are that we will continue to ignore them.

The three segments that we cannot ignore are CPUs, Software, and PC Manufacturing. For each of these, we need to know whether competitive advantages exist, and, if they do, what they are and whether it is Apple or its competitors who benefit from them.

TESTING FOR AND IDENTIFYING COMPETITIVE ADVANTAGES: THE CHIP SEGMENT

In the CPU industry, market share has been quite stable since the early 1980s, after the introduction of IBM’s PC, around which much of the industry standardized. Intel has been the dominant supplier for two decades, through many generations of chips. Other powerful companies like IBM, NEC, and Texas Instruments have tried, over time, to gain entry but have not been particularly successful. Motorola was a major competitor in the early 1980s but since then has fallen far behind Intel. Intel’s share has held fairly stable since then, hovering around 90 percent. At times, AMD has made some inroads, but Intel has always rebounded. Share stability like this is evidence of the existence of major barriers to entry and competitive advantages.

The history of Intel’s profitability tells the same story. Except for a brief period in the mid 1980s, before it quit the memory chip business, Intel’s average returns on capital have exceeded 30 percent after tax. The

ratio of its market value to the estimated replacement cost of its net assets has continually exceeded 3 to 1; each dollar invested by Intel has created three or more dollars in shareholder value. The absence of successful entry and Intel's continued dominance in the CPU chip market is clearly a sign of a strong incumbent competitive advantage. The sources of Intel's advantage—captive customers, economies of scale, and some patent protection—are clear; we discussed them in chapters 2 and 3.

Unfortunately for Apple, it has been on the losing side in this competition. Its alliance has been with Motorola for the first generation of Macintosh CPUs, and with Motorola and IBM for the PowerPC chips. The introduction of the Macintosh, in 1984, with its graphical user interface based on a Motorola chip, secured for Apple the lead in everything graphic that might be done on a personal computer. But Intel powered ahead, and its later generation of CPUs have been capable of running Microsoft's Windows software, in most ways indistinguishable from the Macintosh interface.

Given Intel's economies of scale advantages, it has been able to outdistance Motorola in adding processing power to the CPU. Apple has been left having to play catch-up, sometimes missing an upgrade cycle. Though Motorola and Apple have won praise for the graphic and multimedia capabilities of their chip—operating system integration, the alliance has put Apple at a competitive disadvantage because each generation of CPU chips requires about \$1 billion in research and development costs. Intel sells more than 100 million chips per generation, making their R&D cost per chip around \$10. The Apple-Motorola-IBM alliance has sales of 10 million chips in a generation, putting their R&D cost at around \$100 per chip. They are faced with the choice of severely cutting their R&D spending, which would virtually guarantee failure in the race for new technology, or shouldering the much higher cost per chip. In either case, they are playing on a field tilted against them, and will not fare well.

TESTING FOR AND IDENTIFYING COMPETITIVE ADVANTAGES: THE SOFTWARE SEGMENT

Microsoft's dominance of the software segment is even more pronounced than Intel's position in microprocessors. IBM's open architecture for the PC allowed many other companies to become manufacturers, but the operating system was standardized on Microsoft's MS-DOS. Since then, Microsoft has made the most of this privileged position, both by defending its core turf and by extending its franchise. It smothered IBM's effort to take back some of the operating system market with OS/2. It overcame Apple's initial lead in graphical user interface by developing Windows to succeed MS-DOS. It fought off potential threats to the primacy of the operating system by taking the browser market away from Netscape, and it continues to keep Linux and the open source movement a marginal factor in the desktop market, although Linux has gained more acceptance as the operating system for workstations and servers.

At the same time, Microsoft has become a leading applications provider in word processing, spreadsheet, presentation, and financial programs for the PC. Versions of the Windows operating system extend downward to personal digital assistants and mobile telephones and upward to larger server computers. It has not been able to dominate the game console business, where it is one of the three leading console manufacturers (and not yet a profitable one), or cable television systems, set-top boxes, and other markets more remote from its central strength in the desktop operating system.

In the operating systems market, its share has remained above 80 percent, often above 90 percent, for two decades. It used this dominance, and the profitability that stemmed from it, to push its way to the top of the office suite and browser businesses. Its leverage from the ownership of the operating software code insured early compatibility of applications programs, and its position as supplier of the operating system assured that PC manufacturers needed Microsoft much more than it needed any of them. Sometimes its aggressive behavior brought out the regulators, but two major antitrust cases in the United States left Microsoft atop its markets, hardly scathed by the experience. The European Union may do more damage.

It is a criminal understatement to say that Microsoft has been profitable. From its IPO in 1986 through 2000, Microsoft averaged an after-tax return on capital of 29 percent per year. In 2001 and 2002, the figure dropped to 15 percent, still high although not so stratospheric. Yet these figures, impressive as they are, do not begin to reveal the extraordinary profitability of Microsoft's core business. In 2002, the company's

capital—its total debt and equity—totaled \$52 billion. Since Microsoft had no debt, all of that figure represented equity.

The equity was invested in two businesses. The first business was money, cash in the bank or some close equivalent. In 2002, its average cash balance was \$35 billion, on which it earned roughly \$1.2 billion after tax, or around 3.5 percent. The rest of its after-tax earnings, around \$6.6 billion, came from its software businesses, on an investment of \$13.5 billion (debt plus equity minus cash), or a return on investment of 49 percent.* Only by blending the returns of its software operations with the returns on its mountain of cash could Microsoft report an after-tax return on capital of 15 percent. Calculated in this manner, from 1986 through 2000, Microsoft's software business averaged a return on capital of around 100 percent, after tax.* See table 4.1.

It is abundantly clear that Microsoft enjoys a competitive advantage. The sources of that advantage are not difficult to identify. It isn't technology. Talented computer programmers have been abundant for decades, and even though Microsoft does have copyright protection for its source code, nothing prevents other software companies from turning out comparable or superior products with their own software. Many professionals have been scornful of Microsoft's offerings for years.

The company does have captive customers, partially because much of the software they own is not compatible with other operating systems, making change expensive and time-consuming. Its economies of scale are vast, since writing standard programs is almost entirely a fixed-cost business. With its enormous customer base, Microsoft has been able to throw years of program writing into any project it thinks important and still end up spending less per unit sold than its competitors.

Finally, there is the network effect, the fact that the value of the product to the user depends on how many other people also use it. A competitor to Microsoft in both the operating system and applications software businesses is at a huge disadvantage, no matter the quality of its offerings.

TABLE 4.1

Microsoft's returns on investment, 2002 (\$ billion)

Cash at end of year	\$ 38.6
Debt	\$ 0
Equity	\$ 52.2
Capital—cash	\$ 13.6
Net income	\$ 7.8
Earnings on cash	\$ 1.2
Earnings on software	\$ 6.6
Total return on capital	15.0%
Return on capital invested in software	48.8%

Apple has been competing against Microsoft since IBM introduced the PC in 1981. At times it has had a superior operating system by almost any independent measure, yet it has never managed to gain much more than around 13 percent of the market, and that figure has been considerably lower since Microsoft introduced a workable version of Windows. The situation in the software segment parallels that in microprocessors, with Apple and its allies losing out to Microsoft and Intel, or “the Wintel platform,” as the tight relationship

between Microsoft and Intel has been called. Apple's strategy of integration has been no match for the market-specific competitive advantages that its rivals enjoy.

TESTING FOR AND IDENTIFYING COMPETITIVE ADVANTAGES: THE PC MANUFACTURING SEGMENT

The PC manufacturing segment of the industry looks nothing like the microprocessor or software segments. The dominant firm has changed over time; new companies have entered and existing ones exited; and the share of the market held by the top twenty firms has seldom exceeded 60 percent of the total. Even among the largest firms, market share changes from year to year have been substantial. Data for the years 1990–98 reveals how much market share varied from year to year, and how far the top firms in 1990 had fallen by 1998.

The basic share stability calculation is shown in table 4.2. Columns 1 and 2 are simply the share each company held in the U.S. market in 1990 and 1998. In columns 3 and 4, the combined share of the seven companies has been set to 100 percent, and each company's portion of that total has been calculated. Finally, column 5 reports the change between 1990 and 1998 in normalized shares on an absolute basis (i.e., column 4 minus column 3, leaving negative signs out). The average gain or loss for each firm over the entire period was 15 percentage points, a marked contrast with the less than 2 percentage point figures for software and CPU chips.

TABLE 4.2
Calculating market-share stability

	U.S. Market Share		Normalized Market Share		Absolute Change
	1990	1998	1990	1998	
Apple	10.9%	4.6%	29.1%	7.1%	22.1%
Compaq	4.5%	16.7%	12.0%	25.7%	13.6%
Dell	1.0%	13.2%	2.7%	20.3%	17.6%
Gateway	1.0%	8.4%	2.7%	12.9%	10.2%
HP	0.0%	7.8%	0.0%	12.0%	12.0%
IBM	16.1%	8.2%	43.0%	12.6%	30.5%
Packard Bell	3.9%	6.2%	10.4%	9.5%	0.9%
These seven companies combined	37.4%	65.1%	100.0%	100.0%	15.3%

As a first rule of thumb, if you can't count the top firms in an industry on the fingers of one hand, the chances are good that there are no barriers to entry. The rapid change in market share in table 4.2 confirms the rule. As a second rule of thumb, if over a five-to eight-year period, the average absolute share change exceeds 5 percentage points, there are no barriers to entry; if the share change is 2 percentage points or less, the barriers are formidable.

Profitability for firms in this segment has been uneven. Some of the leading companies, especially IBM and Hewlett-Packard, are so diversified that it is difficult to get a good look at how much they earn, and on how much in dedicated assets, within the PC business. Apple, Dell, Compaq, and Gateway, however, do allow a more direct view of discrete PC profitability.

Within a given industry, there are two primary approaches to gauge profitability. One uses income as a percentage of revenue, the other income as a percentage of the resources employed in the business. Net income figures are readily available, but they include items such as interest paid (or earned), taxes paid (or refunded), and extraordinary items like earnings or losses from unconsolidated investments, none of which reflect the actual operations of the business. So our preference is to look at operating income (earnings before interest and taxes, or EBIT), which omits interest, taxes, and some other extraneous charges (or additions).

We should not ignore what the companies report as extraordinary gains or charges, like the writing down of inventory or other assets, because these reflect operating business decisions even though they may accumulate unreported until some event forces an acknowledgment that something significant has occurred. To incorporate these sporadic entries in the income statement, wherever possible we take the average of “extraordinary items” for the current and four prior years, and add or subtract it from operating earnings, labeling the result “adjusted operating earnings.” We divide this figure by revenue to produce the “adjusted operating margin.”

For the four PC manufacturers on which we can get reasonably relevant numbers, adjusted operating margins for the ten years 1991–2000 averaged 5.8 percent (table 4.3). Net income margins were lower, largely due to taxes, although Apple had some nonoperating income that resulted in the two margin figures being the same.

Dell’s operating margins, at 8 percent for the period, were the highest; Apple’s, at 2.2 percent, the lowest. Among the undiversified PC makers, there is relatively little dispersion, certainly nothing like the gap between Intel and its smaller competitors. This clustering is itself a sign that there are no strong competitive advantages in the industry. Also, these operating margins are modest. For Intel, the comparable figure for this same period averages almost 32 percent. (See the appendix on methods for measuring returns.)

When we compare the four companies using different ways of measuring returns on resources, several findings stand out (table 4.4). First, Dell and Gateway were much more profitable than Apple and Compaq, no matter which measure is chosen. Second, the pretax ROIC for Dell and, to a lesser extent, Gateway are suspiciously high. The explanation for these extraordinary results is that Dell’s business model, mimicked by Gateway, requires very little invested capital to support large amounts of revenue and operating income. In Dell’s fiscal 1998 (ending February 1, 1998), for example, the company had higher current liabilities than current assets, once surplus cash is excluded (table 4.5). Its build-to-order approach allowed it to run a very tight ship. Its revenue for the year was eight times the value of year-end receivables, fifty-three times the value of year-end inventory, and thirty-six times the value of year-end plant and equipment. Not only did Dell have negative working capital, it had more surplus cash on its balance sheet than the combined total of debt and equity. With negative invested capital, the return calculation is infinite (and only by omitting 1998 were we able to produce any figure for Dell in table 4.4).

TABLE 4.3

Adjusted operating and net income margins for four PC manufacturers, 1991–2000

	Adjusted Operating Margins	Net Income Margins
Apple	2.2%	2.2%
Compaq	6.5%	3.8%
Dell	8.0%	5.5%
Gateway	.6%	5.1%
Average	5.8%	4.1%

Part of the problem is due to the shortcomings of the measurement of assets under standard accounting procedures. Much of Dell’s investment is in intangibles—brand recognition, organizational capital, sales relationships, and trained personnel. None of the funds spent on developing these valuable attributes appears on a company’s balance sheet, leaving invested capital understated and returns on invested capital substantially overstated. Using returns on sales as a measure of operating efficiency, Dell and Gateway are not that different from Compaq (see table 4.3), and the difference is accounted for largely by Compaq’s greater spending on research and development.

TABLE 4.4

Return on resources measures for four PC manufacturers, 1991–2000

	Net Income/ Assets (ROA)	Adjusted Operating Income/ Assets (ROA Adjusted)	Net Income/ Equity (ROE)	Adjusted Operating Income/ Invested Capital (ROIC)
Apple	2.6%	3.2%	0.4%	24.5%
Compaq	6.5%	10.9%	10.1%	33.6%
Dell	13.0%	18.6%	34.3%	236.9%
Gateway	15.9%	20.3%	29.3%	71.3%
Average	9.5%	13.2%	18.5%	91.6%

TABLE 4.5

Dell's invested capital, FY 1998 (\$ million)

Total assets	\$	4,268
Cash and securities	\$	1,844
Cash at 1% of revenue	\$	123
Surplus cash	\$	1,721
Non-interest-bearing current liabilities	\$	2,697
Invested capital	\$	(150)

Even though the results for Apple and Compaq demonstrate decent returns on invested capital on average, there were years in which they lost money. And Gateway, whose returns for the decade look so strong, lost over a billion dollars in 2001 and \$300 million in 2002. Considering all the information, both market share stability and profitability, it seems likely that the PC industry was not protected by barriers to entry during this period and that if any competitive advantages existed, they were minimal. Dell's undeniable success should be attributed to operating efficiency, both the speed with which it assembled and shipped its machines out the door and the brilliant design of a business model that made such efficient use of its assets.

It is difficult to see what the sources of competitive advantage could have been. Customer captivity is low. Both individuals and institutions upgrading their systems shop for the best current tradeoff between features and value. The only exception is among Apple's devoted users, but these have been a dwindling share of the overall market for some time. There is no proprietary technology within the manufacturing segment. Again, except for Apple, all the major manufacturers are buying their components from the same set of suppliers. Economies of scale are also hard to spot, at least historically. Fixed costs have represented a small portion of total production. Manufacturing facilities are widely dispersed, indicating no advantages to large-sized plants.

Given its leadership, Dell may benefit from being able to spread its sales and marketing operations over a larger base, and perhaps it is able to customize machines more cheaply because of its size. But these advantages are not enormous. Even as Dell increased in size, its sales per employee did not continue to grow, nor did its lead over its competitors (figure 4.4).

If any competitive advantages did exist in the past, it is certain that Apple has not been a beneficiary. If competitive advantages emerge in the future, primarily because of economies of scale combined with some customer captivity, the likely winner will be Dell, not Apple. If Dell were to stumble or even fail because of some enormous strategic miscalculation, like being left behind after a revolutionary shift in technology, the chances of Apple being the beneficiary are miniscule. The PC manufacturing segment has not been the driving force in the industry, nor the place where most of the money has been earned. Since Apple has been on the wrong side of competitive advantages in both microprocessors and software, it is not realistic to think that it will be redeemed by its role as a manufacturer of boxes.

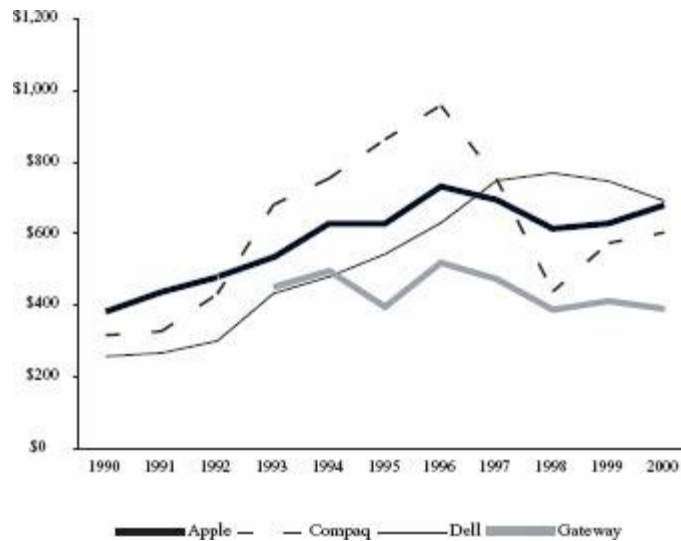


FIGURE 4.4
Sales per employee (\$000)

THE BIG PICTURE FOR APPLE

If Apple does not come out on top in any of the segments that make up the personal computer industry, perhaps it can thrive by making it easy for a user to integrate some crucial parts, not only of the PC industry proper, but of other elements in the digital universe. Apple was an early—premature—entrant into what has become the personal digital assistant (PDA) market, but its Newton was a flop. The handwriting recognition software was not up to the task and became the butt of comic strip jokes. Palm put the PDA business on its feet with its easy-to-use machines in the late 1990s, and when Microsoft produced a scaled-down version of Windows that could be crammed into handhelds, a number of manufacturers came to market with pocket PCs. Neither first-mover advantage nor ease of integration with a Macintosh had been able to lift the Newton.

Apple has been more successful with its portable digital music player, the iPod, praised for its ease of use and elegant design. Apple introduced the iPod in October 2001. Over 1 million units were sold within the first two years, and Apple continued to improve the product, making it more compact and increasing its capacity to hold music. When third-party developers wrote software allowing the iPod to be synchronized with Windows-based PCs, they helped iPod sales even as they undermined the synergistic appeal of the Macintosh-iPod connection. Sparked by the success of the iPod, other companies have introduced competing products, and the final chapters in the story have yet to be written.

Arguments for the advantages of synergy are generally suspect. If a firm in one market has a competitive advantage, it may be able to expand its reach by some well-chosen move into an adjacent area. But if it does not benefit from a competitive advantage in its core business, there is nothing it does that its competitors cannot match. Putting one and one together will not produce three, no matter how many times the magic word *synergy* is invoked. If ever there were an industry, broadly considered, in which this principle applies, it is the digital universe in which Apple works, where piracy—unauthorized duplication—is a constant threat. Apple and its Macintosh have been able to delight their dedicated users with superior design and easier compatibility between different pieces of hardware and software, but synergy on this scale has not provided Apple with enough leverage to overcome the disadvantages it faces by being on the wrong side of the competitive advantages divide in both CPUs and software.

Apple operates in one field—PC manufacturing—where it is arguably on an equal footing with its competition. It has linked this business to its positions in two other industries—CPU chips and software—where it operates at a significant competitive disadvantage. Thanks to these connections, Apple is like a champion swimmer who decides to compete with a large cement block attached to each ankle. No matter how

brilliant Steve Jobs is in running the company, the outcome of the race seems inevitable, and Apple does not look like the winner.

In our first pass through the PC industry, we ignored some segments that did not seem central to understanding the competitive landscape. But now a closer look may be warranted to discover whether Apple might benefit from some advantage in one of these other segments.

A CLOSER LOOK AT OTHER COMPONENTS

This segment of the PC industry, we said earlier, has had characteristics much like those of the PC Manufacturing segment: many competitors with none dominant, no discernable competitive advantages, and no benefits to integration. There may be a few exceptions to this generalization. Hewlett-Packard has dominated the printer business for both laser and inkjet printers for some years, with up to half the overall market and even more in the black-and-white laser area. But it is hard to imagine that anyone buys a Hewlett-Packard PC because they want to use the same company's laser printer. Compatibility makes the printers popular, and compatibility eliminates any benefit that owning a printer and PC from the same manufacturer might provide. The same holds true for monitors, disk drives, keyboards, and most of the other peripherals. If some peripheral manufacturers are to thrive, it will be because they have specialized in their markets, run very efficient operations, and perhaps benefited from economies of scale. The idea that Apple may create a competitive advantage by integrating itself with a particular peripheral or component seems unlikely. So this more detailed examination of the component segment does not alter our original conclusions.

A CLOSER LOOK AT APPLICATIONS SOFTWARE

Because of Microsoft's dominance of both the operating system and the office suite markets, we merged the operating systems and applications software segments together in our initial treatment. Since applications software is not confined to word processing, spreadsheets, and presentation programs, the segment is worth a second look. Personal computers are ubiquitous, and the uses to which they are put are almost uncountable. Within that broad world, there is ample room for areas of specialization, niche markets that are sizable enough to attract skilled programmers.

These markets look radically different from the individual component markets. Applications software segments are often dominated by a particular competitor—Intuit in personal and small business accounting and tax preparation, Adobe in various graphics programs, Symantec in security—whose leading market position has been stable for some years. These competitors tend to be highly profitable, with returns closer to those of Microsoft than to the hardware manufacturers. These firms enjoy a significant measure of customer captivity thanks to the time and effort that customers have made in mastering the software, which raises switching costs. Like Microsoft, even though their underlying technology is not proprietary, they benefit from major economies of scale in software development and marketing. Each of these successful niche companies appears to enjoy significant competitive advantages. But only within its niche; no firm is a dominant player in more than one vertical market.

Apple has benefited from such advantages in two applications areas. The first is graphics, broadly considered. The Macintosh has historically been the computer of choice in areas with high visual and multimedia content. In desktop publishing, photography and digital film editing, and other kinds of creative design tasks, Macintosh has maintained a strong position, even as successive Windows versions have come ever closer to matching the Macintosh's intuitive ease of use. Yet the disadvantages of being tied to an idiosyncratic operating system and its own CPU technology have gradually undermined Apple's position in these markets. In the early 1990s, analysts estimated that Apple had captured over 80 percent of the graphics and desktop publishing market. By the early 2000s, that share had fallen to roughly 50 percent.

Apple's other great strength had been in the market for educational software. The Macintosh had the lion's share of the education (K-12) market in the early 1990s, in part because of software, in part because of

the effort it put into the education market, in part because of loyalty. But that share eroded because its machines were more expensive, because school districts standardized on the Windows platform, and because educators saw the benefits of educating students on the machines they were more likely to use after they left school. By 2002, the Macintosh's share of the market had fallen to under 30 percent; in 1990, it had been more than twice that. Again, competitive advantages in applications areas were undermined by the disadvantages of being outside the Microsoft-Intel platform of CPUs, operating systems, and hardware.

CONCLUSIONS

These abbreviated treatments of components and applications software are merely suggestive, not definitive. A thorough investigation of these segments would need the same detail as devoted to hardware, software, and CPU chips. We include them to drive home a point about applying strategic analysis. It is always best to begin simply and only add complexity as required. Undue complexity creates an intractable picture of the forces at work. The diagram in figure 4.5 was produced by and for John Sculley and the rest of Apple management in the early 1990s. It was intended to describe the structure of the information industry, but the result was too complicated to be useful. Apple went everywhere and nowhere. For the year ending September 2003, its sales were still down more than 40 percent from 1995 and it earned no operating income. For all of Steve Jobs's brilliance and the elegance of Apple's product design, it seems consigned to always push uphill against the advantages of Microsoft and Intel. In the PC industry, Apple is going nowhere.

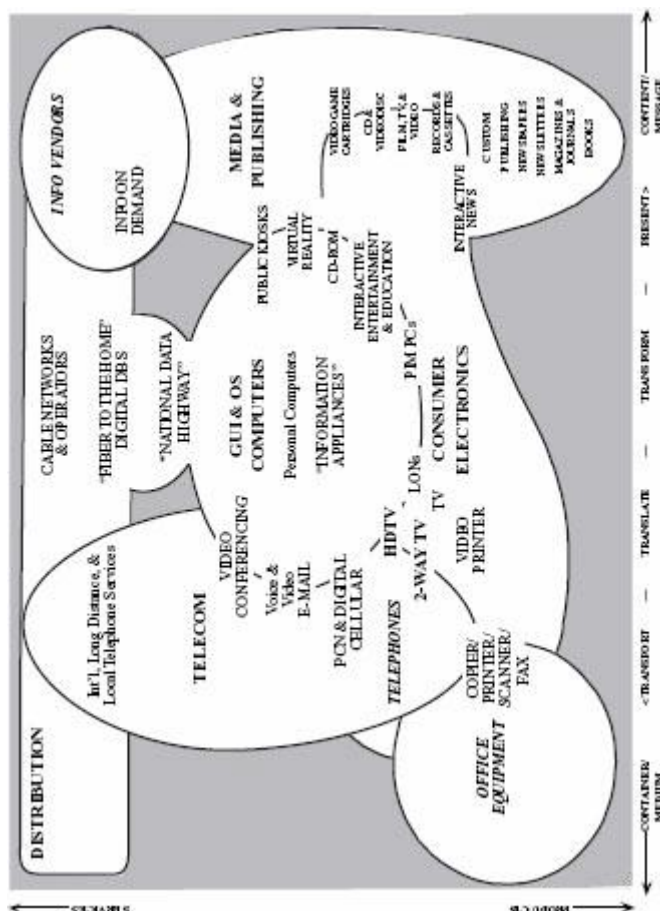


FIGURE 4.5
The Apple vision

In the approach we recommend here, the central question is whether, in the market in which the firm operates or is considering entering, competitive advantages exist. If they are present, what are they and who has them? We have described two tests for their existence: stable market shares and a high return on investment for the dominant incumbent firms. To keep the analysis manageable, our advice is to move one step at a time. Begin with one force—potential entrants/barriers to entry—not five. Start simply and add complexity later. Whenever things become confusing, step back and simplify again. Clarity is essential for strategic analysis. Finally, “think local.” Whatever historical promise existed in Apple’s strategic position lay in the segment of desktop publishing and other graphic-intensive applications. It had virtually no chance in taking on the broad PC industry, and it has no chance of doing so today.

CHAPTER 5

Big Where It Counts

Wal-Mart, Coors, and Local Economies of Scale

WAL-MART: NEW WORLD CHAMPION

In four decades, the Wal-Mart juggernaut rolled out of small towns in Arkansas to become the largest retailer in the world. By any measure, it has been one of the greatest successes in business history. It is also the most compelling example of how a strategy built on a local focus can produce a company that dominates both its original market and neighboring ones into which it expands. Sam Walton and his brother Bud began to build their empire in 1945 as franchisees of the Ben Franklin variety store with a single outlet in Newport, Arkansas. Twenty years later they moved into the discount store field, convinced that rural America could support the same kind of full-line, low-priced stores that had become popular in larger cities. They were correct. When the company went public in 1970, Wal-Mart owned 30 stores, all located in small towns in Arkansas, Missouri, and Oklahoma. At the end of 1985, it had grown to 859 discount stores in twenty-two states. By the year 2000, Wal-Mart sold more merchandise than any other retailer, anywhere. It had over 3,000 stores in the United States and Puerto Rico—no state was without a Wal-Mart—and more than 1,000 stores in eight foreign countries. Its sales of \$191 billion were almost twice the combined sales of Kmart, Sears, and JCPenney, other retailing giants.

Wal-Mart’s arrival in a new area made existing store owners quake, as well they might. Though zoning laws and other regulations occasionally stalled the company or forced it to adjust its plans, Wal-Mart’s thrust was as inexorable as the waves and as futile to resist.

The growth in sales over these thirty years was more than matched by the performance of Wal-Mart’s publicly traded shares. Its market value was \$36 million in 1971; it was \$230 billion in early 2001.^{*} At that level, Wal-Mart was worth fourteen times the combined market value of Sears, Kmart, and JCPenney. The reason is simple: it was more profitable and more reliable. In 2000, not a bad year for the other companies, they reported combined net income of \$2.2 billion. Wal-Mart earned \$5.4 billion. A year later, when Wal-Mart earned \$6.3 billion, the others could muster only \$394 million. See figure 5.1.

Wal-Mart managed to combine sustained growth with sustained profitability in one of the most competitive industries in the economy. Each of the three other companies we have used as a benchmark was itself a leading merchant for an extended period, only to be eclipsed by Wal-Mart. When a company has been this successful in this kind of competitive environment, with no patents, government licenses, or years of

productive research and development to keep would-be contenders at bay, any student of business strategy wants to identify the sources of its success.

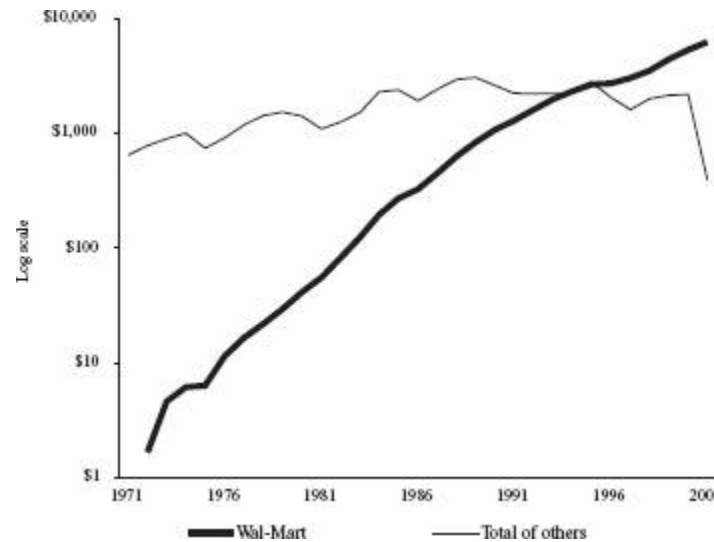


FIGURE 5.1

Net income of Wal-Mart compared with Sears, Kmart, and JCPenney (\$ million)

First, we need to confirm the premise. Has Wal-Mart's record been an unalloyed triumph, or have there been blemishes that may have been overlooked? Then we can ask what Wal-Mart did that the other retailers were unable to duplicate, and we may be able to identify strategic choices that Wal-Mart might pursue to maintain and extend its superior performance. Finally, we can ask what Wal-Mart's success says about the possibilities facing other companies.

INDUSTRY ANALYSIS

An analysis of the retail industry in which Wal-Mart operates is straightforward (figure 5.2). Stores sell directly to household consumers. Upstream, Wal-Mart and its competitors are supplied by manufacturers of everything from soft drinks to washing machines, from blouses to lawn mowers. These companies range from the makers of famous national brands like Coca-Cola, to contractors who make private-label products for the retailers, to small local suppliers of nameless merchandise. Wal-Mart sells such a broad range of goods that it competes on some products with virtually every other retailer. Still, the demarcations between industries along the supply chain are distinct; the names do not carry over from one sector to another. Like most other retailers, Wal-Mart does little or no manufacturing.

The number of competitors that Wal-Mart faces within the industry suggests that the perspective we should apply, at least initially, is what we have called "army of the ants," a situation in which competitors are so numerous that none of them tries to anticipate how others will respond to its actions. As Wal-Mart grew and became an elephant among these ants, it did not need to worry about what any of the individual ants might do, but they certainly had to be nimble to avoid being squashed.



FIGURE 5.2
Map of the retail industry

WAL-MART'S PERFORMANCE: FROM GREAT TO GOOD

We know that Wal-Mart became the giant while some former retailing heavyweights sputtered or disappeared. It must have been doing something right. But what, exactly? How did Wal-Mart grow and prosper, while the others were mediocre at best?

Before we start to answer that question, we should examine in detail Wal-Mart's performance over time. We can do that by looking at two measures of performance: operating margins and return on invested capital. Operating margins (earnings before interest and taxes, divided by net sales) are most revealing when comparing firms within the same industry, because they are likely to have similar requirements for capital. Return on invested capital (how much the company earns on the debt and equity it needs to run its business) is useful as a measure of performance between industries as well as within them. (We are using the pretax return on invested capital.) Both of these ratios are driven by operating profit and so should track one another. If they do not, it is probably a sign that there have been changes in the way the business is financed.

By comparing Wal-Mart with Kmart over the period 1971–2000, we can see that Wal-Mart was indeed the superior business (figure 5.3). Its margins exceeded Kmart's starting in 1980, when it was only about one-tenth the size of its older rival. The return on invested capital has a similar history. Wal-Mart did better than Kmart when it was still the much smaller company, and its performance was continually better from then on (fig. 5.4), with Kmart filing for Chapter 11 in January 2002.

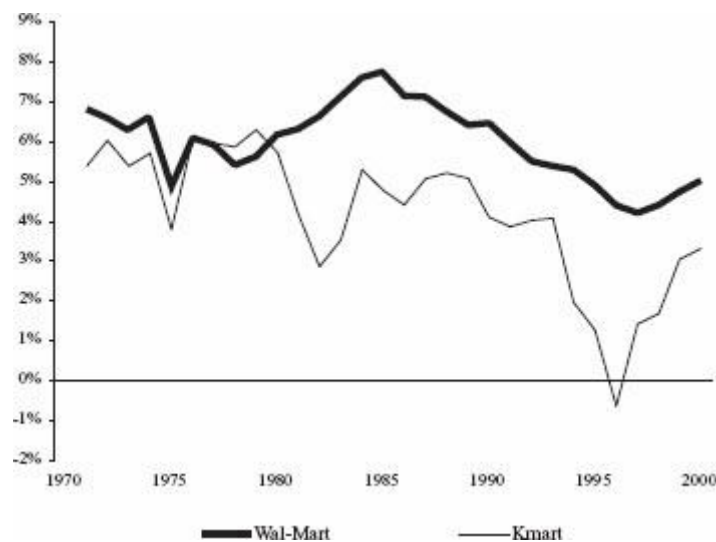


FIGURE 5.3
Wal-Mart and Kmart operating margins 1970–2000

The graph reveals a second pattern, potentially more revealing than the Wal-Mart–Kmart comparison. Wal-Mart’s most profitable years, measured by return on sales and on invested capital, ended sometime in the mid 1980s. Its operating margins reached a peak of 7.8 percent in 1985 and then fell continually to a low of 4.2 percent in 1997. Return on invested capital followed suit. The years of truly high returns on investment ended in the early 1990s. After that, Wal-Mart’s ROIC eroded, to stabilize in a range from 14 to 20 percent, pretax, respectable but not exceptional. Given this decline, we need to ask not only what set Wal-Mart apart from its competitors, but also what changed in its own operations that shifted it from an outstanding company to a less exceptional, though enormous, one. We start by looking first at Wal-Mart in its golden years around 1985, when its profitability was at a peak.

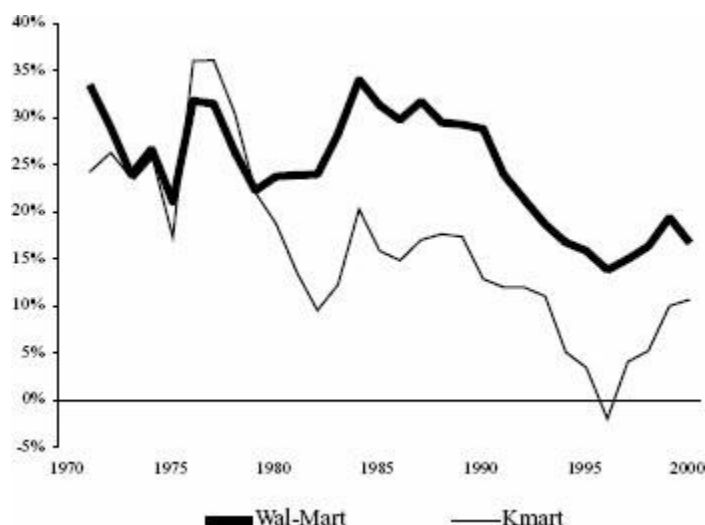


FIGURE 5.4
Wal-Mart and Kmart pretax return on invested capital, 1970–2000

Wal-Mart in the 1980s

In these years Wal-Mart was a regional powerhouse. It ended the year 1985 operating 859 discount centers in twenty-two states. More than 80 percent of the stores were located in eleven states radiating from its Arkansas headquarters. Wal-Mart serviced them from five warehouses; few of the stores were more than three hundred miles from any distribution center. It used its own trucks to pick up much of the merchandise it purchased and transport the goods to the distributions centers, from which they were dispersed on other trucks to the stores. The system was efficient. The concentration of stores allowed one truck to serve several of them on the same trip, and to pick up new merchandise from vendors while returning to the warehouse.

Wal-Mart’s expansion in the ten years to 1985 was aided by the rapid population growth of its region, especially in the smaller towns and cities that were its choice locations. The company was sailing with the wind. But Kmart and other retailers could read demographic statistics. They were determined to share in some of the opportunities that a growing population affords. By 1985, Kmart stores were competing in more than half of Wal-Mart towns. Still, even at that date, one-third of Wal-Mart’s stores had no local competition from other major discounters; they captured 10–20 percent of total retail sales in the area, an exceptional share.

In 1976 Wal-Mart had sales of \$340 million. Over the prior five years it had grown at a compounded rate of 50 percent per year. In 1981, sales were \$1.6 billion, and the growth rate had been 37 percent. For 1986, the comparable figures were \$8.4 billion and 39 percent. This is rapid growth, and the decline in the rate after 1976 is hardly surprising, given how large the company had become and how much of its region it had penetrated.

Wal-Mart’s executives, molded in the image of legendary founder Sam Walton, were men on a mission. Though they could not overcome the gravitational drag that increased mass puts on the pace of expansion,

they tried to grow their firm using one old and one new strategy. The old strategy was geographical extension: spread from the center into adjacent territories, and build new distribution centers to service the stores. This move would take the company eastward into Georgia, Florida, and the Carolinas, and west and north into New Mexico, Nebraska, Iowa, and even Wisconsin.

The new strategy was diversification. Wal-Mart made a minor effort with hardware, drug, and arts and crafts stores, none of which developed into a significant part of its business. The real push came with a warehouse club format, which Wal-Mart called “Sam’s Club.” The concept did not originate with Wal-Mart, nor was it the only retailer to find the format attractive. A warehouse club store was—and is—very large, it had bare-bones fixtures, it stocked a limited number of items in depth, and it sold its goods for 20 percent less than supermarkets and discounters. To be profitable, the store needed to sell its merchandise very quickly, even before the bill was due. Only metropolitan areas with at least 400,000 people, of which there were around one hundred in the country, could support that kind of turnover. As early as 1985, warehouse stores began to compete with one another in these choice locations. Wal-Mart had twenty-three of them by the end of 1985, and had leased real estate to open seventeen more in 1986. Because the Sam’s Club financial results were not broken out in Wal-Mart’s statements, it was difficult to tell how profitable they were.

From Net Sales to Operating Income

During these years, Wal-Mart generated more income for each dollar of sales than did its competitors. To find out exactly where its advantages lay, we should compare in detail the financial results of Wal-Mart with those of other discounters. Though the entries on the income statement are the consequences, not the cause, of the differences in operations, they tell us where to look for explanations of Wal-Mart’s superior performance.

Let’s begin with a side-by-side look at Wal-Mart and Kmart (table 5.1). For the three years ending January 31, 1987, Wal-Mart had average operating margins of 7.4 percent; Kmart’s were 4.8 percent. The difference was due entirely to much lower overhead costs. As a percentage of sales, Kmart had a lower cost of goods sold, largely because its prices were higher than Wal-Mart’s. But it dissipated this advantage by spending more, per dollar of sales, on selling, general, and administrative expenses (SGA).

A report on the discount retailing industry in 1984 gives us a more precise look at the components of operating costs and helps pinpoint Wal-Mart’s advantages (table 5.2). Since Wal-Mart itself was included in the industry totals, the differences between it and the other firms are understated. Still, the pattern here is similar to the comparison with Kmart. As a percentage of sales, Wal-Mart paid more to buy and receive its merchandise than did the competition, again because it offered consumers lower prices. The other retailers brought in more revenue from licensed departments. Yet Wal-Mart ended up with higher operating profits thanks to its lower costs for all the activities that make up selling, general, and administrative expenses. Compared to the others, it ran a very tight ship.

TABLE 5.1

Average operating margins, 1985–87 (percentage of sales)

	Kmart	Wal-Mart	Wal-Mart's Difference
Net sales	100.0%	100.0%	0.0%
Cost of goods sold	70.5%	74.3%	3.8% higher
SGA total	24.7%	18.3%	6.4% lower
Operating income	4.8%	7.4%	2.6% higher

TABLE 5.2

Industry-wide comparisons, 1984 (percentage of sales)

TABLE 5.3

Cost of goods sold comparison (percentage of sales)

TABLE 5.4

Benefits of monopoly

*

Second, Wal-Mart's advertising expenses were lower than the average, by 1.2 percent of sales, corresponding to a relative cost advantage of over 60 percent. For retailers, advertising is local. The newspaper ads, the inserts and circulars, and the television spots were all targeted at potential customers for the stores in their vicinity. If we make the reasonable assumption that Wal-Mart and the other discounters did roughly the same amount of advertising, measured by frequency of newspapers ads, television spots, and circulars, then Wal-Mart's lower costs as a percentage of sales were due to the greater density of its stores and its customer base in the markets in which it did advertise. The television station running a thirty-second spot in Nashville charges the same whether there are three Wal-Mart stores in the area or thirty. The same arithmetic holds true for newspaper ads or circulars sent to all residents in the vicinity. The media sell their services on the basis of cost per thousand people reached. For a retailer, the more relevant number is cost per customer, or potential customer, and that depends on penetration in the market. Since Wal-Mart had almost three times the level of local sales of its competitors, its advertising cost per dollar of sales would have been one-third that of the competitors. The same strategy of concentration that served Wal-Mart well by keeping down its inbound logistics costs also worked to contain advertising expenses. It got more bang for its buck because its advertising targeted its customers more effectively than did its competitors'.

The final function in which Wal-Mart had a cost advantage over competitors was managerial oversight and supervision. From the start, Sam Walton and his executives paid close and continual attention to the stores with frequent visits. By 1985, the company employed twelve area vice presidents; each had seven or eight district managers reporting to them. The vice presidents lived near company headquarters in Bentonville, Arkansas, where they attended meetings every Friday and Saturday to review results and plan

for the next week. Every Monday morning, all the vice presidents flew into their respective territories, where they worked the next four days visiting the stores for which they were responsible. The system functioned well for Wal-Mart. It provided abundant communication between the center and the periphery. The concentrated territories meant that the managers had more time to spend in the stores rather than driving between them. The flow of information moved in both directions. Company policy ensured that the store managers and employees even further down the chain of command could make their views and ideas known to management.

The system depended on the density of Wal-Mart stores and their proximity to Bentonville. To supervise the same number of outlets, a Kmart or Target executive had to cover a territory three or four times as large. They could not visit their stores so frequently or spend as much time when they were there. They had to live in the area and needed support from a regional office. The additional expense may have consumed 2 percent of net sales, an enormous bite when operating profits were only around 6 percent. The difference between Wal-Mart and the others (found on the “Miscellaneous expenses” line of table 5.2) is about 30 percent (2.3 percent divided by 7.6 percent), again a strikingly large relative cost advantage. Wal-Mart was able to do more with less, the often stated but seldom realized goal of managers everywhere.

The superior efficiencies Wal-Mart achieved in these three functions—inbound logistics, advertising, and executive supervision—taken together, gave the company an operating margin advantage of 4–5 percent of net sales. Wal-Mart’s total advantage was only around 3 percent. Because the lower prices it charged pushed up Wal-Mart’s purchases, in percentage terms, various operating savings could account for more than the entire difference in margins.

The superior efficiencies in these three functions were due to *local economies of scale*. The relevant localities are the areas in which Wal-Mart and its competitors had their stores, their warehouses, their advertising campaigns, and their managers. It made no difference that Kmart’s total sales were three times those of Wal-Mart in these years (1984–85). Those were numbers national and international, and thus not relevant. They had little bearing on the physical movement of goods, on advertising designed to reach the customers who shopped in their stores, or on the supervision the company employed to manage its retail operations. For each of these, what mattered in achieving economies of scale were the number of stores and customers within the relevant boundaries. Measured in this way, Wal-Mart was bigger than its competitors. It had more stores and customers in its region than they did, without doubt, and it had a higher density of stores and customers in its region than its competitors had in theirs. So even when it was still relatively small, high geographic concentration meant high profitability for Wal-Mart.

-
- 1. *Efficiency always matters.* Good management kept payroll costs and shrinkage substantially below the industry averages.
-
- 2. *Competitive advantages, in this case local economies of scale coupled with customer captivity, matter more.* Good management could not make Sam’s Clubs a runaway success, nor could it prevent the deterioration of Wal-Mart’s profitability after 1985, nor assure success in international markets.
-

3. *Competitive advantages can enhance good management.* In this case, Wal-Mart utilized its advantage of local economies of scale by passing on a portion of its savings to its customers and by running a very tightship. It made efficient use of management's time, the scarcest of all company resources. Good management was welded to a good strategy.

•

4. *Competitive advantages need to be defended.* Wal-Mart's low-price approach was an intrinsic part of the local economies of scale strategy, and not a separate policy choice. Other discounters like Kmart, Caldor, and Korvette all had profitable periods during which they took advantage of their local economies of scale. But in their drive to expand beyond their home turf, itself an ill-chosen strategy, they let competitors move uncontested into their local areas and lost on two fronts.

TABLE 5.5

Summary of Wal-Mart's cost advantages (as a percentage of sales)

COORS GOES NATIONAL

•

Home consumption. At the end of World War II, kegs accounted for more than one-third of all beer sales. By 1985, that figure had fallen to 13 percent of the total. Bottled beer and especially beer in cans had become much more popular. Part of this move reflected a decline in the tavern trade, as Americans left the bar stool for the domestic comfort of the den. Coincident with this change, the many local breweries that had emerged after the end of Prohibition were increasingly pushed aside by regional and national firms. It was the local beer makers who sold more of their output in kegs, without pasteurization, to bars and restaurants. As that part of the market declined, so did the fortune of the locals. Many names disappeared entirely; others were bought and sustained for a time by survivors.

•

Bigger plants. Advances in packaging technology raised the size of an efficient integrated plant (brewing and packaging) from 100,000 barrels per year in 1950 to 5 million in 1985. The smaller brewers could not justify building plants of this size, and so lost out to their large competitors, especially AB and Miller, who built ever larger plants, and more of them. By 1985, AB had eleven breweries, each of them able to brew at least 4.5 million barrels annually.

•

More advertising. In the struggle for share of the beer market, the brewers increased their spending on advertising. It rose from \$50 million in 1945, or 2.6 percent of gross sales, to \$1.2 billion in 1985, a whopping 10 percent of sales. Television, which barely existed in 1945, gave the brewers a new place to sink their advertising dollars. They took advantage of the medium and competed lustily to promote the advantage of their particular brand. The advertising had little sustainable effect in winning customers, though it was popular with viewers and with the networks. And it gave the national brewers one more advantage over the locals, in that the fixed advertising costs were spread over a larger revenue base.

•

More brands. In 1975 Miller introduced its Lite brand, lower in alcohol and calories than its premium High Life beer. Before long all the other major breweries had their versions, and some also came out with superpremium or other variants of the flagship brand. Though the segmentation strategy did little to increase overall consumption, it did provide one more advantage to the big brewers over their small, local, and increasingly marginal competitors. The big players could afford the advertising costs of launching and maintaining the brand, and they had more powerful names to exploit.

TABLE 5.6
Anheuser-Busch and Coors, market share by region, 1977 and 1985 (sales by millions of barrels)

TABLE 5.7
Anheuser-Busch and Coors income statements, 1977 and 1985

FIGURE 5.5
Operating margin, Coors and Anheuser-Busch, 1975–2000

TABLE 5.8
Coors in 1985 with 1977 market share

BRICKS OR CLICKS? THE INTERNET AND COMPETITIVE ADVANTAGES

CHAPTER 6

Niche Advantages and the Dilemma of Growth

A DISRUPTIVE TECHNOLOGY

ENGINEERING A START-UP

* Other start-ups did not match Compaq in quality and reliability. But they did have some breathing room, at first, because IBM was unable to meet the demand for the new machines, which far exceeded even its most optimistic projections. By the end of 1983, IBM had shipped over a million units, but that represented only 26 percent of the market, leaving plenty of space for some of the other firms.

With essentially no barriers to entry, there are bound to be shakeouts in an industry as dynamic as personal computers. Some of the early IBM-compatible makers like Eagle, Corona, and Leading Edge, gained an early foothold but were unable to survive once IBM caught up with its backlog and lowered its own prices. There were also shakeins. Michael Dell used his college dorm room as a just-in-time manufacturing center to sell PCs to his schoolmates. Two years later, in 1986, he produced a printed catalog and had sales of more than \$150 million. Gateway 2000 copied his direct sales approach, established itself in the heartland, and designed its cartons to look like cowhides. It reached the billion-dollar sales plateau in its sixth year.

INDUSTRY ANALYSIS

FIGURE 6.1

Total sales of the PC industry, share of top 20 PC makers, and Compaq share, 1986–95

FIGURE 6.2

Map of the PC industry*

- 1. Customers prefer to stick with what they know, especially regarding software. Switching costs can be prohibitive when many users have to be taught to use unfamiliar programs. Search costs also inhibit change because the buyer has to have confidence in the reliability of the new system and the survivability of its creators.

- 2. Intel devotes major resources to production technology, aggressively defending patents and developing its expertise to keep yields high and defects low.
- 3. The most important advantage is economies of scale. Writing complicated software and designing advanced microprocessors keeps talented and expensive engineers at their terminals and benches for hundreds of thousands of work hours. On the other hand, the marginal costs of the next unit of the operating system can be as low as zero and seldom more than a few dollars, even when burned on a CD and boxed with a manual. A similar though less extreme contrast holds for the next microprocessor to come off the line.

THE COMPAQ ADVANTAGE

FIGURE 6.3
Compaq’s sales and operating income, quarterly, 1989–93 (\$ million)

TABLE 6.1
Compaq and Dell, 1990 and 1995 (\$ million, costs as a percentage of sales)

FIGURE 6.4
Compaq’s return on invested capital and operating income margin, 1990–2001

*
But ingrained cultures are difficult to uproot. The engineering mentality and love of technology that was part of Compaq’s tradition did not disappear, even after Rod Canion left. In 1997 the company bought Tandem Computers, a firm that specialized in producing fault-tolerant machines designed for uninterruptible transaction processing. A year later it bought Digital Equipment Corporation, a former engineering star in the computing world which had fallen from grace as its minicomputer bastion was undermined by the personal computer revolution. At the time of the purchase, Compaq wanted DEC for its consulting business, its AltaVista Internet search engine, and some in-process research. Technology acquisitions are notoriously hard to digest, and Tandem and DEC were no exceptions. Compaq lost its focus on operational efficiency, its own profitability plummeted, and in 2002, it sold itself to Hewlett-Packard.

The Compaq story is so intertwined with the history of the PC that it is easy to miss the more general significance. It lost its competitive advantage and the resulting high levels of profitability as the markets grew and allowed competitors to develop equivalent economies of scale.

This is a recurrent phenomenon. Globalization has taught this lesson in a number of industries. Take automobiles. When the United States was separated from the world automobile market, Ford and General Motors had such enormous scale, relative to the size of the domestic market, that their positions were unassailable. This dominance was especially true in the luxury car field. With globalization, due largely to the

reduction of both trade barriers and transportation costs, competitors from abroad were able to expand the scale of their operations and ultimately to challenge GM and Ford within the United States. There are similar examples from other industries, like consumer appliances, machine tools, and electronic components.

For profitability, growth is a double-edged sword. It always requires additional investment, and the prospects of earning more than the cost of capital depend on the position of the firm in its industry. For companies with competitive advantages that they can maintain even as the market gets bigger, growth is an unambiguous benefit. But when markets enlarge, they often allow competitors to achieve comparable economies of scale and thereby undermine a major barrier to entry. Unprotected by barriers, companies do not produce exceptional returns.

THE APPLE VERSION

TABLE 6.2

FIGURE 6.5
Apple’s sales and operating income margin, 1980–2000

TABLE 6.3
Compaq and Apple, 1991 and 1997

Compaq	
Apple	
Sales in \$ billions, 1991	
	\$ 3.6
	\$6.3
Sales in \$ billions, 1997	
	\$24.6
	\$7.1
Average operating margin	
	10.2%
	1.7%

CHAPTER 7

Production Advantages Lost

PHILIPS DEVELOPS THE COMPACT DISC

FIGURE 7.1
Map of the recorded music industry

TABLE 7.1
Cost estimates for unit of prerecorded music in 1982

Artists
\$2.65
Promotion (including a charge for profits)
\$1.33
Distribution
\$3.00
Total
\$6.98

In estimating what it would cost to produce a compact disc, the Philips executives did not have much experience to guide them. They knew that in the production of videodiscs, it took several years to get a line operating efficiently; yields improve as the sources of contamination are eliminated. They estimated that yields would increase and costs decline until a cumulative 50 millions units had been produced, at which point the cost per disc would stabilize at around \$0.69 (table 7.2). The first firm to enter the business might profit from moving down the learning curve ahead of its tardy competitors.

These variable production costs were only one part of the manufacturing equation. The other piece was

the cost of the plant and equipment necessary to inscribe the music onto the discs. The Philips engineers estimated that it would cost \$25 million and take eighteen months to build the first manufacturing line with a capacity of 2 million discs per year. After that, the time would drop to one year and the equipment would improve and become less expensive. These reductions would continue for at least five years as each generation of machinery outdid its predecessor. Assuming a cost of capital of 10 percent and a 10-year depreciation schedule, the annual equipment cost per disc would drop from \$2.50 in 1981 to \$0.33 in 1986 (table 7.3). Further increases in plant size beyond the 2-million-disc capacity would not lead to significant cost-per-disc reductions.

TABLE 7.2

Variable cost per CD for cumulative units produced

Cumulative Units Produced (millions)

Cost per Unit

	0–5
\$3.00	
	5–10
\$2.34	
	10–50
\$1.77 over 50	\$0.69

Putting both parts of manufacturing costs together, it is clear that after three or four years, the cost of producing a disc with the latest-generation equipment would drop well below \$2.80, the amount that Philips executives calculated record companies could afford to spend and still turn out a product their customers would purchase. Economies of scale in production were quite limited. For example, a fourth-generation machine would represent capital investment of \$3.73 per unit of disc capacity, or a capital cost per disc of roughly \$0.75. If cumulative disc output by year four had reached 50 million units, then the variable costs per disc would be another \$0.69, bringing the total cost of a disc to \$1.44. From the cost side, the compact disc project looked feasible.

52nd Street. The Ninth Symphony followed shortly. By the end of the year, more than one hundred titles were available.

TABLE 7.3

Equipment cost per CD

Equipment cost per disc

Annual equipment cost per disc at 20% (COC and 10-year depreciation)

1982	\$12.50	
		\$2.50
1983	\$8.35	
		\$1.67
1984	\$5.58	
		\$1.12
1985	\$3.73	
		\$0.75
1986	\$2.39	
		\$0.48
1987	\$1.67	
		\$0.33

The question remained, where was Philips going to make its money? Polygram and CBS/Sony were the first record companies to adopt the new medium; they were partners with Philips and Sony in the development effort. The other record companies quickly followed suit. But none paid a royalty to Philips for its technology. Quite the opposite. Philips and Sony had to persuade them to take up the new product; they were not about to reduce their returns for the favor. No patents protected the technology. It had been developed at MIT in the 1950s. And the large record companies were the only players in the whole industry who were concentrated enough to wield some bargaining power. Philips was not in a position to coerce them.

Perhaps it could prosper as a manufacturer of compact discs. As the first mover into the field, might Philips have been able to take advantage of its earlier start down the learning curve, producing the discs at a much lower variable cost than companies just beginning to learn the intricacies of achieving high yields by keeping contamination to a minimum? Maybe the first mover could achieve a learning-curve advantage sufficient to stay permanently ahead of any competitor. There were a few problems with this plan. Although experience did help in raising yields and lowering variable costs, it was offset by the disadvantage of being the first to invest in a production line. Here, costs were lower for the latecomer, who did not have to pay the penalty for taking the lead.

The balance between these two forces would depend on how rapidly the market for CDs developed. Consider the situation of an entrant producing discs using a third-generation (year three) technology. Its capital costs per disc would be \$1.12, or \$1.38 less than Philips's first-generation cost of \$2.50. (See table 7.3.) If Philips's cumulative volume of output over the first two years amounted to 10 million discs, its variable cost at \$1.77 per unit (see table 7.2) would be \$1.33 below that of the new entrant (\$3.00 in table 7.2). The gains and losses from being the first mover would basically offset one another. If it used third-generation equipment, Philips would be level on capital costs and enjoy the full \$1.33 advantage on variable costs. On balance, then, Philips could expect to benefit from an initial learning-curve advantage over new entrants. However, as an entrant gained experience and moved down the learning curve, this advantage would start to shrink and would disappear entirely once the entrant had produced a cumulative volume of 50 million discs. Because it was using later-generation equipment, its capital costs would be lower than Philips's.

If the CD market exploded to 200 million or more units per year, then at least some new entrants could rapidly reach a cumulative output of 50 million. It is unlikely that Philips would benefit from customer captivity, since its important customers were the large, sophisticated, and powerful major record companies. Thus, Philips's cost advantage would last for less than two years. Paradoxically, the only condition that might sustain Philips's learning curve advantage would be a slowly growing CD market, so that it would take years before competitors could reach the 50 million cumulative milestone and complete their passage down the learning curve.

From this perspective, the problem with the market for discs was not that it would be too small; it would be too large. Even if it had a head start, Philips was not going to sustain an advantage based on being the first mover for more than a few years. Unless it achieved some measure of customer captivity, there was no reason to think that Philips could keep current customers from taking their business elsewhere. And since plants could be efficiently operated at a scale of only 2 million discs per year, economies of scale in production would not be a deterrent to entry. Without captive customers, durable production advantages, or relative economies of scale, Philips would benefit from no competitive advantages as a producer of compact discs.

The situation was, or should have been, no more encouraging to Philips as a maker of audio components. Philips and Sony were the first to market with CD players, but it took very little time for every other firm in the industry to have a unit available. Since all the players used the same technology, they could only differentiate themselves by design, secondary features, and price. These attributes are rarely a recipe for profitable investment, especially for a company like Philips, which prided itself on its research and technology and paid the price in overhead costs.

With the wisdom of hindsight, it is easy to chide Philips for its compact disc strategy. However, its dream of profiting from being the first mover in a rapidly developing market is one that has been shared by a number of manufacturing firms. Most have done no better than Philips. Its experience indicates why.

Being a first mover is very much a double-edged sword. On the one hand, learning curve effects benefit

a first mover as its variable costs decline with cumulative production volume. On the other hand, vintage effects—the fact that plants built later are more efficient than earlier ones—count against the first mover. In a large, rapidly growing market like CDs, cumulative volume growth and learning are rapid for both first movers and later entrants. A law of diminishing returns to learning shrinks any first-mover advantage, so that the adverse vintage effects come to predominate. At that point, it was certain that the successful compact disc business would attract competitors. Philips’s profitability suffered. It might actually have been better off if CDs had been restricted to a niche market in which it would have had the field to itself for perhaps five to seven years. During this interim period, it might have been able to earn above average returns, maybe enough to compensate it for its initial development expense.

CISCO LEARNS TO CONNECT

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FIGURE 7.2
Cisco’s market value, sales, and operating income, 1990–2000 (\$ billions)

* A heavy user of stock options, Cisco undoubtedly understated its costs by keeping a large share of salary expenses off the income statement. Some skeptics have suggested that if the options had been expensed, Cisco may never have been really profitable. That critique is undoubtedly exaggerated. In July 2000, Cisco had \$5.5 billion in cash (up from \$50 million in 1990), and investments in near cash securities of \$14 billion. It had issued no debt over the period, and sold less than \$3 billion in net new equity. So however it might have dressed up its income statement by masking the true costs of employment, Cisco profits certainly exceeded its cost of capital throughout the 1990s.

FIGURE 7.3
Cisco’s pretax return on invested capital, 1990–2003

TABLE 7.4
Cisco’s increased costs as a percentage of sales, 1996–2000

Cost of sales	
Total Change 1996–2000	
Cost of goods sold	
1.2%	
Research and development	
4.5%	
Sales and marketing	
3.1%	
General and administrative	
–0.6%	

Amortization of goodwill and purchased intangible assets
1.5%
In-process research and development
7.3%
Total
17.0%

* Its cost of goods sold began to shrink as the unprofitable parts of its carrier business were eliminated. (See figure 7.4.)

FIGURE 7.4

Cisco's quarterly revenue and operating income margin, October 1999 through July 2003

TOASTERS?

CHAPTER 8

Games Companies Play

A Structured Approach to Competitive Strategy

PART I: THE PRISONER'S DILEMMA GAME

FIGURE 8.1

Competitive interactions within the competitive universe

PRICE COMPETITION AND THE PRISONER'S DILEMMA

prisoner's dilemma because they imitate the choices faced by two or more accused felons who participate in a criminal activity, are caught, and are then interrogated separately. If they all cooperate with one another and refuse to confess, there is a strong probability that they will beat the charge, and they can expect a light sentence. But each of them can negotiate a deal with the police for even less jail time if he confesses and testifies against his confederates. The worst case is for an accused to maintain his innocence but have one of his confederates confess. Given these alternatives, there is a powerful temptation to abandon the group interest and confess. The incentive is both positive (get less jail time by confessing) and defensive (you had better confess because your friends can hang you out to dry if they confess and you don't). So it is no wonder that maintaining the cooperative position is difficult, both for accused felons and for competitive firms. The usual outcome is what is referred to in game theory as a "noncooperative equilibrium."

FIGURE 8.2

The matrix (or normal) form of the prisoner's dilemma

equilibriums—outcomes that are stable because no competitor has an obvious incentive to change its action. These equilibriums depend on two conditions:

- *Stability of expectations.* Each competitor believes that the other competitors will continue to adhere to their present choices among the possible courses of action.
- *Stability of behavior.* Given the stability of expectations, no competitor can improve its outcome by choosing an alternative course of action.

A Beautiful Mind and Nobel Prize fame. In the Lowe's–Home Depot example, imagine that the current outcome has Lowe's at \$115 per basket, Home Depot at \$105 per basket (box C). If Lowe's expects Home Depot to keep its price at \$105, Lowe's can improve its position by lowering its price to match Home Depot. With both at \$105, they split the market and Lowe's gross profit rises from \$120 to \$150. Clearly, with Lowe's able to improve its situation by changing its price, the original situation is not an equilibrium. If Lowe's were to remain at \$115, Home Depot would have no motivation to change from \$105, so its position would be stable. But why would Lowe's not lower its price? For an equilibrium to exist, all the competitors must be satisfied with the status quo.

The situation is also unstable in box B, in which it is Home Depot that is charging \$115 and capturing only 30 percent of the market. The more interesting situation is in box A. Here both competitors charge \$115, split the market, and earn \$200 in gross profits. Their joint total of \$400 is the highest of the four possibilities. But if each believes that the other will maintain a price of \$115, it makes sense for it to lower its price to \$105, win 70 percent of the market, and pocket \$210 rather than \$200. So this situation is also not an equilibrium, since our second condition—stability of behavior—is not in place. The only equilibrium outcome is in box D, where both companies charge \$105 per basket and earn \$150 in gross profit for ten customers in the market. It makes no sense for either of them to deviate from this position and charge \$115, because their

gross profit would drop from \$150 to \$120. Since neither has an incentive to change, the first condition—stability of expectations—is also fulfilled.

The problem for our competitors is that neither does particularly well in this position, and their joint incomes are the lowest of the four alternatives. It is possible for them to achieve higher profits, but that requires more sophisticated strategies than simply pursuing their own most profitable course without regard to the competition. We will turn to these strategies later in the book. But even with more profitable approaches available, there will always be an incentive for individual competitors to deviate from these ostensibly superior outcomes.

The matrix form for presenting competitive information provides a straightforward approach to analyzing whether the current action choices and resulting outcomes are likely to be stable. Firms in situations with a few identifiable competitors can construct a matrix, place themselves and the other players into the matrix, and see whether the current situation is an equilibrium. If the answer is no, if it is clear that any player has an incentive to change its current action choices, then the firm doing the analysis can anticipate and prepare for such change. If the change has unfavorable implications, then the company can look for ways to alter the current situation to prevent such changes. For example, in our Lowe's—Home Depot case, if Lowe's thinks that Home Depot is preparing to lower its price to gain market share (move from box A to box C), Lowe's can announce that it will match whatever price Home Depot offers. That announcement will alert Home Depot that its expectations of stability on Lowe's part are mistaken, and it should reconsider its price cut.

The current outcome may look stable but not desirable. Instead of anticipating change, the company can look to induce its competitors to alter their actions and produce a more favorable outcome. In either case, and for competitive situations in general, an important step in strategic thinking is to examine the current situation to determine the extent to which it is an equilibrium.

TAMING THE DILEMMA

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Although the discussion of responses so far has been addressed to price competition, it applies equally to competition over features, discounts, advertising, and resources. In all of these related areas, an aggressive firm decides that it can win customers by offering more, charging less, spending more to attract them, or paying more for scarce resources. In all of them, there are joint gains from cooperation but strong incentives for individual defection. Each of these initiatives is a blow to joint profitability, and each of them can be countered by the same kind of structural and tactical adjustments that work to make price competition less desirable.

And one final point to remember: understanding how the prisoner's dilemma works and the tools for coping with it can be of value to those market participants—usually customers—who actually benefit from competition and are harmed by industry cooperation. Prosecutors dealing with real prisoners know that they need to keep the prisoners isolated from one another and to bargain with them separately. Customers of companies in a cooperating industry should seek private, nontransparent price arrangements; deal with suppliers individually, offering to concentrate their business with those who defect on price or features; and cooperate with other large customers in trying to undermine industry cooperation. A knowledge of the

dynamics of the prisoner's dilemma can cut both ways.

CHAPTER 9

Uncivil Cola Wars

THE PEPSI CHALLENGE

COLA DRINKS: A BRIEF HISTORY

INDUSTRY ANALYSIS

FIGURE 9.1
Map of the soft drink industry

WHICH COMPETITIVE REGIME?

* For businesses requiring little capital investment per dollar of sales, operating margins in the 16–17 percent range translate into after-tax returns on invested capital of at least 30 percent. As this figure is roughly three times the ROIC for the average U.S. publicly traded corporation, it supports the claim that there are barriers to entry within the soft drink industry, and that Coke and Pepsi operate inside them.

TABLE 9.1
Market share in the soft drink business, 1977–82 (by case volume)

TABLE 9.2
U.S. soft drink sales and operating income (\$ million)

GUNFIGHT AT THE KO CORRAL: THE SODA MAKERS PLAY THE PRISONER’S DILEMMA

TABLE 9.3
Coke’s and Pepsi’s Competitive Steps, 1933–1982

TABLE 9.3 (continued)
Coke’s and Pepsi’s Competitive Steps, 1933–1982

FIGURE 9.2

* And sales in food stores, where customers had a choice between the two, had already tilted in Pepsi’s direction. Coca-Cola was concerned that in a short time, Pepsi might legitimately claim that more people actually drank its cola, not simply that they preferred it.

By 1985, Coca-Cola had decided to confront this problem head-on. Using its Diet Coke formulation as a base, which to many consumers tasted more like Pepsi than it did Mother Coke, Coke took out the artificial sweetener and rebuilt the drink with high-fructose corn syrup. After tens of thousands of taste tests, the company introduced this sweeter formulation of its traditional drink and made the new product its flagship brand, going so far as to remove old Coke from the market. New Coke had a new can, a new slogan, and a new advertising campaign. Together with the sweeter taste, all these changes were aimed at the younger market that Pepsi had so far managed to dominate. At first the whole strategy was a disaster. New Coke may have scored higher in the Pepsi Challenge, but sales were embarrassingly low. Fortunately for Coca-Cola, an outpouring of protest from those customers committed to the original drink forced the company to reconsider its plans. Within four months, old Coca-Cola was back, first as Coca-Cola Classic, then simply as Coca-Cola, with the sweeter version now labeled New Coke.

After the fact, some analysts tried to argue that the New Coke strategy was a brilliant gambit to win more shelf space for the company, now that it had two distinct brands of the calorie- and caffeine-laden version of the drink, rather than one. This interpretation conveniently ignored the original intent, which was to abandon old Coke entirely. The company did not want to split its sales between the two and allow Pepsi to claim the top spot. But in fact the turmoil did benefit Coca-Cola. The media attention was intense, and the company realized what it had ignored when it ran the taste test—that many loyal customers had a visceral attachment to the original, a drink they identified with their youth, their country, their very identity. Pepsi did surpass the market shares of both old and new Coke, but only for a short while. By 1986, Classic Coke was back in the lead, and the combined shares of Classic, Coca-Cola (new), and Diet Coke surpassed Pepsi and its diet version, 29 percent to 23 percent (table 9.4).

The New Coke fiasco ended up providing Coca-Cola with a potential new weapon for competing in the sweeter/younger segment of the market. Now, if Coke wanted to go to war against Pepsi, it could do it on Pepsi’s home turf. Sweet Coke could be used as an “attack” brand, introduced into markets where Pepsi was dominant. If New Coke were really successful, it might capture one-sixth of this market. Should Coke decide

to use New Coke as a “low-priced”—warrior—brand, then Pepsi would be made to suffer. Matching the lower price, a decision Pepsi virtually had to make, would cost it six dollars in sales for every dollar it cost Coke. Meanwhile, traditional Coca-Cola could have stood aside from this fray, maintaining its status as the drink for mature cola lovers, and its higher profit margins. However inadvertently, Coca-Cola had at last learned whom to punish in a price war. Now that it had this weapon, peace between the two might be possible.

TABLE 9.4

Market share, 1982–86 (by case volume)

*
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TABLE 9.5

Coke’s and Pepsi’s competitive steps, 1984–92

FIGURE 9.3

Operating profit margins, domestic soft drink business, 1977–98

IS CULTURE DESTINY?

Fortune magazine that received much media attention, CEO-in-waiting Ivester, described as Goizueta’s “pit bull,” declared that Coca-Cola’s policy would be to stick a hose in the mouth of its competitor, whom he saw as struggling in the pool. Enrico, a Vietnam veteran, had already published *The Other Guy Blinked: How Pepsi Won the Cola War*, a book that gloated over the New Coke episode in the ongoing struggle. The people at Coca-Cola never forgave him. Under his leadership, PepsiCo announced ambitious goals for effectively stealing share from Coke in international markets, where Coke was dominant.

Both strategies failed. Ivester did not drown Pepsi—Pepsi’s market share actually increased—as he and his board of directors should have known. But he did manage to put a dent in Coca-Cola’s earnings. For its part, Pepsi lost out in Venezuela, the only international market where it had a substantial share. Coca-Cola made an offer to the Pepsi bottler who had a monopoly for the country. It must have been an offer he couldn’t refuse, because he switched allegiance and started to bottle and distribute Coke. One might ask what the Coca-Cola and PepsiCo boards of directors were doing while the CEOs decided to resort to the warfare strategies that had served the two companies so poorly before the truce of the late 1980s.

Ivester’s tenure at Coca-Cola hardly lasted two years. He was undone by a series of problems, including several health scares in Europe and a racial discrimination lawsuit in Atlanta. His response, the board felt, was too aggressive, and he managed to damage the company’s image, which was one of its most important assets. The man who wanted to drown his competitor was undone by the same uncompromising temperament. It was during his watch that Pepsi belatedly emulated Coca-Cola by spinning off its bottling business in 1999, creating what an industry journal called a “rational player.” With that move, both companies raised their prices to supermarkets, which had fallen by more than 10 percent over the prior four years. Unhappily for Ivester, it was too late for him; he was gone by the end of the year.

The urge to grow, to hammer competitors and drive them out of business, or at least reduce their market share by a meaningful amount, has been a continual source of poor performance for companies that do have

competitive advantages and a franchise, but are not content with it. It may be that the same aggressive personality traits that push people forward until they reach the top of the corporate ladder also move them to take on the competition, whatever the cost. It would be foolish to expect a sudden shift from warrior to corporate statesman for most of these people. Still, incentive systems that reward based on some aspect of profit, rather than for revenue or another measure of size, may focus attention on what is good for the shareholders and, by extension, other stakeholders in the company.

CHAPTER 10

Into the Henhouse

FOX BROADCASTING COMPANY

THE BROADCASTING INDUSTRY

FIGURE 10.1
Map of the television industry, around 1985

TABLE 10.1
Market share changes for the three networks, 1976–86

* That leaves capital requirements at around 10 percent of sales. With operating margins at 12–13 percent, the pretax return on capital amounts to 120–130 percent. Even if the investments requirements were twice our estimate, the pretax return on capital would be 60 percent or more. Given the steadiness of the revenues, the networks could easily finance their operations with half debt, half equity. The debt would provide a tax shield to keep the after-tax return on equity capital in the stratosphere.

TABLE 10.2
Estimated balance sheet of networks and owned stations, 1984–85 (assets as a percentage of sales)

Cash
1%
Accounts receivable
4%
Inventory
0%
Property, plant, and equipment

10%

Total assets

15%

Spontaneous liabilities

5%

Total capital required

10%

All the signs of an industry protected by high barriers to entry are present here, in spades. Thanks to the barriers, the firms inside earned exceptional returns on capital. This is what made the industry attractive to Murdoch, as it had been to Paramount and other aspiring entrants. But it also served as a warning of how challenging it would be for a newcomer to climb the walls, get inside, and survive.

- Programming costs are fixed. Networks contract for new shows before they or the producers know the size of the audience they will reach. It is true that some crucially popular shows, and especially their star performers, can demand more money for renewals. Sometimes the networks pay, sometimes they pass. In the main, however, programming costs do not rise proportionately with the size of the audience.
- Network distributions costs are fixed. AT&T did not charge more to transmit popular shows from the networks to the local stations. A new network trying to establish itself would initially be at a severe cost-per-viewer disadvantage in paying this bill.
- Local distribution costs are fixed. For broadcast signals of equivalent range, it costs no more to reach 50 percent of the potential viewers than to reach 5 percent. Even newspapers do not have an economy of scale advantage as clear-cut as broadcasters do.
- Local production costs, like news programs, are somewhat fixed. Popular newscasters get paid more than less popular ones, it seems clear, but not in proportion to the size of their audience. Studio fixtures don't vary with the size of the audience, nor do the cameras and other equipment that send out the signals.
- Advertising costs are fixed. The ads the networks or stations run on themselves and for themselves, and the ads they place in newspapers, magazines, or even on competing stations, do not vary with the size of their own audience. And advertising sales costs are essentially the same for all national networks regardless of viewership.

COMPETITION AMONG FRIENDS

Taxi, which moved from ABC to NBC in 1982, it was because it had been canceled by its original network,

not enticed by its new one. The cooperative stance of the networks toward programming also worked in their handling of sporting events. CBS had a long-established relationship with the National Football League. Rather than challenge it, NBC helped to start the American Football League. When the NFL and the AFL merged in the late 1960s, each network kept its relationship. Not wanting to be left out of a sport growing in popularity, but understanding how the networks played the game, ABC created *Monday Night Football* to get its share of the pie. This arrangement lasted for more than two decades.

ROOM FOR ONE MORE?

The Tonight Show. The other programs in its first years were also ones that the established networks had either rejected outright or were not likely to run. *Studs*, *Married with Children*, and *The Simpsons* were either too vulgar (though this may be hard to believe from the vantage point of the twenty-first century) for the other networks, or in a cartoon format, which they reserved for Saturday-morning children's shows or Disney specials.

Murdoch had made his fortune in print journalism by following the path of sensationalism in his papers. Even his broadsides were tabloids. Fox Broadcasting adopted the same approach. By going down-market, it reduced direct competition with the other networks. If this kind of programming was going to win Fox an audience, it was more likely to come from independent stations, either broadcast or cable, that were already carrying similar fare. It also targeted a teenage and youth audience that had no established viewing habits and was more easily attracted.

- We intend to abide by the rules of your game.
- Though you can probably crush us if you choose, it will cost you much more to fight us than to let us in. And since we have made the Fox Broadcasting System a part of our global media strategy, we are not going to go easily or quietly.
- The smart move is to let us join the club.

THE BUSINESS TRANSFORMED

WHAT ABOUT SYNERGIES?

LEARNING FROM FOX

CHAPTER 11

Games Companies Play

A Structured Approach to Competitive Strategy

PART II: ENTRY/PREEMPTION GAMES

COMPETING OVER QUANTITY

* Therefore, in this game, the sides have to develop distinctly different strategies if they are to succeed.

The second important difference is that in the entry/preemption game, decisions, especially mistakes, have enduring consequences. In the prisoner's dilemma game, if there are long-lived unfavorable outcomes, they are the result of persistent foolishness. At any moment, the competitors can take corrective action and make more profitable choices. But if Lowe's decides to build a store on what has been Home Depot's turf, or Monsanto adds plant capacity to increase its production of nitrate fertilizer, these facilities are in place for an extended period. When they play an entry/preemption game, competitors have to take into account these long-run consequences.

Finally, aggression plays a different role in entry/preemption games than it does in prisoner's dilemma games. In pricing competition, some firms justify extended, costly price wars with the hope that they may eventually drive their competitors out of business entirely. Historically, however, there are few instances in which well-run, long-established companies have been eliminated by a price war. Except as a reaction to the behavior of others, aggression in price competition is almost always dysfunctional. The saving grace is that the potential damage of aggressive price cutting is limited by the fact that it is readily reversible, at least in theory.

Aggression works differently in an entry/preemption game. First, given the costs of reversing direction when capacity decisions are involved, the incentives for an aggressive reaction to an entrant's initiative are reduced. Unlike for the price-cutting competitor, who can easily change course, the commitment to invest in additional capacity is not easily undone. Therefore, the justification for an aggressive response—that it will bring the initiator to its senses—is less robust, and the argument for accommodation becomes more compelling. The corollary is that an aggressive decision to expand capacity or output may be more effective than a tentative one, since the respondent realizes that the aggressor is not going to back off. On the other hand, the risks of aggressive behavior are heightened in the entry/preemption game. If one firm takes steps to expand output and its competitors respond in kind, the extended consequences of these capacity decisions make them hard to undo, and the mutual pain inflicted will last a long time. Because aggression is a two-edged sword in capacity decisions, a more delicate approach is required to navigate the strategic imperatives of the entry/preemption game than to manage pricing competition.

STRATEGIC APPROACHES FOR THE ENTRANT

finis in any situation that involves two powerful competitors. To represent these later actions we would need to extend the Accept branch of the tree beyond our current terminus.

FIGURE 11.1

The tree (or extensive) form for an entry/preemption game

The Late Show Starring Joan Rivers, The Simpsons, and Married with Children.

Second, the entrant should proceed quietly, taking one small step at a time. A brash public announcement that it plans to capture a major portion of the incumbent's business, with openly proclaimed goals for market share, is almost certainly going to trigger an aggressive reaction. The lobster dropped suddenly into a pot of boiling water struggles and tries to jump out. Lobsters eased into a pot of cold water, which is then heated gradually, remain passive, even as they become dinner.

A general nonconfrontational attitude can be reinforced with specific signals. Limitations on the entrant's capacity send a reassuring message. A single store is less threatening than five, and a new plant able to supply just 10 percent of the market is less of a concern than one able to satisfy the entire market. Idiosyncratic, restricted, and onetime sources of financing are another strong signal of limited intentions. A large and visible war chest is more likely to lead to war than to the incumbent quitting the field. Limitations in advertising reach and product lines also reduce the likelihood of a nasty reaction by the incumbent, since it can weigh the small losses it will incur by accommodation against the costliness of an aggressive response. Fox's entry strategy started with a restricted programming schedule, both a recognition of economic reality and a signal of nonaggression to the incumbent networks.

Third, to the extent that it can, the entrant should let the incumbents know that it is moving into only one market, not all the ones the incumbents dominate, and that it is unique among other potential entrants. If the existing companies see the newcomer as only the first of many, they have no choice but to resist and make an example of it, to discourage the others. Again, Fox was clever. It made sure that its challenge to the existing networks was oblique. The target audience for its programs was distinctively down-market when compared to that of its established colleagues. Fox's style would make a transition to the mainstream difficult, limiting its threat to the established firms. Also, before it entered the network business, it had put together a string of local stations that it owned or with which it had an affiliated relationship. Anyone trying to copy Fox's strategy would have difficulty replicating this move. The incumbent networks could believe that even if Fox did succeed, other newcomers were not likely to follow it into the business.

Fourth, in situations where there are a number of incumbents, as in television networks, the newcomer wants to spread the impact of its entry as widely among them as it can. Doing a little damage to a number of incumbents is less likely to provoke an aggressive response than if the entrant wounds only one of them, but that one severely. In that case, the injured incumbent would have to respond aggressively. Again, Fox's strategy was well formulated. Its first programs, late-night talk shows, put it into competition with NBC and Johnny Carson. But it followed with comedy and youth-oriented shows that competed more directly with ABC. It did not try to challenge NBC's powerful Thursday night lineup, then (1986) anchored by *The Cosby Show*.

There are a number of things an entrant can do to make it expensive for incumbents to mount an aggressive response. If the entrant makes moves that are difficult for it to reverse, it sends the signal that an incumbent is in for a long and costly fight if it tries to crush the newcomer. A venture with a large upfront investment and hefty fixed costs, especially when the firm has some flexibility as to the split between fixed and variable costs, indicates a powerful commitment by the entrant to stay in this market. By contrast, subcontracting production, sales, or some other important functions, especially when the contracts are short and carry no significant cancellation penalties, sends the opposite signal: that the entrant is cautious and has an exit strategy in hand.

When there are several incumbents, a strategy of making small inroads against each spreads the pain and makes the newcomer harder to kill, since none of the incumbents alone can deliver a mortal blow.

Moreover, any incumbent firm that decides to attack the entrant runs the risk, through collateral damage, of starting a war with its existing rivals, which can be costly and protracted. For example, if either NBC, CBS, or ABC had felt the need to resist Fox's entry into the network business, and had attacked Fox by lowering its own advertising rates, that move would have shattered the cordial pricing discipline within the industry and had a destructive effect on network profitability. It is hard for an incumbent firm in these situations not to shoot itself and its established competitors in the feet, once it decides to shoot. And, if its established competitors respond in kind, the situation will become quite ugly. In Fox's case, the networks held their fire and there was no serious price competition for advertising.

Finally, an entrant may make a strong public commitment to succeeding, or at least persisting, even if its actual activity is small and focused. The purpose is to deter retaliation by established firms, but the strategy can be dangerous. The worst outcome in an entry/preemption situation is a long and protracted competitive struggle. A strong public commitment by the entrant to succeed may leave it no room for retreating, even if that becomes the rational choice. So commitments, if they do not dissuade the incumbent from resisting, may lead to competitive wars, as in the contest between Kodak and Polaroid in the instant film business.

THE INCUMBENT'S BALANCING ACT

STRATEGIES REGARDING UNOCCUPIED TERRITORY

GENERAL PRINCIPLES FOR ANALYZING COMPETITIVE INTERACTIONS

- *The range of actions that the agent has available.* If a competitor does something completely unanticipated, there has obviously been a failure of analysis.
- *The consequences for the company of the possible combinations of actions by all the relevant competitive actors.* What do the outcomes and payoffs look like for all the parties?
- How the various agents value these consequences, or, in other words, what motivates each agent?

FIGURE 11.2

The matrix (or normal) form of the prisoner's dilemma

TABLE 11.1

Individual and joint payoffs in the prisoner's dilemma game

TABLE 11.2

Individual and joint payoffs in the entry/preemption game

CHAPTER 12

Fear of Not Flying

BLACK HOLE: THE AIRLINE INDUSTRY AND RETURNS TO INVESTORS

The Intelligent Investor, Benjamin Graham wrote that his book might be of use as a warning to those who bought shares in the expectation that the industry would grow.

NO GOLDEN AGE: THE INDUSTRY UNDER GOVERNMENT REGULATION

EVERYONE INTO THE POOL: THE END OF REGULATION

THE INDUSTRY IN 1990

FIGURE 12.1

Operating income margins of United, American, and Delta Airlines, 1975–2000

FIGURE 12.2

Map of the airline industry

KIWI TAKES OFF

Forbes magazine, “Our task is to stay away from their bottom lines.” That meant staying small and unthreatening enough so that it would cost the airlines more to eliminate them—“to swat a fly off their backs,” in Iverson’s terms—than to let them live. The choice of routes was part of this strategy. The Newark-to-Chicago route would cut only minimally into United’s and American’s business. The Newark-to-Atlanta

route would nick Delta; the flight to Orlando would take some business from Delta and Continental. By spreading the pain around, Kiwi minimized the loss to any single competitor. It also reduced its business risk by flying three routes; if any of the major carriers started a fare war to eliminate Kiwi, it would still have two routes unaffected by the competition.

Kiwi also avoided challenging the carriers directly on price. Kiwi pegged its ticket charge to the lowest restricted fare the competition was offering. It did enhance the service. Its tickets were unrestricted and required no advanced purchase. It reconfigured its planes to reduce the number of seats from 170 to 150, putting all passengers in the equivalent of business class. It served hot meals rather than snacks.

It had no substantial budget to promote itself in the public media, so it avoided another direct challenge to the incumbents. Instead, Kiwi executives went directly to its target market, the managers of smaller businesses for whom low prices and superior service made a difference. Iverson and his colleagues made the rounds of Rotary and Kiwanis Club lunches, telling the Kiwi story. Other Kiwis visited travel agents and companies, leaving literature and a good impression. This story of “the little airline that might” caught on, so that even before its first flight, it garnered more than enough press coverage to compensate for its lack of an ad budget.

Kiwi did not poach pilots, flight attendants, or other personnel from the existing airlines. A large part of its reason for being was to put these people back to work in an industry they loved and in a company they thought they could run more intelligently and profitably than the ones that had laid them off. Kiwi believed that it could earn money by having a cost structure much lower than that of the traditional carriers. It leased its planes at a bargain rate because, with so much turmoil in the industry, used planes were a glut on the market. It saved by substituting skillful public relations for expensive advertising. Its real key was supposed to be its lower labor costs. The pilots and attendants were going to earn much less than their peers at the established carriers, yet smile about it. The “can-do” attitude of its employee-owners, who would dispense with the restrictive work rules that burdened the traditional carriers, also helped. No job was beneath a pilot, attendant, or other employee. Pilots as managers could fly planes, if the need arose and a scheduled pilot called in sick. Before it began flying, the company calculated that it could break even if it filled around 50 percent of its seats. Its cost structure was planned to come in at 20 percent lower than United’s per revenue passenger mile. Though this savings was substantial, South-west’s cost were some 18 percent lower still. But lower costs did not present the same kind of frontal challenge to the established airlines that well-advertised lower fares might. Kiwi did not want to arouse the slumbering giants.

KIWI GROUNDED

CHAPTER 13

No Instant Gratification

ELEPHANT AT THE GATES

LAND'S END: THE POLAROID MISSION

FIGURE 13.1

Polaroid's sales and operating income, 1950–75 (\$ million)

FIGURE 13.2

Polaroid's pretax return on invested capital, 1960–75

OVER THE TOP: KODAK DECIDES TO HURDLE THE BARRIERS

* Its operating income in 1975 was nearly \$1.1 billion, ten times larger than Polaroid's. Like Polaroid, Kodak was a charter member of the Nifty Fifty and was extremely well financed. At the end of 1975, it had \$747 million in cash and cash equivalents, versus \$126 million in debt.

Nevertheless, by the mid 1970s, there were unaccustomed pressures on Kodak's management. Annual sales growth of 10 percent was good when inflation was at 1 to 2 percent. It was less satisfactory when inflation ran to 6 percent or more. Kodak was also losing market share in some of the segments, like color print paper, that it had always dominated. As a result, the instant photography market, which was growing at least as fast as Kodak's core business, seemed an attractive target.

FIGURE 13.3

Kodak's sales and operating income, 1950–75 (\$ million)

instant was already taken by the Instamatic, Kodak referred to this project as “rapid-access photography.”

AFTERMATH

FIGURE 13.4

Eastman Kodak and Polaroid pretax return on invested capital, 1970–94

CHAPTER 14

Cooperation without Incarceration

THE VIEW FROM OLYMPUS

OUTCOMES FIRST

FIGURE 14.1

Cooperation and bargaining within the book

- *Maximizing the attainable joint rewards.* This is concentrating first on the size of the pie (fully exploiting joint gains) rather than on how it is divided (getting as big a piece as possible). In the language of bargaining, this means seeking at the start to identify win-win possibilities. Only after these have been exhausted is it time to attend to the trade-offs between bargainers. There is an upper boundary to the set of feasible outcomes, that is, the best of all possible worlds currently attainable. This upper limit is defined as the line beyond which there are no joint actions that might expand the overall pie without requiring sacrifices from some of the participants. Things are as good as they are going to get, and they can't get better without somebody doing worse. Because the full exploitation of these joint gains is the essence of cooperation, we will lay out some of the most important steps firms can take to make their industry as profitable as possible.

- *Dividing the gains in rewards according to the principles of "fairness."* A stable outcome depends on fairness. If cooperation is to be sustained among a group of economic agents over any extended time, then all the participants have to feel that they are being treated fairly in the division of the rewards. Dissatisfaction, especially when buttressed by a justifiable claim of unfairness, will inevitably lead to a breakdown in cooperation. In fact, individual firms will never enter into a cooperative arrangement in the first place if they feel that the rewards they will garner within the arrangement are not commensurate with the value they contribute. We will examine carefully what constitute "fair" divisions of the pie in different cooperative situations. Companies that have a sound concept of fairness conditions should enter cooperative arrangements with a realistic sense of what they can expect to gain, not so low as to allow themselves to be exploited nor so unreasonable as to be disappointed when their unwarranted aspirations are unfulfilled.

OPTIMIZING AN INDUSTRY TO MAXIMIZE OVERALL REWARDS

- Pricing levels across the many subsegments that make up an entire industry
- The level and the location of the industry's production capacity
- Allocation of production to the most efficient facilities
- Cost discipline in the acquisition of resources
- Coordination of distribution and service facilities to reduce overlapping resources and keep costs down
- Organization of research and development to eliminate duplication, to disseminate innovations appropriately, and to provide incentives for continuing improvement in industry operations
- Product line management to eliminate redundancy and fully cover the relevant niche markets
- Coordination of advertising and promotion to enhance the effectiveness of industry-wide promotion while avoiding the clutter of competing and mutually neutralizing messages
- Synchronization of information systems to reduce working capital requirements and ensure that information is reliably disseminated to the relevant operating units
- Rationalization of overhead expenditures to prevent inefficient duplication and to take advantage of economies of scale possibilities
- Joint risk management to reduce financing and other related costs, many related to the fluctuations in individual firm demands that beset every industry

* With each company reigning in its particular niche, the industry will have what is known as effective yield management—in which customers who are willing to pay more for an item will get the opportunity to do so, because their choice resides in a particular niche and they are not tempted to buy a lower-priced alternative in another niche, even if the two purchases look essentially equivalent to someone else.† From a cooperative perspective, price coordination is largely a matter of the effective positioning of firms across industry subsegments.

Managing the capacity of an industry involves more than simply closing plants or other facilities if the market cannot absorb all the product being turned out. It also means ensuring that the facilities that are kept open are the most cost efficient in the business. In an expanding industry, the strategy is to increase capacity of the most efficient firms and those that are most advantageously located. In a declining industry, the goal is to first shut down the highest-cost and worst-situated producers. These choices seem natural enough, what the market might itself do over time in a competitive weeding out of unprofitable operations. In a cooperative environment, the results can be accomplished more quickly and with less pain. If functions like sales and production can be separated from one another, then firms with high production costs may be able to survive as marketing and sales organizations, buying their product from the low-cost or best-situated producers. They have to specialize and excel at what they do, naturally, but there is room for them in a cooperative universe.

Efficient outsourcing, which is another way of describing this separation of functions, is a powerful means for reducing industry-wide costs by channeling production to the lowest-cost firms. When this shifting can be accomplished painlessly, without incurring additional expenses, then there is little else that need be done to minimize costs in the industry. If shifting production is itself costly for one reason or another, then efficient firms may license their production technologies on appropriate terms to their less economical competitors. In either case, costs have been taken out of the supply chain across the entire industry.

If production can be concentrated among a few of the most efficient firms, then competition for resources will also be constrained. In any event, for essentially generic resources, such as generally skilled labor, widely used raw materials such as energy, and financing, no single industry is likely to have a significant impact on their prices. For specialized labor with particular talents, competition within the industry may drive prices upward. But with a small number of bidders, restrained by their cooperative outlook or skilled in deploying prisoner's dilemma strategies to control aggressive tendencies, it should not be difficult to manage competition for resources, at least in theory.

In coordinating distribution and service facilities for efficiency, niches are again the key. Firms that concentrate in specific geographic or product spaces will operate more efficiently than firms that are spread thinly over large areas. Both the distribution and the service provision businesses tend to entail significant fixed costs whose level is determined by the geographic footprint of the relevant market area. These functions

share the cost structure characteristic of natural monopolies—high fixed and low marginal costs with powerful economies of scale that keep a second supplier in a much inferior position.

The boundaries of the natural monopolies, in both physical and product space, extend as far as the economies of scale still operate, but no further. Once a distributor has exhausted all the territory it can serve with its existing infrastructure, for example, it is on a level playing field when it moves further afield. The same situation holds for a service provider, like an information technology maintenance organization. When it needs an entire new set of specialists to service customers with different needs or equipment, it has come to the limits of its economies of scale. But within these boundaries, a cooperative configuration in which certain firms dominate particular areas should be both efficient and stable, since these firms should enjoy competitive advantages over potential entrants, so long as they also benefit from some degree of customer captivity.

Research and development is easier to coordinate on paper than it is in practice. Theoretically, the underlying elements of efficiency are simple to define. Duplicative research activities are to be avoided, meaning that firms should not overlap one another in their research programs. Information should be widely shared, to foster benefits from the spillover value even of research that is tightly focused. Unrestrictive cross-licensing arrangements can broaden the application of research results to the product development efforts of different firms with nonoverlapping specialties. And the levels of research and development expenditures should be set to take into account both the direct benefits to the firms paying the bills and the indirect benefits to other firms in the industry. In a cooperative arrangement, there are going to be external benefits, and they should be considered when funding levels are set. Whether these expenditure levels would be higher or lower than those in a fully competitive industry is impossible to say a priori. The elimination of duplication argues for lower expenditures; wider dissemination of benefits pushes in the opposite direction.

Coordinating product lines and the advertising campaigns are the same kind of tasks in a cooperative industry as they are within an individual firm. There are trade-offs, and a balance has to be struck. On one side are the benefits of offering a full range of products and messages; on the other side are the inevitable losses through cannibalization from competing product lines and promotional campaigns. Each additional product or advertisement may take as much or more from existing business as it adds incrementally to total sales. Among firms in an industry, concentration in subsegments helps to avoid cannibalization, especially when closely related products or territories are in the hands of the same firm. For advertising and the deployment of a sales force, efforts to win business by running ads proclaiming that “our product is better than their product,” or by making direct sales calls on a competitor’s customers, are practices to be avoided.

Coordinating information systems, especially across firms within the same supply chain, is a growing reality that has not been a subject of antitrust enforcement. Similarly, agreement among competitors on common information standards and formats, like MP3 in digital audio or IEEE 802.11x (WiFi) in wireless communications, is widespread and uncontroversial, at least to date, from an antitrust point of view. Everyone regards the Betamax versus VHS battle in videotape, and the costs that contest imposed on firms on both sides and on customers who made the wrong choice, as something to avoid.

*

Overhead efficiencies are often achieved by outsourcing to specialists. ADP, for example, has made a living in several businesses, one of them payroll processing across many industries, another back-office processing for investment companies. It has added value by achieving measurable economies of scale from handling the mass of transactions supplied to it by many firms which, had they decided to keep this function in-house, would have nowhere near the volume to match ADP’s costs. In some cases, these services are provided not by pure third parties but by leading firms within the industry, like large banks that process credit card and other transactions for smaller banks. These economies are not difficult to identify in theory, nor have they been difficult to achieve in practice, even without a fully cooperative organization of functions.

Finally, there is the amorphous but crucial question of the distribution of risk. The insurance industry exists to shift some kinds of risks from individuals and firms to companies specializing in accepting risk at a price. But there are many kinds of risks that companies face, not all of them insurable by traditional methods. All industries face fluctuations in demand for their offerings. Price wars often occur when demand shrinks. They are a natural result of firms responding in their own interests, but like all price wars, they make everyone worse off, especially when there is less business to go around. Increases in capacity unwarranted by

additional business create their own imbalance between supply and demand. In both cases, price and capacity coordination require competitive restraint to minimize damage and control risk.

Fluctuations in input prices, either locally or globally, have traditionally been automatically smoothed out with contracts that incorporate cost sharing between suppliers and customers and across firms in the industry that are differentially affected by such changes. More recently, the same type of insurance has been provided by hedging—the use of derivative contracts to shift risk from one party to another. In a coordinated industry, arrangements of both kinds would be widespread.

From a strategic perspective, a detailed and comprehensive picture of what the industry would look like in its most effective configuration serves as a guide to the kind of cooperative arrangements that a firm ought to pursue, through explicit negotiations or other means. It also establishes goals that the company's management should set for itself. The examples we present in the following chapter reveal how far a fully cooperative approach may take an industry. But even where extensive cooperation does not seem practical, a picture of the industry from a cooperative perspective helps to define the strengths of a particular company. The roles that the company would play within a cooperative configuration, and the market positions it would occupy, highlight the specific competences that the company brings to the industry and thus the areas in which it should focus its efforts. Only after it has made these decisions is it time to turn to the question of what rewards it might reasonably expect to earn from these focused activities.

UTILIZING “FAIRNESS” PRINCIPLES TO DIVIDE THE SPOILS WHILE SUSTAINING COOPERATION

symmetry to describe a second fairness condition. Under the principles of symmetry, if all the legitimate claimants to the benefits of joint cooperation, that is, all those enjoying competitive advantages and therefore not forced to cooperate by competitive pressure, look essentially the same, then they should divide the benefits of cooperation equally. Like individual rationality, the symmetry condition has to be satisfied in cases where it applies in order for cooperation to be sustained successfully over time. If, among essentially identical cooperating firms, some of them consistently appropriate a disproportionate share of the benefits of cooperation, then the firms that have been shortchanged are going to be dissatisfied, and legitimately so. Firms with authentic grievances will not cooperate indefinitely. The companies that have been successful in grabbing more than their share of the spoils may do well in the short run, but over time their greed will undermine cooperation, to the detriment of everyone. Mutual recognition of the force of the symmetry condition—how it is crucial to sustaining a cooperative equilibrium—should help forestall dysfunctional wrangling over sharing the gains.

If two firms in an industry both enjoy competitive advantages, cooperation requires that both participate. Then, if the benefits of cooperation can be shared between them so that each dollar of benefit surrendered by one firm is transferred to the other one, the division of the benefits should be equal. Regardless of any differential in size, power, or other important characteristics of the firms, the benefits of cooperation—the total returns earned that exceed the sum of their individual noncooperation returns—depend equally on both firms, and both firms have equal access to them. The firms are equal in that each is essential for there to be any benefits of cooperation, and therefore, according to the symmetry condition, they ought to expect to share in them equally. If either makes a determined effort to seize more than an equal share, that move will ultimately undermine the cooperation between them, hurting them both. As in so many other areas of business strategy, a calculated restraint on aggression is essential to long-term success.

The situation that most commonly meets these symmetry criteria in practice occurs when there are

competitive advantages in some links along a value chain that runs from raw material producers to end user suppliers. Firms in subsegments without competitive advantage should earn returns on investment just equal to their long-term costs of capital. Firms enjoying exclusive competitive advantages within distinct subsegments must cooperate with one another to maximize overall profitability. They can then divide these profits seamlessly by varying the prices charged to downstream segments. Lower prices charged by an upstream monopolist that reduce its revenue and profit by \$100,000 per month should add an identical amount to the revenues and profits of the downstream monopolist, given that prices to the end user and the quantity sold remain at their cooperatively determined optimal levels.

Suppose that the total economic profit from the final product offering is \$10 million per month at the maximum. The mechanics of the transactions between the segments allow this amount to be divided up in any way between two or more advantaged firms supplying constituent parts of the final product. They accomplish this transfer by varying the price at which they hand off their output to downstream firms. In practice, the individual rationality condition will place constraints on how the division actually works. Suppose that if cooperation breaks down, the upstream firm will earn \$2 million in economic profit, the downstream firm \$4 million. The benefit of cooperation of \$4 million ($10 - 2 - 4$) depends equally on both firms. Thus, above the threat point, they have equal access to and an equal role in the creation of this benefit. Symmetry requires that they share the \$4 million equally, leaving the upstream firm with a total of \$4 million in economic profit ($2 + 2$) and the downstream firm \$6 million ($4 + 2$). Both firms, having an interest in sustaining mutually beneficial cooperation, should independently seek to reach such a “fair” outcome. Otherwise, either one may decide that it is being treated unfairly and might take some aggressive action which would lead to a breakdown of cooperation. The breakdown would have adverse consequences for both firms.

This principle applies in cases where there are more than two firms serving as complementary suppliers along a value chain. If these companies want cooperation to be sustained, then there has to be a mutually satisfactory division of its benefits. Microsoft and Intel have avoided explicit competition over the cooperative benefits in the PC industry, based on the principle of equality as measured by threat point returns. To date, Microsoft has reaped a larger share of total industry profits than Intel, because it has had virtually no competition whereas Intel has had AMD and other potential CPU makers at its heels. This arrangement may change should Microsoft encounter a serious threat to its dominance, perhaps from Linux. By contrast, in a case we describe in the next chapter, Nintendo’s aggressive attempt to garner a disproportionate share of the video game industry’s profits left other participants discontented. Their dissatisfaction created an opening for Nintendo’s competitors, who moved in and undermined its position.

linear invariance for this version of the fairness requirement. It works by assigning shares of a cooperatively exploited horizontal market in proportion to the cooperating firms’ relative economic positions—to each his own, in other words. In the next chapter, we discuss a declining industry with chronic excess capacity. The participants managed to sustain a profitable cooperative arrangement among themselves over a long period by adhering to the linear invariance application of the fairness principle. It can serve as a model, to those many industries beset by ruinous competition, of what cooperation, coupled with a mutually acceptable “fair” division of industry returns, can achieve, as measured by industry profitability.*

PURELY HYPOTHETICAL?

CHAPTER 15

Cooperation

HOW TO BREAK A VIRTUOUS CIRCLE: GAMES NINTENDO PLAYED

* Nintendo itself contracted out the manufacturing of the game cartridges to Ricoh, paying roughly \$4 per cartridge. The \$10 margin between the \$14 it charged and the money it paid Ricoh went to Nintendo. When the original six licenses expired in 1989, they were reissued with the manufacturing clause included. Some of the licensees grumbled, but they stayed with Nintendo. There was nowhere else to go.

Nintendo further controlled the game writers by limiting the number of titles they could produce in any year to five. It tested them for quality and regulated the content; it would not license games that it regarded as too violent or sexually suggestive. And as part of the license, the game writers could not offer games for other video console systems for two years. They were locked in to Nintendo. Given the overwhelming market share that Nintendo commanded, they virtually had no choice. It was write for Nintendo with the prospects of producing a few profitable hits, or write for the other consoles and live in a universe competing for the 10 percent of the market Nintendo did not own.

Nintendo was equally dominant in its relationship with game retailers. When Nintendo had initially tried to sell its game console into the U.S. market in 1985, toy retailers were unresponsive. They had been burned with the precipitous decline of the earlier-generation game machines, and may still have been trying to dispose of their unsold inventory of Atari VCS systems. Nintendo decided to change the design of the machine and distribute it through electronics retailers. Even then, it needed to sell them on consignment, charging stores only for the units they actually sold. But the system quickly became popular, and Nintendo moved from being a petitioner to a powerful vendor calling the shots.

Even retail giants like Wal-Mart, Kmart, and Toys “R” Us had to pay for their shipments virtually upon receipt, rather than using the extended terms common in the toy industry. Wal-Mart sold Nintendo systems exclusively, and all the retailers adhered to Nintendo’s suggested retail pricing for systems and game cartridges. Nintendo insisted that its retailers establish prominent Nintendo game centers in their stores, and they readily complied. Because Nintendo actually shipped fewer cartridges than the retailers ordered, and fewer than the customers wanted, they could reduce allocations to any of the merchants who would not play by Nintendo’s rules.

Nintendo’s success and its treatment of retailers and game writers drew critics, including the head of the House Subcommittee on Antitrust, Deregulations, and Privatization. In 1989, he asked the Justice Department to investigate some of the company’s practices. Two years later, Nintendo signed a consent decree with the Federal Trade Commission and some states’ attorneys general agreeing to stop fixing retail prices. But its dominance among retailers and game writers was largely unaffected. There were structural reasons that explained its continuing strength.

By the late 1980s, the shape of the video game industry had stabilized in the form shown in figure 15.1. The game console producers were at the center of the industry. They designed, distributed, and promoted the machines on which the games are played. They sometimes did the manufacturing themselves, assembling

them from purchased chips and other components, but just as frequently, like Nintendo, they subcontracted out manufacturing. They produced some of their own games, but these constituted a relatively small fraction of the games available.

FIGURE 15.1

Map of the video game industry, late 1980s

*

Nintendo did not play well with others. It did not share industry returns fairly. The terms it imposed on game writers and distributors helped to make it rich, but they did not endear it to its neighbors in the value chain. Nintendo treated the game writers particularly poorly. In the typical game cartridge, there was roughly \$26 of margin between the wholesale price of \$30 and the manufacturing cost of \$4. Nintendo took \$16, or 60 percent, for itself. The game writers, who incurred all the costs and risks of development and distribution, received \$10, or less than 40 percent.

Nintendo upset the game writers in other ways. It limited them to five new titles per year. This restriction protected Nintendo from becoming too dependent on one software provider and ensured that no game writer could become successful enough to consider creating its own console system. But it frustrated the game writers, especially the most talented ones, and limited their potential returns. There was also the censoring of content that limited violence and sexuality. And Nintendo persistently shipped fewer console and game units than retailers ordered during the crucial Christmas season. This imposed shortage may have enhanced the Nintendo mystique, but it cut into the sales and profits of the game writers and retailers, who were also alienated by Nintendo's aggressive payment schedules and demands for in-store displays.

Sega brought out a 16-bit console in Japan in 1988 with better graphics and sound than the 8-bit Nintendo standard. Still, Sega initially found it difficult to induce outside developers to produce games for the system. Sega itself adapted some of the games it had created for the arcade market, but sales remained slow. The company did not back off, however. It introduced the machine in the United States in 1989, selling it for \$190. Games retailed between \$40 and \$70. Sega targeted these games at the content niches left uncovered by Nintendo's censoring policy. Still, like Nintendo in its early days, Sega had a difficult time selling the machines. Whereas Nintendo had Wal-Mart and Toys "R" Us as its primary retailers, Sega had to rely on software stores like Babbage's.

But its fortunes changed in 1991, when a new executive decided to package both the console and its popular game Sonic the Hedgehog for \$150. That did the trick. The Sega machine took off, and game writers rushed to supply product for it. Nintendo had delayed introducing its own 16-bit system, not wanting to cut into its thriving 8-bit empire. It followed Sega into the 16-bit market, but not in time to prevent the entrant from gaining enough scale so that it had no problems securing games or distribution.

Between 1992 and 1994, the two companies battled for leadership, using all the weapons in a marketer's

arsenal, including deep price cuts and heavy advertising. If it were a video game, one newspaper suggested, it would be called “Marketing Kombat,” an allusion to the wildly popular game Mortal Kombat. Each company claimed to be the market leader, but it didn’t matter who had won the larger share. Nintendo was the clear loser. Hand-to-hand combat in the video game trenches undermined the profitability it had enjoyed when it reigned supreme in the center of the virtuous circle. Sony’s entrance with a 32-bit machine in 1995 just raised the competition to a higher megahertz. In that year, there were eight or nine companies with 32-bit or better consoles vying for a piece of the action.

Nintendo’s dominant position was undercut by its own decisions. It chose to milk its 8-bit franchise rather than immediately respond to Sega in the 16-bit world. Also, its policy of keeping shipments below demand inadvertently handed customers to Sega. But even before Sega’s Sonic the Hedgehog showed up, Nintendo had prepared the ground for Sega and subsequent competitors. Once Sega had established its credibility, the retailers and especially the game writers rushed to its support. It was the game writers who really undermined Nintendo. Conventional wisdom in the video game industry is that the distinctiveness of the product lies in the software. To cite one particular ad, “It’s in the game.” By alienating the game writers, Nintendo gave “the game” to Sega and Sony.

There is no certainty that a cooperative strategy would have prevented the software firms from signing up to develop games for Sega and Sony. All we know for certain is as soon as Sega showed a little traction with its 16-bit player, they rushed to supply games for its system. The developers were delighted to have multiple console makers in the market, even though it cost more to turn out games for different platforms. They were able to negotiate better deals with the hardware companies. In fact, power had shifted from Nintendo to the developers. “In the game industry,” according to a *BusinessWeek* story, “content rules. No matter how technologically advanced a console may be, it’s doomed without enticing game titles.” Now Sega, Sony, Nintendo, and ultimately Microsoft were the supplicants, offering the developers better terms on the costs of producing a CD (PlayStation machines used CDs rather than game cartridges) and reduced royalty charges. They also began to help with development expenses. Because of the more complex graphics now demanded, development could cost up to \$10 million per game, twenty times the average when Nintendo’s 8-bit standard held sway.

Nintendo went from a company with a dominant position in an industry and a high return on capital to one competitor among many with at best ordinary returns on investment, in large part because it did not play well with others. It claimed so much of the industry profit for itself that both developers and retailers were ready to support new consoler makers. To see how savvy companies can manage to do well by working together, we look next at a grubbier industry with nothing like the glamour or future of electronic games—the providers of lead-based additives for gasoline.

LEAD INTO GOLD: GETTING ALONG IN THE GASOLINE ADDITIVE BUSINESS

- Its product is a commodity
- There is substantial overcapacity
- Demand is guaranteed to decline rapidly
- It gets bad press and bad marks from government agencies and public interest groups

- *Uniform pricing.* Prices were quoted to include both the cost of the chemicals and the cost of delivery. By including transportation in the quoted price, the suppliers prevented themselves from offering a hidden discount with a lower delivery charge.
- *Advance notice of price changes.* When one of the suppliers wanted to change—raise—the list price of the additive, the contracts called for it to give its customers thirty days' notice, during which time they could order more supply at the existing price. Until 1977, the additive manufacturers issued press releases to announce these changes, but then ceased on advice of counsel. The refiners tried to induce other suppliers not to follow the leader in raising prices, but almost always to no avail. There were thirty price increases in the five years starting in 1974, and all of them held. Ethyl and DuPont were the initiators, with PPG and Nalco following suit. The solidarity continued even after the press releases stopped. The thirty-day advance notice of price increases meant that any supplier wishing to maintain the lower price had to signal that intention thirty days before the increases by other firms went into effect. If it gave the signal, the other firms would simply rescind the announced price increases and the deviant firm's intransigence would yield no benefit, other than to the customers.
- *Most-favored-nation pricing.* Applied not to import duties but to the actual prices charged for the chemicals, this policy assured every customer that it was getting the best price available. More to the point, it put the suppliers in a self-imposed straitjacket, preventing them from offering any special discount to a particular customer on the grounds that they would have to give the same break to everyone. Ethyl and DuPont put the clause in their contracts, and Nalco followed suit on many of its own.

TABLE 15.1

Capacity, production, and sales of lead-based additives, 1977 (millions of pounds)

- The thirty-day advance notice of list price changes
 - Issuing press releases about these changes
 - Selling the product on a uniform delivered price basis
 - Using most-favored-nation pricing clauses in contracts
-
- Announcing price changes before a time agreed upon between the company and the purchaser
 - Offering a single price to include delivery regardless of destination
 - Guaranteeing customers that they would receive the lowest price available to any customer

TABLE 15.2

Octel Corporation sales and operating income by segment, 2000–2002 (\$ million)

KEEP YOUR DISTANCE: SOTHEBY'S AND CHRISTIE'S TURN COOPERATION INTO A GENUINE PRISONER'S DILEMMA

FIGURE 15.2

Sotheby's revenue and operating income, 1987–2002 (\$million)

Observer commented about the prosecution, “They needed Mr. Davidge’s notes and testimony to win conditional amnesty from the U.S. government, under a controversial program in which the crook who squeals first in such a conspiracy gets off scot-free.” Though scot-free may not always be part of the deal, the crook who squeals first always does better; otherwise, why would he or she squeal? The more interesting question is what alternatives the two auction houses had to this illegal collusion as a way of ending a painful war over price and perks.

Christie’s and Sotheby’s, which together shared some 90–95 percent of the high-end auction market, should have been able to benefit from economies of scale and significant customer captivity. Smaller and newer auction houses had made no inroads into their market share for many years. Also, at least until they entered their period of intense competition, both organizations were highly profitable. The key to continued success was restraint on competition, which required primarily that they stay out of each other’s way. Geographically, it was not really possible for two firms like these to divvy up territory. Each had major establishments in London and New York, as befits their British ancestry and the strength of the market in the United States. They also had satellite offices, and in some cases selling rooms, in major cities around the world. But these locations were more for acquiring material than for auctioning it. For all expensive items, buyers come to the auction in the most cosmopolitan locations. So Sotheby’s and Christie’s both needed a presence in New York and London. In fact, they benefited from running their auctions almost simultaneously, because more buyers were enticed to make the trip to town.

With geography an unwieldy knife with which to slice the pie, field specialization—product market niches—remained the obvious choice by which to divide the business. Instead of selling everything from Cycladic figures and ancient Sumerian pottery to paintings by Roy Lichtenstein and Keith Haring, each house could have concentrated on particular periods and types of art. They could also have selected specialties from the broad range of other objects offered for sale, like antique Persian carpets, jewelry, and clocks and barometric measuring devices from the age of Louis XIV.

The auction houses handled such a variety of goods that, in theory at least, staking out a set of nonconflicting claims to territory should have been fairly simple. Each field required overhead to support it, particularly the experts who validate claims about authenticity, research provenance, and estimate a value for the item. If Sotheby’s had become the place to go for eighteenth-century French paintings and decorative arts, and Christie’s had emerged as the dominant firm for color field abstraction, then sellers would have had to choose an auction house on the basis of what they were trying to sell. A further advantage of such specialization would have been a significant reduction in overall overhead costs, since substantial duplication of effort would have been eliminated.

There were two problems that would have made this type of division more difficult to accomplish in practice than on paper. First, estate sales may encompass a variety of works that don’t fit neatly into any single auction house’s specialization. Second, while Dutch master paintings from the seventeenth century may bring more at auction than Postimpressionist works, there are many fewer of them outside of museums. So a

fair division of the playing field needed to focus on the value to the auction house of a piece of the turf, not its attractiveness on any other basis. Despite these difficulties, it may have been possible for the firms to work out an informal and tacit arrangement without colluding directly.

In 1992, before the first reported meetings of Taubman and Tennant, Sotheby's announced an increase in fees charged to buyers, and Christie's came along after a decorous delay of seven weeks. Could Sotheby's have also announced that it was deemphasizing its Egyptian and ancient Middle Eastern departments, and concentrating instead on Greek and Roman antiquities and the period to AD 1200 in Europe? Christie's might have announced, some time later, that it was going to strengthen its Egyptian department and also its expertise in the early Renaissance. And, over time and more subtly than we are describing here, the two might have divided up the map of the fine art and object markets like the European imperialists carved up Africa in the nineteenth century, hopefully to better effect. The estate sale issue would have been handled naturally, leaving it up to the executors to decide among the auction houses on the basis of their respective strengths. And nothing says that the estate property could not have been sold in a series of auctions.

CHAPTER 16

Valuation from a Strategic Perspective

STRATEGY AND VALUE

THE VALUE OF NET PRESENT VALUE

$CF_{t+1} \div (R - G)$

where CF_{t+1} is the net cash flow in the first postterminal year, R is the cost of capital beyond the terminal year, and G is the annual growth rate for the same period (table 16.1).

Since this terminal value measure consists of a cash flow figure (CF_{t+1}) multiplied by a valuation factor ($1/(R - G)$), it is actually a version of the factor-based approach (using a P/E) just described. While it does have the advantage of making explicit the assumptions underlying the valuation factor, a closer look reveals just how inexact a factor-based approach can be.

TABLE 16.1
Cash flows and terminal value

* This is a simple calculation. But if the estimates of the cost of capital and the growth rate for these years are each off by 1 percent, which is not a large error, then the terminal value could be as high as \$6 billion ($\$120 \text{ million} \div (0.09 - 0.07)$) or as low as \$2 billion ($\$120 \text{ million} \div (0.11 - 0.05)$). This three-to-one range of plausible terminal values represents the level of uncertainty that applies to these calculations in practice.

This wide range of plausible values has unfortunate implications for the use of NPV calculations in making investment decisions. Experience indicates that, except for the simplest projects focused on cost reduction, it is the terminal values that typically account for by far the greatest portion of any project’s net present value. With these terminal value calculations so imprecise, the reliability of the overall NPV calculation is seriously compromised, as are the investment decisions based on these estimates.

The problem is not the method of calculating terminal values. No better methods exist. The problem is intrinsic to the NPV approach. An NPV calculation takes reliable information, usually near-term cash flow estimates, and combines that with unreliable information, which are the estimated cash flows from a distant future that make up the terminal value. Then, after applying discount rates, it simply adds all these cash flows together. It is an axiom of engineering that combining good information with bad information does not produce information of average quality. The result is bad information, because the errors from the bad information dominate the whole calculation. A fundamental problem with the NPV approach is that it does not effectively segregate good from bad information about the value of the project.

A second practical shortcoming of the NPV approach to valuation is one to which we have already alluded. A valuation procedure is a method for moving from assumptions about the future to a calculated value of a project which unfolds over the course of that future. Ideally, it should be based on assumptions

about the future that can reliably and sensibly be made today. Otherwise, the value calculation will be of little use.

For example, a sensible opinion can be formed about whether the automobile industry will still be economically viable twenty years from today. We can also form reasonable views of whether Ford or any company in the industry is likely, twenty years in the future, to enjoy significant competitive advantages over the other automobile manufacturers (not likely). For a company such as Microsoft, which does enjoy significant competitive advantages today, we can think reasonably about the chances that these advantages will survive the next twenty years, whether they will increase, decrease, or continue as is.

But it is hard to forecast exactly how fast Ford's sales will grow over the next two decades, what its profit margins will be, or how much it will be required to invest per dollar of revenue. Likewise, for a company like Microsoft, projecting sales growth and profit margins is difficult for its current products and even more difficult for the new products it will introduce over that time. Yet these are the assumptions that have to be made to arrive at a value based on NPV analysis.

It is possible to make strategic assumptions about competitive advantages with more confidence, but these are not readily incorporated into an NPV calculation. Taken together, the NPV approach's reliance on assumptions that are difficult to make and its omission of assumptions that can be made with more certainty are a second major shortcoming.

A third difficulty with the NPV approach is that it discards much information that is relevant to the calculation of the economic value of a company. There are two parts to value creation. The first is the resources that are devoted to the value creation process, the assets that the company employs. The second part is the distributable cash flows that are created by these invested resources. The NPV approach focuses exclusively on the cash flows. In a competitive environment, the two will be closely related. The assets will earn ordinary—cost of capital—returns. Therefore, knowing the resource levels will tell a good deal about likely future cash flows.

But if the resources are not used effectively, then the value of the cash flows they generate will fall short of the dollars invested. There will always be other firms that can do better with similar resources, and competition from these firms will inevitably produce losses for the inefficient user. Even firms efficient in their use of resources may not create excess value in their cash flows, so long as competition from equally efficient producers whittles away those excess returns. The crucial point is that in a competitive environment, resource requirements carry important implications about likely future cash flows, and the NPV approach takes no advantage of this information.

All these criticisms of NPV would be immaterial if there were no alternative approach to valuation that met these objections. But in fact there is such an alternative. It does segregate reliable from unreliable information; it does incorporate strategic judgments about the current and future state of competition in the industry; it does pay attention to a company's resources. Because this approach has been developed and applied by investors in marketable securities, starting with Benjamin Graham and continuing through Warren Buffett and a host of others, we will describe this alternative methodology in the context of valuing a company as a whole. Later we will show how the same basic valuation approach applies to other kinds of investment projects.

A STRATEGIC APPROACH TO VALUATION

* These can be calculated by developing scenarios for producing them efficiently. For example, the cost of a product portfolio is the R&D expenditure necessary to produce from scratch and make ready for sale an equivalent set of products. There may be private market transactions, in which a sophisticated buyer purchases intangibles for cash, that can be helpful in determining the reproduction value. For example, when a record company buys an independent label with its stable of recording artists, or when a major drug company buys a start-up firm with a promising product, or when a cable company buys a local cable system

with its customer contracts, a reproduction value has been put on these intangible assets.

Calculating the reproduction value of the assets of a firm in a viable business, just like establishing the liquidation value, does not require projections into the future. The necessary information is all currently available. Also, in working down the balance sheet, the estimates of value move from the most certain (cash and marketable securities) to the least certain (the intangibles). These distinctions are important; a valuation in which intangibles like brand equity are a significant part of the whole is less trustworthy than one in which cash, receivables, and general-purpose PPE represent most of the total value. Finally, assets further down the balance sheet require more industry expertise to calculate their reproduction values. But this expertise is no greater than what is necessary to make any informed investment decision in the industry in question.

The merit of incorporating strategic analysis into the valuation process becomes apparent when we look at a company in an industry without incumbent competitive advantages. Suppose, as an example, that the reproduction value of Ford's assets is \$40 billion. These assets are currently generating a cash flow of \$8 billion per year. At a cost of capital of 10 percent, usually a reasonable assumption, the cash flow is worth \$80 billion, twice the reproduction costs of the assets. This discrepancy is an open invitation. Under these conditions, an entrant into Ford's market or, more likely, another auto company seeking to expand, can create \$80 billion in value for a \$40 billion investment. With no barriers to stand in its way, the entrant makes the investment and moves in. But now, with more competition, the earnings begin to decline, both for Ford and for the newcomer. If they drop to \$6 billion for Ford, reducing the value of the investment to \$60 billion, that is still sufficiently enticing for other firms to join. Only when the value of future earnings has been driven down to the reproduction cost of \$40 billion will the process of entry cease and the profitability of the industry stabilize. In industries with no barriers to entry, competition will eventually make the reproduction value of the assets equal to the value of future earnings.

earnings power of a company, the amount of cash that it can distribute to its owners each year without impairing the productive assets of the firm.

Earnings power is an annual flow of funds. To convert it into *earnings power value* (EPV), which is the present value of all those flows in the future, the first step is to divide earnings power by the cost of capital. The cost of capital should be calculated as the weighted average of the cost of debt capital, after tax, and the cost of equity capital. It represents what the firm has to pay to investors each year to attract the necessary investment voluntarily. The weighted average cost is the after-tax cost of debt capital times the fraction of capital raised through debt plus the after-tax cost of equity capital times the fraction raised through equity. The sustainable ratio of debt to total capital should be the lower of two figures: either the amount of debt the firm can carry on average without seriously impairing its operating performance, or the firm's historical average debt level. Because of the lower cost of debt financing due to the tax savings, the preferred figure is the first one. But if the management does not care to capture this advantage now or in the foreseeable future, then management's actual behavior is the relevant figure for calculating the average cost of capital.*

To illustrate the process, consider a company with reported after-tax current earnings of \$100 million. After adjustments, this figure is raised to an after-tax earnings power of \$135 million per year. The company is financed one-third by debt and two-thirds by equity. It pays 9 percent interest on its debt. The cost of its equity is 10.8 percent (that is the observed return on equity investments of comparable risk). With a tax rate of 40 percent, the weighted average cost of capital (R) is 9 percent:

$$R = (1/3 \times [9\% \times (1 - 40\%)]) + (2/3 \times 10.8\%) = 9\%$$

With a cost of capital of 9 percent, the earnings power value of the firm is \$1.5 billion:

$$EPV = \$135 \text{ million} \div 0.09 = \$1.500 \text{ million}$$

This represents the value of the ongoing operations of the firm, assuming no growth or deterioration in the

future.

*
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The EPV calculated here is that of the firm as a whole. The value of the equity is this total value less the value of the firm’s outstanding debt. Using the asset approach, the comparable value of the entire firm is the value of the assets, either liquidation or reproduction value, less the nondebt liabilities, such as accounts payable and accruals. The value of the equity is this figure minus the debt liabilities. The reason for focusing on the overall firm rather than just the equity value is that the estimate for the entire firm is more reliable, especially when the firm has a high level of debt.

Because growth has been excluded from this valuation, and because it uses current cash flow, not cash flow five to ten years into the future, the EPV is far less subject to error than valuations dependent on establishing a terminal value some eight or ten years in the future. A 1 percent error in estimating the firm’s cost of capital will lead to a range of EPV values from \$1,700 million, if the cost of capital is 8 percent, to \$1,350 million if it is 10 percent. This is much narrower than the potential range of error using the terminal value estimate which includes a rate of growth.

However, if the concern is only with the equity value of the firm, then those errors can be greatly magnified. Suppose that the error range on the EPV of the firm as a whole is plus or minus \$150 million around the mean estimate of \$1,500 million. This is plus or minus 10 percent, a small number as these things go. But if the firm has debt of \$1,200 million, whose value is relatively certain, then the entire \$150 million error applies to the value of the equity, whose base level is now \$300 million (\$1,500 million less \$1,200 million in debt). This is an error range of plus or minus 50 percent, which makes the estimate highly uncertain.

To understand fully the effect of leverage on risk, it is best to start with the overall enterprise value and then adjust from there to see the impact on the value of the equity portion. In what follows, therefore, the asset values and EPV will refer to the enterprise as a whole.

TABLE 16.2
Calculating the franchise margin (\$ million)

Asset value
\$ 1,200
Sales
\$ 1,000
Earnings power
\$ 240
Cost of capital
10%
EPV (earnings power divided by cost of capital)
\$ 2,400
Tax rate
40%
Competitive earnings
\$ 120
Franchise earnings (earnings power minus competitive earnings)
\$ 120
Pretax franchise earnings ($\$120 \div (1 - 40\%)$)
\$ 200
Franchise margin on sales ($\$200 \div \$1,000$)
20%

To justify an EPV of \$2,400 million, the firm must benefit from a combination of competitive advantages in higher prices due to customer captivity and lower costs due to either proprietary technology or economies of scale equal to 20 percent of sales. The valuation decision—whether to use the value of the assets or the value of the earnings power—comes down to a strategic judgment of whether the enterprise enjoys competitive advantages of this magnitude. Being able to compare the asset value to the EPV allows us to place the focus of the valuation decision directly and simply in the strategic arena, which is where it belongs.

The second possibility stemming from the comparison of asset value to EPV is that they are approximately equal. This is what would be expected in the majority of industries where no firm enjoys significant competitive advantages. If an analysis confirms that market share is unstable, that no firms are earning extraordinary returns on capital, and that there are no identifiable sources of competitive advantage, then we have an uncontested estimate of value, based on both the resource and the income method of valuation, confirmed by strategic judgment. This figure is a much more reliable fix on the value of a firm than an NPV analysis alone.

The final possibility is that the asset value exceeds the EPV of the enterprise. Provided that both valuations have been done properly, and that, for instance, the reproduction value of the assets was not used if the liquidation value was called for, then the only possible source of this discrepancy is deficient management. The management is not producing returns commensurate with the value of the assets being put to work. In this case, the strategic approach points to the critical question for evaluating the company, namely, what can be done either to improve or to replace management. The NPV approach is not likely to raise this issue, which points to a further shortcoming of this standard method of valuation.

FIGURE 16.1

Three tranches of value

CONCLUDING THOUGHTS ON VALUATION

* Their successful records over long periods of time is part of the argument in favor of this method. For securities investments, there is an additional dimension that these investors bring to the process. When they have identified a stock that their valuation indicates is selling for less than its actual economic value, they require a sufficient *margin of safety*, in Benjamin Graham's famous phrase, which is the size of the gap between the market price and the fundamental value. For a company in a competitive industry, that margin has to lie in the difference between the market price and the asset value. For companies that do enjoy a sustainable competitive advantage, the difference may lie between the market price and the EPV, certainly if the market price is not more than the asset value. In this situation, the value of the franchise would be the margin of safety. And for those rare companies that can grow profitably, the value of the growth might provide the margin, so long as the shares are selling for no more than the value of the current earnings power. So strategic analysis is at the core of their investment method.

FROM COMPANIES TO PROJECTS

CHAPTER 17

Corporate Development and Strategy

MERGERS AND ACQUISITIONS

FIGURE 17.1

Types of mergers and acquisitions

* At the plant level, the operating costs of the target company plants are brought down, but this positive development is offset by a coincident weakening in the operating performance of the acquiring company's plants. Given this history, checkered at best, it is important for evaluating potential acquisitions to identify those particular strategic factors that favor success.

Reviewing the diversification strategy of thirty-three large American companies in the period 1950–86, Michael Porter found that these firms had divested many more of their acquisitions than they retained. From the combinations that worked, he identified three traits as essential. First, the target company had to be in an “attractive” (profitable, fast-growing, etc.) industry. Second, there had to exist synergies between the operations of the acquirer and the target. Third, the acquisition premium could be no more than these synergies were worth.

In practice, the requirements for a successful acquisition are actually more clear-cut than even this short list suggests. The last criterion is a matter of simple arithmetic. Obviously, if an acquirer pays too high a premium, it is going to destroy rather than create value for its shareholders. The question is how to calculate the value of synergies that are likely to be realized in order to judge whether the premium is excessive. The first two criteria, on closer examination, are so intimately connected as to amount to almost the same thing.

Our contention in this book is that the definition of an “attractive” industry depends completely on one factor: the existence of incumbent competitive advantages or, using the alternative term, barriers to entry. Without these barriers, the process of entry by outsiders or expansion by incumbents will eliminate any returns above an industry's cost of capital. Firms with exceptional operating efficiency may produce extraordinary returns for a time, provided management stays focused and intact. But for an industry to be “attractive,” so that even companies with merely good as opposed to stellar management can earn “attractive” returns, it needs to be protected by barriers to entry, with the incumbent firms enjoying competitive advantages.

*

*

Many mergers and acquisitions are also justified by the claim that the superior management of the acquiring company will decisively improve the operations of the target company. This claim rests on two assumptions, both related to costs. The first is that payroll costs will be lowered simply by getting rid of the inferior managers of the target company. Either the managers from the acquiring company will take up these jobs without an increase in pay, or fewer and more capable people will be able to handle the tasks at a lower cost of employment.

The second assumption is that there will be additional cost reductions from improved operations in the target firm. Other kinds of improvement are less likely. Marketing expertise tends to be industry-specific. For the acquiring company to have the skills to improve marketing at the target, it is likely to be in the same or a closely related business. But if this were the case, why did it need to make the acquisition in the first place? It could have reproduced the target company's marketing efforts itself without the trouble of acquisition and reorganization. The benefits from better management will be largely confined to making the operations of the target firm better or eliminating some of them entirely. With fewer personal ties, the acquiring company may have an easier time in cutting back on employees. The payoff will be in cost reductions, which should be measurable.

An additional note of caution must be raised about the value of mergers and acquisitions that are to be justified by spreading "good management" onto the target company's operations. Sometimes improvements in productivity at the target company, though real enough, come at the expense of deterioration in productivity in the operations of the acquirer, eliminating any net gain. The attention of management, especially good management, is a scarce resource. It does not simply expand to cover all the operations for which it is needed. Deploying that resource to a target firm means diverting it from the acquirer's own operations. It is only the net improvement in overall performance that should be used to justify an acquisition. Also, the acquisition process itself, which adds nothing of value to the combined firm's operations, is an enormous devourer of management attention.

Some potential revenue gains may be expected from an intelligent acquisition. First, the increase in scale or efficiency that may come with the merger may make some marketing efforts profitable that previously were uneconomic. Still, these new efforts are unlikely to be of more than minor value. If they were significant, they would have already been undertaken, as they would have been profitable even without the benefits of economies of scale or increased efficiency. Therefore, the additional profit from these marginal efforts will be small even though the added revenue may be substantial. Second, if the merger eliminates a competitor, especially a troublesome, noncooperating competitor, it may improve industry price discipline. However, these are precisely the acquisitions most likely to be contested by the antitrust regulators. Also, it makes more sense for a potential acquirer to let some other industry player incur the expense of the takeover premium than to play hero itself. There is a strong incentive to be a "free rider" and watch from the sidelines.

VENTURE CAPITAL

* In practice, only the second of these considerations should count for much. By their very nature, venture capital investments take place in new or underdeveloped markets without entrenched, dominant competitors. Proprietary technologies, the venture investors hope, will be developed as the venture progresses. But when they start out, almost by definition, no firms have access to such technologies. Developing captive customers may be the goal of the venture, but at inception the customers in these nascent markets are up for grabs. Finally, though it may hope to grow rapidly and achieve economies of scale—hence the mantra "Get big

fast”—no new venture begins life with that kind of advantage over its competitors. So, while a well-conceived venture business plan should look to the ultimate creation of competitive advantages, that vision is not itself a competitive advantage. Truly lucrative opportunities will attract other new ventures with a similar vision and a comparable plan. The larger the potential prize, in other words, the smaller will be the probability of winning the prize. There are many smart venture capitalists and no barriers to entry in generating business plans.

The quality of the venture plans is not totally irrelevant. Poor plans usually lead to poor returns. But plans that rely on general features, like identifying large markets and describing potential competitive advantages, are unlikely to pinpoint genuinely attractive opportunities.

The design of a successful venture business plan involves making delicate trade-offs between the size of the ultimate returns and the chance of realizing those returns. Crafting such plans requires a thorough knowledge of the industry and a dense network of industry contacts. But those are attributes of venture investors. Indeed, they are two of the principal resources that the venture sponsors, whether independent venture capital firms or corporate development departments, bring to a venture opportunity. There are no generally applicable characteristics of “good” business plans.

* All good business plans are local.

An accomplished venture sponsor should also be able to assess the quality of a venture’s management team. The sponsor should have a network of contacts that include skilled professionals who can be recruited to fill in gaps in the original team, potential customers who can help refine the venture’s product offerings, and firms that can provide special facilities or other essentials that the venture needs to deliver its offerings. The sponsor should also be able to modify and refine the business plan to target those niches in which there is the greatest probability of success. The founders of Compaq originally approached Ben Rosen with a plan to develop and sell disk storage devices. He liked the venture team but not the proposal, and he redirected them toward the emerging PC business, where they could challenge IBM at the high end of this market.

Venture sponsors are ultimately in the knowledge business. They have to create and maintain information collection networks. They bring together knowledge of technologies, markets, people, and other essential resources and try to combine these ingredients to produce a well-functioning entrepreneurial organization. Like other industries in which there are no barriers to entry, success in venture capital ultimately depends on how efficiently the venture operation is run, which means how effectively venture sponsors remain focused within their core circles of competence. Ultimately, it is the people that matter, not the business plans in which they invest.

* If that is the case, it would seem obvious that the new venture will be profitable. Yet on closer examination, it turns out that sustained profitability depends on whether the venturing firm has a competitive advantage in its original market.

If there are no barriers to entry in that market, then the profits it enjoys from its expansion into a related area will draw competitors who can copy what it did—that is, who can operate in both the initial and adjacent markets and benefit from the same cost advantages that the original firm enjoys. At that point, the expansion strategy becomes solely a matter of efficient operations. The exceptional profits the original firm was earning from moving into the new market wither away, as is generally the case when there are no barriers to entry. The venture decision, then, rests on the status of competitive advantage. If one exists, then moving into a related market is a good idea. If one doesn’t, success depends on operational efficiency and the competence of the people involved. Only when there are sustainable competitive advantages in the original market do economies of scope add something to the basic imperatives—chiefly, to operate efficiently—of a new venture.

EXPLOITING BRANDS

*

Even for a firm with a competitive advantage, brand extensions into markets that lie outside the company's existing franchise will usually be less profitable. The competitive nature of the new market will cut into both revenue and profit margins. If there are any exceptional returns, they will come only to the extent that leveraging an existing brand image may lower the cost of entry. Anything more than that will be eliminated by competitors who are willing to pay the full price of entry. If this market is within reach of other companies that are also trying to extend their brands, then any excess returns will be reduced by these competitors. The value of these brand-extending opportunities can also be decreased by any impairment of the brand or cannibalization of demand in the established side of the business. Business plans that promise returns above these modest levels have probably ignored the impact of future entry and competition.

In sum, the value of migrating an established brand into another market, particularly a competitive market with no barriers to entry, is due entirely to the cost savings available from not having to build a brand from scratch. These savings are part of the efficiency imperative that applies to all business functions necessary for a successful entry into a new market. For example, Microsoft's foray into the video game market with the Xbox requires a much higher level of cost management and focus than did the extension of its basic Windows franchise from the desktop onto servers or personal digital assistants.

CHAPTER 18

The Level Playing Field

MANAGEMENT MATTERS

FIGURE 18.1

Where we are in the book

THE PRODUCTIVITY FRONTIER

* The evidence strongly favors this second view.

Evidence for the importance of management in achieving superior productivity shows up in many ways:

- Some companies do better.
- Things can change in a hurry.
- Manufacturing productivity has been transformed.
- Case studies tell the tale.

*

In the telephone long-distance market after deregulation, there were equally striking variations across companies. Long-distance costs are largely fixed. National providers must have national networks with similar software and control capabilities. The incremental capacity necessary to handle additional traffic adds little to the cost of the basic infrastructure. Because billing and customer services are largely automated, they also are primarily fixed-cost items. The costs of advertising campaigns and a sales force ought not to differ significantly from one national carrier to another. Yet in spite of these similar requirements, in the early 1990s AT&T ran its long-distance network with around 120,000 employees. MCI managed the same tasks with fewer than 50,000. Sprint got by with an even smaller head count.

TABLE 18.1

How productivity varies in the life insurance industry (general expenses as a percentage of premiums)

* These disparities are not transitory. Like the superior performance of Northwestern Mutual, they tend to persist for many years. Nor are they attributable to proprietary technology. These differences are as common

among simple, low-capital-intensive, low-tech operations as they are among sophisticated, capital-intensive, high-tech firms.

In a particularly striking example, differences in performance of up to 40 percent existed for extended periods among the former Bell Telephone operating companies, both in terms of total cost per access line and with respect to more detailed performance areas like costs per customer service order processed (table 18.2). Yet these former siblings used the same basic equipment, the same support systems, and the same unionized labor operating under a common national contract. Some of these telcos improved productivity just as others saw it decline. Disparities in productivity across national economies mirror these intercompany differences and cannot be accounted for by divergences in either technology (which is globally available), capital investment, or labor force quality. The only plausible explanation of these divergences is difference in the quality and attention of management.

TABLE 18.2
Productivity differences among former Bell operating companies

TABLE 18.3
Manufacturing productivity relative to the United States, 1970–80 and 1985–91

* These results are typical of performance improvement projects. When the projects involve a coordinated management effort, the returns range from 50 to even 100 percent or more. When the expenditures are less focused, the returns are smaller by an order of magnitude. The essential input is management.

TABLE 18.4
Head count changes at Connecticut Mutual (full-time equivalents)

TABLE 18.5
Expenses and savings at Connecticut Mutual (\$ million)

TABLE 18.6
Credit card operations: Efficiency and loan losses (1990 = 100)

MANAGEMENT AND COMPANY PERFORMANCE

Good to Great, almost all the firms that flourished began the change by adopting a simple and clear strategic focus. Kimberly-Clark sold its mill and concentrated on marketing paper products. Walgreen's and Kroger focused on simple, basic retail businesses in well-defined geographic markets. Wells Fargo concentrated on basic banking on the West Coast. Nucor focused on certain kinds of steel making and marketing. Abbott Laboratories dedicated itself to particular kinds of medical supplies. Gillette concentrated on razor technology and shaving products, Philip Morris on cigarettes, Circuit City on appliance retailing (although, to its detriment, it did not try to dominate any particular geographic region), and Fannie Mae on mortgages. Even Pitney Bowes, which expanded its attention beyond postage machines, was more focused than its potential rivals like Addressograph or Xerox.

The subsequent experience of some of these companies underscores the indispensable role of management attention. Where great companies' performances have deteriorated, there appears to be some important dissipation of management focus. Gillette moved into batteries; Circuit City tried to compete nationwide in an increasingly complex product arena. Walgreen's expanded nationally. Philip Morris has had to fight for its life in the courts, when it wasn't buying or selling food and beverage businesses.

Companies with outstanding performance have tended to be narrowly focused on particular industries or even subsegments of industries. The great exception to this rule is General Electric.

* Yet even its history is not completely at variance with the overall pattern. Before Jack Welch became CEO in 1981, his predecessors had abandoned its strategic principle of being either the first or the second firm in every market in which it had a presence. Instead, GE had entered sectors like natural resources, where it could not hope to achieve that goal. At the time Welch took over, GE had returns on equity of 17–18 percent over the previous fifteen years. Without the entry into natural resources, made in the first half of the 1970s, its results would have been stronger.

Over the subsequent twenty-two years, with Welch in charge, return on equity rose to roughly 24 percent, while overall growth in earnings accelerated. This performance made GE the most valuable company in the world by the year 2000. It was not achieved by simplification of GE's segment focus. Although Welch did exit the natural resource business, much of its success was attributable to GE Capital Corporation, General Electric's profitable expansion into a broad range of financial services. The company also bought a television network (NBC) and developed a separate medical products group. Under Welch, it expanded from six segments, including a stand-alone international division, to eleven.

But Welch did reinstitute the policy of each GE business being either first or second in a market, or else getting out. At the same time, its decentralized segments were strongly refocused on operational efficiency and continuing cost reduction. Early in his tenure, Welch was awarded the nickname "Neutron Jack," acknowledging his forceful effort to reduce the workforce and cut costs (the "neutron" bomb is a nuclear device capable of killing people without damaging physical property). While GE entered a number of disparate businesses, its strategic principles were clear, unambiguous, and easy to apply. A simple strategic mandate allowed management at the operating level to concentrate on efficiency. The net result was outstanding business performance.

The important lesson to be drawn from all of this experience, as it relates to both productivity growth and overall business performance, is that effective strategy formulation is not the only source of superior returns. Without a doubt, strategy does matter. Pursuit of unrealistic strategic goals guarantees poor business outcomes. Warren Buffett has observed that when management with a good reputation meets an industry with a bad reputation, most often it is the reputation of the industry that survives. Ill-conceived initiatives that ignore the structure of competitive advantage and competitive interactions is a leading cause of business

failure.

However, strategy is not the whole story. An obsession with strategy at the expense of the pursuit of operational excellence is equally damaging. There is simply too much evidence of variability among strategically identical firms, and of the speed with which performance can be improved without any changes in the larger economic environment, to discount the importance of management.

Strategy formulation should have three underlying goals. The first is to identify the competitive universe in which the company operates, and to locate its position regarding competitive advantages and barriers to entry. If the company does enjoy competitive advantages, the second goal is to recognize and manage effectively competitive interactions with other firms on whom the company's performance critically depends. The third goal, which applies to all companies whether or not they benefit from competitive advantages, is to develop a clear, simple, and accurate vision of where the company should be headed. This vision should allow management to focus the greater part of its attention on getting there. The approach to strategic analysis offered in this book has been designed to help managers accomplish these goals.

APPENDIX

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*The Justice Department had demanded that AT&T restructure in some way, but the company itself was deeply involved in formulating the strategy by which the Regional Bell Operating Companies were spun off.

* Most differentiated products also compete in markets where there are no barriers to entry, so differentiation, as we will illustrate, is not sufficient to protect a firm from the ravages of a highly competitive market.

*When Samuel Slater brought Richard Arkwright's cotton mill technology from England to Pawtucket, Rhode Island, in 1789, he carried the machine designs in his head. He was breaking English laws against the export of any technology, whether machines or the knowledge to build them.

* It is possible that in a market protected by barriers to entry, two or three incumbents may take share from one another. But if the changes are substantial, the indication is that customer captivity is weak and that it may not be long before new entrants are breaching the barriers.

*This actually understates the return on software, since Microsoft lost money on its game console and other noncore business.

*This calculation of Microsoft's return on capital is rudimentary. We go into the mechanics of arriving at a more refined version of return on invested capital in the next section of this chapter.

* Wal-Mart, like many retailers, has a fiscal year that ends on January 31. All year-end figures here refer to the January year-end.

* Wal-Mart's inbound logistics were 2.8 percent of sales, while the industry average was 4.1 percent. This amounts to a relative cost advantage of over 30 percent (2.8 percent divided by 4.1 percent), compared to store and labor cost advantages of 10–15 percent.

*Every general statement has at least one or two glaring exceptions. The obvious one regarding the profitability of Internet companies is eBay. Its ability to benefit from the “network effect,” a variant of economies of scale, is widely known. On the other hand, eBay has virtually no business in Japan, where the local market is dominated by Yahoo! Japan. By contrast, for all of its success as a retailer, Amazon has only reached profitability after a decade in business.

* HP did gain a decent share of the market after it started producing mainstream PCs. In 2002, it bought Compaq.

*Though this version of the PC industry map presented in chapter 4 looks different, it tells the same story.

*The unusual spike in return on invested capital was a result of Compaq trying to emulate Dell with a build-to-order approach to inventory. Starting in 1996, it drastically reduced its inventory and also cut receivables while its cash rose. Since ROIC subtracts surplus cash (cash in excess of 1 percent of sales) from the invested capital (denominator), the percentage can change dramatically. Had we used return on equity, the year-to-year difference would have been less.

* Captivity was not simply a matter of product differentiation. Household appliances and even office equipment like PCs are differentiated by features, brand images, and perceived quality. Yet since the introduction of the original IBM PC, customers have rarely, if ever, been captive to their initial suppliers.

* Cisco built up a large asset on its balance sheet, which it called “Investments.” This represented surplus cash invested at maturities too long to classify as a current asset. We have treated this “investment” asset as if it were cash and deducted it from Invested Capital in calculating ROIC.

*Juniper's position was a difficult one. If it succeeded in entering against Cisco, that would indicate that barriers to entry in the enterprise routing market were diminishing. Thus, other Junipers were likely to follow. The alternative possibility was that Cisco's competitive advantages were fundamentally unimpaired, in which case Juniper's ultimate success in this market would be modest, at best.

*These pricing structures do have some drawbacks. They may limit the revenue-harvesting benefits of price discrimination—charging more to customers who put a high value on the goods or services, like airline travelers who need tickets for tomorrow, and less to customers who put a lower value on the product, like travelers who will buy bargain fares months in advance, or take any flight available at the last minute.

* Because by the mid 1970s, both Coca-Cola and PepsiCo had become conglomerates, and because both had large foreign operations, the profitability of their domestic soft drink businesses needs to be extracted from the consolidated corporate financial statements and return on capital estimated on the basis of operating figures.

*Warren Buffett, not only a great investor but a man who loves his sugar (and also a longtime director and large shareholder of Coca-Cola) reported that in every blind taste test in the industry, the sweeter drink always wins.

*When Coca-Cola spun off the bottling company in 1986, it helped lift its soft drink margins by separating out the lower-margin bottling operation. Pepsi did not make a similar move until 1999, and its margins suffered by comparison.

* Spontaneous liabilities, which include accrued wages and other things like accounts payable and accrued expenses, are liabilities that arise from being in business. They are, in effect, loans from workers, suppliers, and others, for which the company does not have to pay interest. Spontaneous liabilities decrease the amount of capital (debt and equity) that a company needs to raise in order to pay for its assets.

*There are instances in which several firms may be considering entering a market that is currently unoccupied by any established competitor. Each potential entrant seeks to preempt all the other competitors. These situations are relatively rare but important variants of the entry/preemption games, which we discuss later in the chapter.

*These figures include Kodak's chemicals business. However, sales in 1975 from film and cameras were at least \$2 billion, more than two and a half times Polaroid's.

* If there are significant cross elasticities of demand—if buying a product in one niche increases the demand for a product in another niche—then the companies can employ price-setting tactics, as in the prisoner's dilemma game, that limit mutually destructive interference.

†The best example of effective yield management is the airlines' ability to sell virtually the same seat for different prices, depending on how far in advance the traveler books and what kind of refund or exchange rights come with the ticket. These differences reflect distinctions in customer demand that are more varied than the similarity of the product—a seat on a particular flight—would indicate.

* Competition over formats and standards has not disappeared. There are competing standards for the next generation of DVD players, and digital audiotape never made it into mainstream consumer technology in part because there was no agreement on a format. But most of this competition is resolved before many firms come to market with their devices.

*Nash developed a final fairness condition to cover cases of nonlinear relationships between the relative positions of cooperating firms. He called this situation “independence of irrelevant alternatives.” Together with individual rationality, symmetry, and linear invariance, this condition uniquely defines a “fair” set of cooperative returns among firms in the general case. That “equilibrium” is characterized by the condition that any changes in benefit from one firm to another should lead the firm giving up some return to lose a fraction of its total benefits from cooperation equal to the gain as a fraction of its total benefit that the winning firm would receive. That is, if firm B gives up 25 percent of its benefits, firm A should be adding 25 percent to its benefits. The implications of this elegant theoretical result are unfortunately rarely apparent in practice.

*These details come from the Harvard Business School case cited in the references. The \$14 charge per unit is only mentioned in the context of game writers in the United States, so the charge may have been less in Japan.

* Even though Nintendo's licensees could not write for other console manufacturers for two years after signing the license, there were many ways, such as spinning off divisions or doing preliminary design work, for them to avoid the restrictions of this arrangement.

*To incorporate this terminal value into the full net present value calculation, it has to be discounted back to the present from the date at which it is created, in this case year eight.

*These are resources a competitor would need even though some of them do not show up on the balance sheet, having been treated by accounting convention as operating expenses rather than capital investments.

* An average debt level above what the company can reasonably bear without impairment is unlikely to be sustainable.

* If the firm has valuable assets that are not necessary to its basic operations, and whose returns are not included in operating earnings, for example excess cash or real estate, the value of these assets should be added to the earnings power value to get the total value of the firm.

* Warren Buffett's well-known essay "The Superinvestors of Graham and Doddsville" recounts the success of members of this informal group into the early 1980s.

*The scholarly literature is summarized in the article by Andrade, Mitchell, and Stafford cited in the notes.

* Competitive advantages based on government licenses, regulations, or other interventions share with customer captivity the quality that they do not generally extend beyond their original scope when an acquisition takes place.

*The diversification argument also promised cost savings, these from a reduction in taxes paid. A company with multiple lines of business should have lower fluctuations in operating income and thus can afford to carry more debt on the balance sheet. Debt is cheaper than equity because of the deductibility of interest payments. Also, when this capital is deployed within the company, rather than distributed to shareholders for their investments, it avoids the tax on either dividends or capital gains.

A separate diversification savings occurs when a company like Berkshire Hathaway acquires a privately held company in exchange for Berkshire stock. This enables the selling owners to buy into Berkshire's diversified portfolio of businesses without having to pay the capital gains they would owe if they sold their company for cash and reinvested the proceeds. Tax savings are thus an important justification in this case, which is probably highly uncommon.

*The return to the venture capitalists also depends on the deal made with the entrepreneurs. We will ignore that issue here, since we are focused on the success of the businesses receiving venture financing, not on the division of the spoils or the tactical effectiveness of the incentives for management built into the venture deal.

*The eBay business plan may appear to be an exception to this rule. It clearly contemplated the development of significant economies of scale and the value that they would create for the company. However, the likely achievement of such economies of scale depended on the absence of competing ventures in this field. And this absence was due primarily to the revolutionary nature of the eBay concept. Unique insights of this sort are so rare that they cannot be expected to constitute the basis of many venture-development enterprises.

*Economies of scope refer to potential efficiencies that may develop from extending the scope of marketing and distribution to include new types of products.

*From a cooperative perspective, it might be better for a company like Microsoft to adopt applications software offered by other providers into the Windows platform. This approach has the advantage of avoiding duplicative product development and promotion costs. The risks are that Microsoft's partners might ultimately turn on Microsoft, and these risks may well outweigh the benefits.

* Good management and the ensuing high levels of productivity may not always lead to high levels of profitability. In a market context, it is not absolute but relative productivity that matters for profitability. If all the firms in an industry are highly and equally productive, competition among them may lead to ordinary levels of profitability.

* Connecticut Mutual, perhaps deservedly, had been taken over by another company during the intervening years.

* A comprehensive study of comparative productivity in six thousand plants confirms this basic point, as does a range of other academic research cited by the study's authors (see Baily, Holten, and Campbell in the references) and industry studies from the Sloan Foundation.

*The IRR (internal rate of return) on the investment comes to 80 percent annually on these assumptions: that no additional capital needs to be invested; that in 1994 and subsequent years, the annual savings rise to \$4.8 million, since the improvements are in place for the entire year; and that the improvements last for at least ten years.

*Berkshire Hathaway is a second prominent exception, but in its case there are unusual and perhaps nonreproducible circumstances. It is not an operating company, and the firms that CEO Warren Buffett has purchased outright conform to the rule of keeping a narrow focus, controlling costs, and tightly managing cash flow.