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 competive 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

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

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.

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 non-dominant 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.