

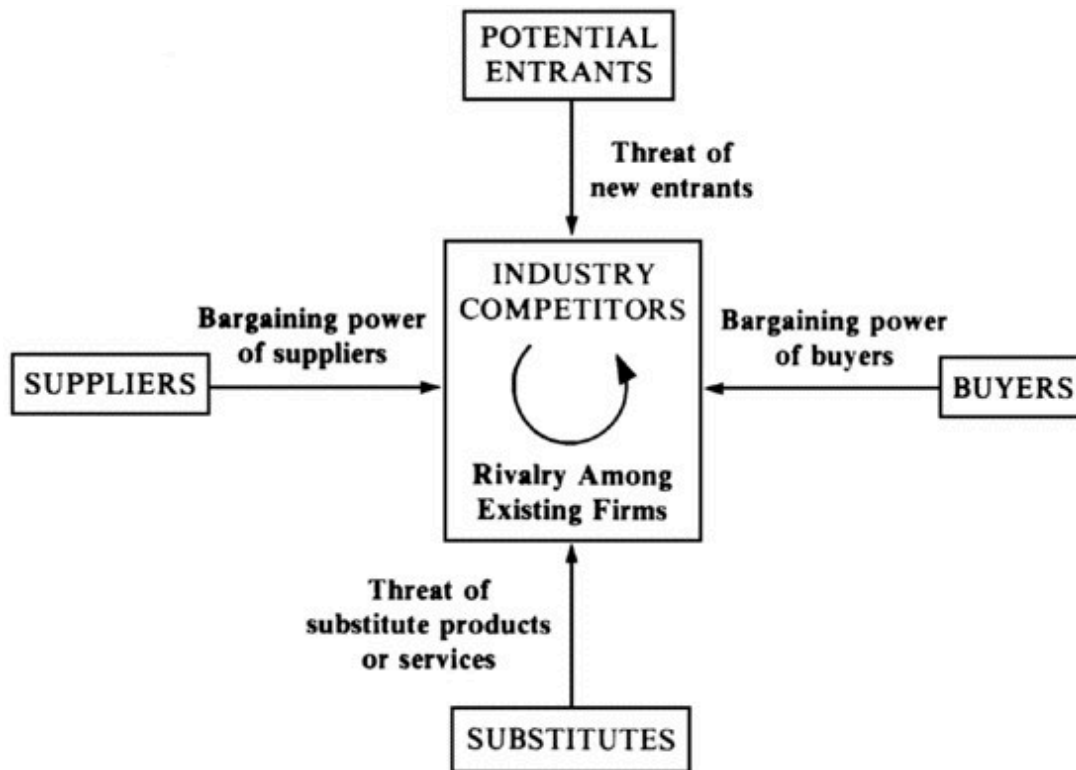
# 1

## The Structural Analysis of Industries

The essence of formulating competitive strategy is relating a company to its environment. Although the relevant environment is very broad, encompassing social as well as economic forces, the key aspect of the firm's environment is the industry or industries in which it competes. Industry structure has a strong influence in determining the competitive rules of the game as well as the strategies potentially available to the firm. Forces outside the industry are significant primarily in a relative sense; since outside forces usually affect all firms in the industry, the key is found in the differing abilities of firms to deal with them.

The intensity of competition in an industry is neither a matter of coincidence nor bad luck. Rather, competition in an industry is rooted in its underlying economic structure and goes well beyond the behavior of current competitors. The state of competition in an industry depends on five basic competitive forces, which are shown in Figure 1-1. The collective strength of these forces determines the ultimate profit potential in the industry, where profit potential is measured in terms of long run return on invested capital. Not all industries have the same potential. They differ fundamentally in their ultimate profit potential as the collective strength of the forces differs; the forces range from intense in industries like tires, paper, and steel—where no firm earns spectacular returns—to relatively mild in industries like oil-field equipment and services, cosmetics, and toiletries—where high returns are quite common.

### **FIGURE 1-1. Forces Driving Industry Competition**



This chapter will be concerned with identifying the key *structural* features of industries that determine the strength of the competitive forces and hence industry profitability. The goal of competitive strategy for a business unit in an industry is to find a position in the industry where the company can best defend itself against these competitive forces or can influence them in its favor. Since the collective strength of the forces may well be painfully apparent to all competitors, the key for developing strategy is to delve below the surface and analyze the sources of each. Knowledge of these underlying sources of competitive pressure highlights the critical strengths and weaknesses of the company, animates its positioning in its industry, clarifies the areas where strategic changes may yield the greatest payoff, and highlights the areas where industry trends promise to hold the greatest significance as either opportunities or threats. Understanding these sources will also prove to be useful in considering areas for diversification, though the primary focus here is on strategy in individual industries. Structural analysis is the fundamental underpinning for formulating competitive strategy and a key building block for most of the concepts in this book.

To avoid needless repetition, the term “product” rather than “product or service” will be used to refer to the output of an industry, even though

the principles of structural analysis developed here apply equally to product and service businesses. Structural analysis also applies to diagnosing industry competition in any country or in an international market, though some of the institutional circumstances may differ.<sup>1</sup>

# Structural Determinants of the Intensity of Competition

Let us adopt the working definition of an industry as the group of firms producing products that are close substitutes for each other. In practice there is often a great deal of controversy over the appropriate definition, centering around how close substitutability needs to be in terms of product, process, or geographic market boundaries. Because we will be in a better position to treat these issues once the basic concept of structural analysis has been introduced, we will assume initially that industry boundaries have already been drawn.

Competition in an industry continually works to drive down the rate of return on invested capital toward the competitive floor rate of return, or the return that would be earned by the economist's "perfectly competitive" industry. This competitive floor, or "free market" return, is approximated by the yield on long-term government securities adjusted upward by the risk of capital loss. Investors will not tolerate returns below this rate in the long run because of their alternative of investing in other industries, and firms habitually earning less than this return will eventually go out of business. The presence of rates of return higher than the adjusted free market return serves to stimulate the inflow of capital into an industry either through new entry or through additional investment by existing competitors. The strength of the competitive forces in an industry determines the degree to which this inflow of investment occurs and drives the return to the free market level, and thus the ability of firms to sustain above-average returns.

The five competitive forces—entry, threat of substitution, bargaining power of buyers, bargaining power of suppliers, and rivalry among current competitors—reflect the fact that competition in an industry goes well beyond the established players. Customers, suppliers, substitutes, and potential entrants are all "competitors" to firms in the industry and may be more or less prominent depending on the particular circumstances. Competition in this broader sense might be termed *extended rivalry*.

All five competitive forces jointly determine the intensity of industry competition and profitability, and the strongest force or forces are governing and become crucial from the point of view of strategy

formulation. For example, even a company with a very strong market position in an industry where potential entrants are no threat will earn low returns if it faces a superior, lower-cost substitute. Even with no substitutes and blocked entry, intense rivalry among existing competitors will limit potential returns. The extreme case of competitive intensity is the economist's perfectly competitive industry, where entry is free, existing firms have no bargaining power against suppliers and customers, and rivalry is unbridled because the numerous firms and products are all alike.

Different forces take on prominence, of course, in shaping competition in each industry. In the ocean-going tanker industry the key force is probably the buyers (the major oil companies), whereas in tires it is powerful original equipment (OEM) buyers coupled with tough competitors. In the steel industry the key forces are foreign competitors and substitute materials.

The underlying structure of an industry, reflected in the strength of the forces, should be distinguished from the many short-run factors that can affect competition and profitability in a transient way. For example, fluctuations in economic conditions over the business cycle influence the short-run profitability of nearly all firms in many industries, as can material shortages, strikes, spurts in demand, and the like. Although such factors may have tactical significance, the focus of the analysis of industry structure, or "structural analysis," is on identifying the basic, underlying characteristics of an industry rooted in its economics and technology that shape the arena in which competitive strategy must be set. Firms will each have unique strengths and weaknesses in dealing with industry structure, and industry structure can and does shift gradually over time. Yet understanding industry structure must be the starting point for strategic analysis.

A number of important economic and technical characteristics of an industry are critical to the strength of each competitive force. These will be discussed in turn.

## **THREAT OF ENTRY**

New entrants to an industry bring new capacity, the desire to gain market share, and often substantial resources. Prices can be bid down or incumbents' costs inflated as a result, reducing profitability. Companies diversifying through acquisition into the industry from other

markets often use their resources to cause a shake-up, as Philip Morris did with Miller beer. Thus acquisition into an industry with intent to build market position should probably be viewed as entry even though no entirely new entity is created.

The threat of entry into an industry depends on the *barriers to entry* that are present, coupled with the *reaction* from existing competitors that the entrant can expect. If barriers are high and/or the newcomer can expect sharp retaliation from entrenched competitors, the threat of entry is low.

### **B**ARRIERS TO **E**NTRY

There are six major sources of barriers to entry:

*Economies of Scale.* Economies of scale refer to declines in unit costs of a product (or operation or function that goes into producing a product) as the absolute volume *per period* increases. Economies of scale deter entry by forcing the entrant to come in at large scale and risk strong reaction from existing firms or come in at a small scale and accept a cost disadvantage, both undesirable options. Scale economies can be present in nearly every function of a business, including manufacturing, purchasing, research and development, marketing, service network, sales force utilization, and distribution. For example, scale economies in production, research, marketing, and service are probably the key barriers to entry in the mainframe computer industry, as Xerox and General Electric sadly discovered.

Scale economies may relate to an entire functional area, as in the case of a sales force, or they may stem from particular operations or activities that are part of a functional area. For example, in the manufacture of television sets, economies of scale are large in color tube production, and they are less significant in cabinetmaking and set assembly. It is important to examine each component of costs separately for its particular relationship between unit cost and scale.

Units of multibusiness firms may be able to reap economies similar to those of scale if they are able to *share operations or functions* subject to economies of scale with other businesses in the company. For example, the multibusiness company may manufacture small electric motors, which are then used in producing industrial fans, hairdryers, and cooling systems for electronic equipment. If economies of scale in motor manufacturing extend beyond the number of motors needed in any one

market, the multibusiness firm diversified in this way will reap economies in motor manufacturing that exceed those available if it only manufactured motors for use in, say, hairdryers. Thus related diversification around common operations or functions can remove volume constraints imposed by the size of a given industry.<sup>2</sup> The prospective entrant is forced to be diversified or face a cost disadvantage. Potentially shareable activities or functions subject to economies of scale can include sales forces, distribution systems, purchasing, and so on.

The benefits of sharing are particularly potent if there are *joint costs*. Joint costs occur when a firm producing product *A* (or an operation or function that is part of producing *A*) must inherently have the capacity to produce product *B*. An example is air passenger services and air cargo, where because of technological constraints only so much space in the aircraft can be filled with passengers, leaving available cargo space and payload capacity. Many of the costs must be borne to put the plane into the air and there is capacity for freight regardless of the quantity of passengers the plane is carrying. Thus the firm that competes in both passenger and freight may have a substantial advantage over the firm competing in only one market. This same sort of effect occurs in businesses that involve manufacturing processes involving by-products. The entrant who cannot capture the highest available incremental revenue from the by-products can face a disadvantage if incumbent firms do.

A common situation of joint costs occurs when business units can share *intangible* assets such as brand names and know-how. The cost of creating an intangible asset need only be borne once; the asset may then be freely applied to other business, subject only to any costs of adapting or modifying it. Thus situations in which intangible assets are shared can lead to substantial economies.

A type of economies of scale entry barrier occurs when there are economies to vertical integration, that is, operating in successive stages of production or distribution. Here the entrant must enter integrated or face a cost disadvantage, as well as possible foreclosure of inputs or markets for its product *if* most established competitors are integrated. Foreclosure in such situations stems from the fact that most customers purchase from in-house units, or most suppliers “sell” their inputs in-house. The independent firm faces a difficult time in getting comparable prices and may become “squeezed” if integrated competitors offer

different terms to it than to their captive units. The requirement to enter integrated may heighten the risks of retaliation and also elevate other entry barriers discussed below.

*Product Differentiation.* Product differentiation means that established firms have brand identification and customer loyalties, which stem from past advertising, customer service, product differences, or simply being first into the industry. Differentiation creates a barrier to entry by forcing entrants to spend heavily to overcome existing customer loyalties. This effort usually involves start-up losses and often takes an extended period of time. Such investments in building a brand name are particularly risky since they have no salvage value if entry fails.

Product differentiation is perhaps the most important entry barrier in baby care products, over-the-counter drugs, cosmetics, investment banking, and public accounting. In the brewing industry, product differentiation is coupled with economies of scale in production, marketing, and distribution to create high barriers.

*Capital Requirements.* The need to invest large financial resources in order to compete creates a barrier to entry, particularly if the capital is required for risky or unrecoverable up-front advertising or research and development (R&D). Capital may be necessary not only for production facilities but also for things like customer credit, inventories, or covering start-up losses. Xerox created a major capital barrier to entry in copiers, for example, when it chose to rent copiers rather than sell them outright which greatly increased the need for working capital. Whereas today's major corporations have the financial resources to enter almost any industry, the huge capital requirements in fields like computers and mineral extraction limit the pool of likely entrants. Even if capital is available on the capital markets, entry represents a risky use of that capital which should be reflected in risk premiums charged the prospective entrant; these constitute advantages for going firms.<sup>3</sup>

*Switching Costs.* A barrier to entry is created by the presence of *switching costs*, that is, one-time costs facing the buyer of switching from one supplier's product to another's. Switching costs may include employee retraining costs, cost of new ancillary equipment, cost and time in testing or qualifying a new source, need for technical help as a result of reliance on seller engineering aid, product redesign, or even

psychic costs of severing a relationship.<sup>4</sup> If these switching costs are high, then new entrants must offer a major improvement in cost or performance in order for the buyer to switch from an incumbent. For example, in intravenous (IV) solutions and kits for use in hospitals, procedures for attaching solutions to patients differ among competitive products and the hardware for hanging the IV bottles are not compatible. Here switching encounters great resistance from nurses responsible for administering the treatment and requires new investments in hardware.

*Access to Distribution Channels.* A barrier to entry can be created by the new entrant's need to secure distribution for its product. To the extent that logical distribution channels for the product have already been served by established firms, the new firm must persuade the channels to accept its product through price breaks, cooperative advertising allowances, and the like, which reduce profits. The manufacturer of a new food product, for example, must persuade the retailer to give it space on the fiercely competitive supermarket shelf via promises of promotions, intense selling efforts to the retailer, or some other means.

The more limited the wholesale or retail channels for a product are and the more existing competitors have these tied up, obviously the tougher entry into the industry will be. Existing competitors may have ties with channels based on long relationships, high-quality service, or even exclusive relationships in which the channel is solely identified with a particular manufacturer. Sometimes this barrier to entry is so high that to surmount it a new firm must create an entirely new distribution channel, as Timex did in the watch industry.

*Cost Disadvantages Independent of Scale.* Established firms may have cost advantages not replicable by potential entrants no matter what their size and attained economies of scale. The most critical advantages are factors such as the following:

- Proprietary product technology: product know-how or design characteristics that are kept proprietary through patents or secrecy.
- Favorable access to raw materials: established firms may have locked up the most favorable sources and/or tied up foreseeable

needs early at prices reflecting a lower demand for them than currently exists. For example, Frasch sulphur firms like Texas Gulf Sulphur gained control of some very favorable large salt dome sulphur deposits many years ago, before mineral rightholders were aware of their value as a result of the Frasch mining technology. Discoverers of sulphur deposits were often disappointed oil companies who were exploring for oil and not prone to value them highly.

- Favorable locations: established firms may have cornered favorable locations before market forces bid up prices to capture their full value.
- Government subsidies: preferential government subsidies may give established firms lasting advantages in some businesses.
- Learning or experience curve: in some businesses, there is an observed tendency for unit costs to decline as the firm gains more cumulative experience in producing a product. Costs decline because workers improve their methods and become more efficient (the classic learning curve), layout improves, specialized equipment and processes are developed, better performance is coaxed from equipment, product design changes make manufacturing easier, techniques for measurement and control of operations improve, and so on. Experience is just a name for certain kinds of technological change and may apply not only to production but also to distribution, logistics, and other functions. As is the case with scale economies, cost declines with experience relate not to the entire firm but arise from the individual operations or functions that make up the firm. Experience can lower costs in marketing, distribution, and other areas as well as in production or operations within production, and each component of costs must be examined for the effects of experience.

Cost declines with experience seem to be the most significant in businesses involving a high labor content performing intricate tasks and/or complex assembly operations (aircraft manufacture, shipbuilding). They are nearly always the most significant in the early and growth phase of a product's development, and later reach diminishing proportional improvements. Often economies of scale are cited among the reasons that costs decline with experience. Economies

of scale are dependent on volume per period, and *not* on cumulative volume, and are very different analytically from experience, although the two often occur together and can be hard to separate. The dangers of lumping scale and experience together will be discussed further.

If costs decline with experience in an industry, and *if the experience can be kept proprietary by established firms*, then this effect leads to an entry barrier. Newly started firms, with no experience, will have inherently higher costs than established firms and must bear heavy start-up losses from below- or near-cost pricing in order to gain the experience to achieve cost parity with established firms (if they ever can). Established firms, particularly the market share leader who is accumulating experience the fastest, will have higher cash flow because of their lower costs to invest in new equipment and techniques. However, it is important to recognize that pursuing experience curve cost declines (and scale economies) may require substantial up-front capital investment for equipment and startup losses. If costs continue to decline with volume even as cumulative volume gets very large, new entrants may never catch up. A number of firms, notably Texas Instruments, Black and Decker, Emerson Electric, and others have built successful strategies based on the experience curve through aggressive investments to build cumulative volume early in the development of industries, often by pricing in anticipation of future cost declines.

The decline in cost from experience can be augmented if there are diversified firms in the industry who *share* operations or functions subject to such a decline with other units in the company, or where there are related activities in the company from which incomplete though useful experience can be obtained. When an activity like the fabrication of raw material is shared by several business units, experience obviously accumulates faster than it would if the activity were used solely to meet the needs in one industry. Or when the corporate entity has related activities within the firm, sister units can receive the benefits of their experience at little or no cost since much experience is an intangible asset. This sort of shared learning accentuates the entry barrier provided by the experience curve, provided the other conditions for its significance are met.

Experience is such a widely used concept in strategy formulation that its strategic implications will be discussed further.

*Government Policy.* The last major source of entry barriers is government policy. Government can limit or even foreclose entry into industries with such controls as licensing requirements and limits on access to raw materials (like coal lands or mountains on which to build ski areas). Regulated industries like trucking, railroads, liquor retailing, and freight forwarding are obvious examples. More subtle government restrictions on entry can stem from controls such as air and water pollution standards and product safety and efficacy regulations. For example, pollution control requirements can increase the capital needed for entry and the required technological sophistication and even the optimal scale of facilities. Standards for product testing, common in industries like food and other health-related products, can impose substantial lead times, which not only raise the capital cost of entry but also give established firms ample notice of impending entry and sometimes full knowledge of the new competitor's product with which to formulate retaliatory strategies. Government policy in such areas certainly has direct social benefits, but it often has secondary consequences for entry which are unrecognized.

#### **E**XPECTED **R**ETALIATION

The potential entrant's expectations about the reaction of existing competitors also will influence the threat of entry. If existing competitors are expected to respond forcefully to make the entrant's stay in the industry an unpleasant one, then entry may well be deterred. Conditions that signal the strong likelihood of retaliation to entry and hence deter it are the following:

- a history of vigorous retaliation to entrants;
- established firms with substantial resources to fight back, including excess cash and unused borrowing capacity, adequate excess productive capacity to meet all likely future needs, or great leverage with distribution channels or customers;
- established firms with great commitment to the industry and highly illiquid assets employed in it;
- slow industry growth, which limits the ability of the industry to absorb a new firm without depressing the sales and financial performance of established firms.

## **T**<sub>HE</sub> **E**<sub>NTRY</sub> **D**<sub>ETERRING</sub> **P**<sub>RICE</sub>

The condition of entry in an industry can be summarized in an important hypothetical concept called the *entry deterring price*: the prevailing structure of prices (and related terms such as product quality and service) which just balances the potential rewards from entry (forecast by the potential entrant) with the expected costs of overcoming structural entry barriers and risking retaliation. If the current price level is higher than the entry deterring price, entrants will forecast above-average profits from entry, and entry will occur. Of course the entry deterring price depends on entrants' expectations of the future and not just current conditions.

The threat of entry into an industry can be eliminated if incumbent firms choose or are forced by competition to price below this hypothetical entry deterring price. If they price above it, gains in terms of profitability may be short-lived because they will be dissipated by the cost of fighting or coexisting with new entrants.

## **P**<sub>ROPERTIES OF</sub> **E**<sub>NTRY</sub> **B**<sub>ARRIERS</sub>

There are several additional properties of entry barriers that are crucial from a strategic standpoint. First, entry barriers can and do change as the conditions previously described change. The expiration of Polaroid's basic patents on instant photography, for instance, greatly reduced its absolute cost entry barrier built by proprietary technology. It is not surprising that Kodak plunged into the market. Product differentiation in the magazine printing industry has all but disappeared, reducing barriers. Conversely, in the auto industry, economies of scale increased with post-World War II automation and vertical integration, virtually stopping successful new entry.

Second, although entry barriers sometimes change for reasons largely outside the firm's control, the firm's strategic decisions also can have a major impact. For example, the actions of many U. S. wine producers in the 1960s to step up introductions of new products, raise advertising levels, and undertake national distribution surely increased entry barriers by raising economies of scale in the industry and making access to distribution channels more difficult. Similarly, decisions by members of the recreational vehicle industry to vertically integrate into parts manufacture in order to lower costs have greatly increased the economies of scale there and raised the capital cost barriers.

Finally, some firms may possess resources or skills which allow them to overcome entry barrier into an industry more cheaply than most other firms. For example, Gillette, with well-developed distribution channels for razors and blades, faced lower costs of entry into disposable lighters than did many other firms. The ability to share costs also provides opportunities for low-cost entry. (In Chapter 16 we will explore the implications of factors like these for entry strategy in some detail).

#### **E**XPERIENCE AND **S**CALE AS **E**NTRY **B**ARRIERS

Although they often coincide, economies of scale and experience have very different properties as entry barriers. The presence of economies of scale *always* leads to a cost advantage for the large-scale firm (or firm that can share activities) over small-scale firms, presupposing that the former have the most efficient facilities, distribution systems, service organizations, or other functional activities for their size.<sup>5</sup> This cost advantage can be matched only by attaining comparable scale or appropriate diversification to allow cost sharing. The large-scale or diversified firm can spread the fixed costs of operating these efficient facilities over a large number of units, whereas the smaller firm, even if it has technologically efficient facilities, will not fully utilize them.

Some limits to economies of scale as an entry barrier, from the strategic standpoint of incumbents, are as follows:

- Large-scale and hence lower costs may involve trade-offs with other potentially valuable barriers to entry such as product differentiation (scale may work against product image or responsive service, for example) or the ability to develop proprietary technology rapidly.
- Technological change may penalize the large-scale firm if facilities designed to reap scale economies are also more specialized and less flexible in adapting to new technologies.
- Commitment to achieving scale economies by using existing technology may cloud the perception of new technological possibilities or of other new ways of competing that are less dependent on scale.

Experience is a more ethereal entry barrier than scale, because the mere presence of an experience curve does not insure an entry barrier. Another crucial prerequisite is that the experience be proprietary, and not available to competitors and potential entrants through (1) copying, (2) hiring a competitor's employees, or (3) purchasing the latest machinery from equipment suppliers or purchasing know-how from consultants or other firms. Frequently, experience cannot be kept proprietary; even when it can, experience may accumulate more rapidly for the second and third firms in the market than it did for the pioneer because followers can observe some aspects of the pioneer's operations. Where experience cannot be kept proprietary, new entrants may actually have an advantage if they can buy the latest equipment or adapt to new methods unencumbered by having operated the old way in the past.

Other limits to the experience curve as an entry barrier are as follows:

- The barrier can be nullified by product or process innovations leading to a substantially new technology and thereby creating an entirely new experience curve.<sup>6</sup> New entrants can leapfrog the industry leaders and alight on the new experience curve, to which the leaders may be poorly positioned to jump.
- Pursuit of low cost through experience may involve trade-offs with other valuable barriers, such as product differentiation through image or technological progressiveness. For example, Hewlett-Packard has erected substantial barriers based on technological progressiveness in industries in which other firms are following strategies based on experience and scale, like calculators and minicomputers.
- If more than one strong company is building its strategy on the experience curve, the consequences for one or more of them can be nearly fatal. By the time only one rival is left pursuing such a strategy, industry growth may have stopped and the prospects of capturing the experience curve benefits long since evaporated.
- Aggressive pursuit of cost declines through experience may draw attention away from market developments in other areas or may cloud perception of new technologies that nullify past experience.

## INTENSITY OF RIVALRY AMONG EXISTING COMPETITORS

Rivalry among existing competitors takes the familiar form of jockeying for position—using tactics like price competition, advertising battles, product introductions, and increased customer service or warranties. Rivalry occurs because one or more competitors either feels the pressure or sees the opportunity to improve position. In most industries, competitive moves by one firm have noticeable effects on its competitors and thus may incite retaliation or efforts to counter the move; that is, firms are *mutually dependent*. This pattern of action and reaction may or may not leave the initiating firm and the industry as a whole better off. If moves and countermoves escalate, then all firms in the industry may suffer and be worse off than before.

Some forms of competition, notably price competition, are highly unstable and quite likely to leave the entire industry worse off from the standpoint of profitability. Price cuts are quickly and easily matched by rivals, and once matched they lower revenues for all firms unless industry price elasticity of demand is high enough. Advertising battles, on the other hand, may well expand demand or enhance the level of product differentiation in the industry for the benefit of all firms.

Rivalry in some industries is characterized by such phrases as “warlike,” “bitter,” or “cutthroat,” whereas in other industries it is termed “polite” or “gentlemanly.” Intense rivalry is the result of a number of interacting structural factors.

*Numerous or Equally Balanced Competitors.* When firms are numerous, the likelihood of mavericks is great and some firms may habitually believe they can make moves without being noticed. Even where there are relatively few firms, if they are relatively balanced in terms of size and perceived resources, it creates instability because they may be prone to fight each other and have the resources for sustained and vigorous retaliation. When the industry is highly concentrated or dominated by one or a few firms, on the other hand, then there is little mistaking relative strength, and the leader or leaders can impose discipline as well as play a coordinative role in the industry through devices like price leadership.

In many industries foreign competitors, either exporting into the industry or participating directly through foreign investment, play an important role in industry competition. Foreign competitors, although having some differences that will be noted later, should be treated just like national competitors for purposes of structural analysis.

*Slow Industry Growth.* Slow industry growth turns competition into a market share game for firms seeking expansion. Market share competition is a great deal more volatile than is the situation in which rapid industry growth insures that firms can improve results just by keeping up with the industry, and where all their financial and managerial resources may be consumed by expanding with the industry.

*High Fixed or Storage Costs.* High fixed costs create strong pressures for all firms to fill capacity which often lead to rapidly escalating price cutting when excess capacity is present. Many basic materials like paper and aluminum suffer from this problem, for example. The significant characteristic of costs is fixed costs relative to value added, and not fixed costs as a proportion of total costs. Firms purchasing a high proportion of costs in outside inputs (low value added) may feel enormous pressures to fill capacity to break even, despite the fact that the absolute proportion of fixed costs is low.

A situation related to high fixed costs is one in which the product, once produced, is very difficult or costly to store. Here firms will also be vulnerable to temptations to shade prices in order to insure sales. This sort of pressure keeps profits low in industries like lobster fishing and the manufacture of certain hazardous chemicals and some service businesses.

*Lack of Differentiation or Switching Costs.* Where the product or service is perceived as a commodity or near commodity, choice by the buyer is largely based on price and service, and pressures for intense price and service competition result. These forms of competition are particularly volatile, as has been discussed. Product differentiation, on the other hand, creates layers of insulation against competitive warfare because buyers have preferences and loyalties to particular sellers. Switching costs, described earlier, have the same effect.

*Capacity Augmented in Large Increments.* Where economies of scale dictate that capacity must be added in large increments, capacity additions can be chronically disruptive to the industry supply/demand balance, particularly where there is a risk of bunching capacity additions. The industry may face recurring periods of overcapacity and price cutting, like those that afflict the manufacture of chlorine, vinyl chloride, and ammonium fertilizer. The conditions leading to chronic overcapacity are discussed in Chapter 15.

*Diverse Competitors.* Competitors diverse in strategies, origins, personalities, and relationships to their parent companies have differing goals and differing strategies for how to compete and may continually run head on into each other in the process. They may have a hard time reading each other's intentions accurately and agreeing on a set of "rules of the game" for the industry. Strategic choices right for one competitor will be wrong for others.

Foreign competitors often add a great deal of diversity to industries because of their differing circumstances and often differing goals. Owner-operators of small manufacturing or service firms may as well, because they may be satisfied with a subnormal rate of return on their invested capital to maintain the independence of self-ownership, whereas such returns are unacceptable and may appear irrational to a large publicly held competitor. In such an industry, the posture of the small firms may limit the profitability of the larger concern. Similarly, firms viewing a market as an outlet for excess capacity (e.g., in the case of dumping) will adopt policies contrary to those of firms viewing the market as a primary one. Finally, differences in the relationship of competing business units to their corporate parents is an important source of diversity in an industry as well. For example, a business unit that is part of a vertical chain of businesses in its corporate organization may well adopt different and perhaps contradictory goals than a free-standing firm competing in the same industry. Or a business unit that is a "cash cow" in its parent company's portfolio of businesses will behave differently than one that is being developed for long-run growth in view of a lack of other opportunities in the parent. (Some techniques for identifying diversity in competitors will be developed in Chapter 3.)

*High Strategic Stakes.* Rivalry in an industry becomes even more volatile if a number of firms have high stakes in achieving success there.

For example, a diversified firm may place great importance on achieving success in a particular industry in order to further its overall corporate strategy. Or a foreign firm like Bosch, Sony, or Philips may perceive a strong need to establish a solid position in the U.S. market in order to build global prestige or technological credibility. In such situations, the goals of these firms may not only be diverse but even more destabilizing because they are expansionary and involve potential willingness to sacrifice profitability. (Some techniques for assessing strategic stakes will be developed in Chapter 3.)

*High Exit Barriers.* Exit barriers are economic, strategic, and emotional factors that keep companies competing in businesses even though they may be earning low or even negative returns on investment. The major sources<sup>7</sup> of exit barriers are the following:

- Specialized assets: assets highly specialized to the particular business or location have low liquidation values or high costs of transfer or conversion.
- Fixed costs of exit: these include labor agreements, resettlement costs, maintaining capabilities for spare parts, and so on.
- Strategic interrelationships: interrelationships between the business unit and others in the company in terms of image, marketing ability, access to financial markets, shared facilities, and so on. They cause the firm to attach high strategic importance to being in the business.
- Emotional barriers: management's unwillingness to make economically justified exit decisions is caused by identification with the particular business, loyalty to employees, fear for one's own career, pride, and other reasons.
- Government and social restrictions: these involve government denial or discouragement of exit out of concern for job loss and regional economic effects; they are particularly common outside the United States.

When exit barriers are high, excess capacity does not leave the industry, and companies that lose the competitive battle do not give up.

Rather, they grimly hang on and, because of their weakness, have to resort to extreme tactics. The profitability of the entire industry can be persistently low as a result.

### **S**HIFTING **R**IVALRY

The factors that determine the intensity of competitive rivalry can and do change. A very common example is the change in industry growth brought about by industry maturity. As an industry matures its growth rate declines, resulting in intensified rivalry, declining profits, and (often) a shake-out. In the booming recreational vehicle industry of the early 1970s nearly every producer did well, but slow growth since then has eliminated the high returns, except for the strongest competitors, not to mention forcing many of the weaker companies out. The same story has been played out in industry after industry: snowmobiles, aerosol packaging, and sports equipment are just a few examples.

Another common change in rivalry occurs when an acquisition introduces a very different personality to an industry, as has been the case with Philip Morris' acquisition of Miller Beer and Procter and Gamble's acquisition of Charmin Paper Company. Also, technological innovation can boost the level of fixed costs in the production process and raise the volatility of rivalry, as it did in the shift from batch to continuous-line photofinishing in the 1960s.

Although a company must live with many of the factors that determine the intensity of industry rivalry—because they are built into industry economics—it may have some latitude in improving matters through strategic shifts. For example, it may try to raise buyers' switching costs by providing engineering assistance to customers to design its product into their operations or to make them dependent for technical advice. Or the firm can try to raise product differentiation through new kinds of services, marketing innovations, or product changes. Focusing selling efforts on the fastest growing segments of the industry or on market areas with the lowest fixed costs can reduce the impact of industry rivalry. Also, if it is feasible a company can try to avoid confronting competitors with high exit barriers and can thus sidestep involvement in bitter price cutting, or it can lower its own exit barriers. (Competitive moves will be explored in detail in Chapter 5.)

### **E**XIT **B**ARRIERS AND **E**NTRY **B**ARRIERS

Although exit barriers and entry barriers are conceptually different, their joint level is an important aspect of the analysis of an industry.

Often exit and entry barriers are related. Substantial economies of scale in production, for example, are usually associated with specialized assets, as is the presence of proprietary technology.

Taking the simplified case in which exit and entry barriers can be either high or low:

		<b>Exit Barriers</b>	
		Low	High
<b>Entry Barriers</b>	Low	Low, stable returns	Low, risky returns
	High	High, stable returns	High, risky returns

The best case from the viewpoint of industry profits is one in which entry barriers are high but exit barriers are low. Here entry will be deterred, and unsuccessful competitors will leave the industry. When both entry and exit barriers are high, profit potential is high but is usually accompanied by more risk. Although entry is deterred, unsuccessful firms will stay and fight in the industry.

The case of low entry and exit barriers is merely unexciting, but the worst case is one in which entry barriers are low and exit barriers are high. Here entry is easy and will be attracted by upturns in economic conditions or other temporary windfalls. However, capacity will not leave the industry when results deteriorate. As a result capacity stacks up in the industry and profitability is usually chronically poor. An industry might be in this unfortunate position, for example, if suppliers or lenders will readily finance entry, but once in, the firm faces substantial fixed financing costs.

## **PRESSURE FROM SUBSTITUTE PRODUCTS**

All firms in an industry are competing, in a broad sense, with industries producing substitute products. Substitutes limit the potential returns of an industry by placing a ceiling on the prices firms in the

industry can profitably charge.<sup>8</sup> The more attractive the price-performance alternative offered by substitutes, the firmer the lid on industry profits.

Sugar producers confronted with the large-scale commercialization of high fructose corn syrup, a sugar substitute, are learning this lesson today, as have the producers of acetylene and rayon who faced extreme competition from alternative, lower-cost materials for many of their respective applications. Substitutes not only limit profits in normal times, but they also reduce the bonanza an industry can reap in boom times. In 1978 the producers of fiberglass insulation enjoyed unprecedented demand as a result of high energy costs and severe winter weather. But the industry's ability to raise prices was tempered by the plethora of insulation substitutes, including cellulose, rock wool, and styrofoam. These substitutes are bound to become an ever stronger limit on profitability once the current round of plant additions has boosted capacity enough to meet demand (and then some).

Identifying substitute products is a matter of searching for other products that can perform the same *function* as the product of the industry. Sometimes doing so can be a subtle task, and one which leads the analyst into businesses seemingly far removed from the industry. Securities brokers, for example, are being increasingly confronted with such substitutes as real estate, insurance, money market funds, and other ways for the individual to invest capital, accentuated in importance by the poor performance of the equity markets.

Position vis-à-vis substitute products may well be a matter of *collective* industry actions. For example, although advertising by one firm may not be enough to bolster the industry's position against a substitute, heavy and sustained advertising by all industry participants may well improve the industry's collective position. Similar arguments apply to collective response in areas like product quality improvement, marketing efforts, providing greater product availability, and so on.

Substitute products that deserve the most attention are those that (1) are subject to trends improving their price-performance tradeoff with the industry's product, or (2) are produced by industries earning high profits. In the latter case, substitutes often come rapidly into play if some development increases competition in their industries and causes price reduction or performance improvement. Analysis of such trends can be important in deciding whether to try to head off a substitute strategically or to plan strategy with it as inevitably a key force. In the security guard

industry, for example, electronic alarm systems represent a potent substitute. Moreover, they can only become more important since labor-intensive guard services face inevitable cost escalation, whereas electronic systems are highly likely to improve in performance and decline in costs. Here, the appropriate response of security guard firms is probably to offer packages of guards and electronic systems, based on a redefinition of the security guard as a skilled operator, rather than to try to outcompete electronic systems across the board.

## **BARGAINING POWER OF BUYERS**

Buyers compete with the industry by forcing down prices, bargaining for higher quality or more services, and playing competitors against each other—all at the expense of industry profitability. The power of each of the industry's important buyer groups depends on a number of characteristics of its market situation and on the relative importance of its purchases from the industry compared with its overall business. A buyer group is powerful if the following circumstances hold true:

*It is concentrated or purchases large volumes relative to seller sales.* If a large portion of sales is purchased by a given buyer this raises the importance of the buyer's business in results. Large-volume buyers are particularly potent forces if heavy fixed costs characterize the industry—as they do in corn refining and bulk chemicals, for example—and raise the stakes to keep capacity filled.

*The products it purchases from the industry represent a significant fraction of the buyer's costs or purchases.* Here buyers are prone to expend the resources necessary to shop for a favorable price and purchase selectively. When the product sold by the industry in question is a small fraction of buyers' costs, buyers are usually much less price sensitive.

*The products it purchases from the industry are standard or undifferentiated.* Buyers, sure that they can always find alternative suppliers, may play one company against another, as they do in aluminum extrusion.

*It faces few switching costs.* Switching costs, defined earlier, lock the buyer to particular sellers. Conversely, the buyer's power is enhanced if the seller faces switching costs.

*It earns low profits.* Low profits create great incentives to lower purchasing costs. Suppliers to Chrysler, for example, are complaining

that they are being pressured for superior terms. Highly profitable buyers, however, are generally less price sensitive (that is, of course, if the item does not represent a large fraction of their costs) and may take a longer run view toward preserving the health of their suppliers.

*Buyers pose a credible threat of backward integration.* If buyers either are partially integrated or pose a credible threat of backward integration, they are in a position to demand bargaining concessions.<sup>9</sup> The major automobile producers, General Motors and Ford, are well known for using the threat of self-manufacture as a bargaining lever. They engage in the practice of *tapered integration*, that is, producing some of their needs for a given component in-house and purchasing the rest from outside suppliers. Not only is their threat of further integration particularly credible, but also partial manufacture in-house gives them a detailed knowledge of costs which is a great aid in negotiation. Buyer power can be partially neutralized when firms in the industry offer a threat of forward integration into the buyers' industry.

*The industry's product is unimportant to the quality of the buyers' products or services.* When the quality of the buyers' products is very much affected by the industry's product, buyers are generally less price sensitive. Industries in which this situation exists include oil-field equipment, where a malfunction can lead to large losses (witness the enormous cost of the recent failure of a blowout preventor in a Mexican offshore oil well), and enclosures for electronic medical and test instruments, where the quality of the enclosure can greatly influence the user's impression about the quality of the equipment inside.

*The buyer has full information.* Where the buyer has full information about demand, actual market prices, and even supplier costs, this usually yields the buyer greater bargaining leverage than when information is poor. With full information, the buyer is in a greater position to insure that it receives the most favorable prices offered to others and can counter suppliers' claims that their viability is threatened.

Most of these sources of buyer power can be attributed to consumers as well as to industrial and commercial buyers; only a modification of the frame of reference is necessary. For example, consumers tend to be more price sensitive if they are purchasing products that are undifferentiated, expensive relative to their incomes, or of a sort where quality is not particularly important to them.

The buyer power of wholesalers and retailers is determined by the same rules, with one important addition. Retailers can gain significant

bargaining power over manufacturers when they can *influence consumers' purchasing decisions*, as they do in audio components, jewelry, appliances, sporting goods, and other products. Wholesalers can gain bargaining power, similarly, if they can influence the purchase decisions of the retailers or other firms to which they sell.

### **ALTERING BUYER POWER**

As the factors described above change with time or as a result of a company's strategic decisions, naturally the power of buyers rises or falls. In the ready-to-wear clothing industry, for example, as the buyers (department stores and clothing stores) have become more concentrated and control has passed to large chains, the industry has come under increasing pressure and has suffered falling margins. The industry has been unable to differentiate its product or engender switching costs that lock in its buyers enough to neutralize these trends, and the influx of imports has not helped.

A company's choice of buyer groups to sell to should be viewed as a crucial strategic decision. A company can improve its strategic posture by finding buyers who possess the least power to influence it adversely—in other words, *buyer selection*. Rarely do all the buyer groups a company sells to enjoy equal power. Even if a company sells to a single industry, segments usually exist within that industry which exercise less power (and that are therefore less price sensitive) than others. For example, the replacement market for most products is less price sensitive than the OEM market. (I will explore buyer selection as a strategy more fully in Chapter 6.)

### **BARGAINING POWER OF SUPPLIERS**

Suppliers can exert bargaining power over participants in an industry by threatening to raise prices or reduce the quality of purchased goods and services. Powerful suppliers can thereby squeeze profitability out of an industry unable to recover cost increases in its own prices. By raising their prices, for example, chemical companies have contributed to the erosion of profitability of contract aerosol packagers because the packagers, facing intense competition from self-manufacture by their buyers, accordingly have limited freedom to raise their prices.

The conditions making suppliers powerful tend to mirror those making buyers powerful. A supplier group is powerful if the following apply:

*It is dominated by a few companies and is more concentrated than the industry it sells to.* Suppliers selling to more fragmented buyers will usually be able to exert considerable influence in prices, quality, and terms.

*It is not obliged to contend with other substitute products for sale to the industry.* The power of even large, powerful suppliers can be checked if they compete with substitutes. For example, suppliers producing alternative sweeteners compete sharply for many applications even though individual firms are large relative to individual buyers.

*The industry is not an important customer of the supplier group.* When suppliers sell to a number of industries and a particular industry does not represent a significant fraction of sales, suppliers are much more prone to exert power. If the industry is an important customer, suppliers' fortunes will be closely tied to the industry and they will want to protect it through reasonable pricing and assistance in activities like R&D and lobbying.

*The suppliers' product is an important input to the buyer's business.* Such an input is important to the success of the buyer's manufacturing process or product quality. This raises the supplier power. This is particularly true where the input is not storable, thus enabling the buyer to build up stocks of inventory.

*The supplier group's products are differentiated or it has built up switching costs.* Differentiation or switching costs facing the buyers cut off their options to play one supplier against another. If the supplier faces switching costs the effect is the reverse.

*The supplier group poses a credible threat of forward integration.* This provides a check against the industry's ability to improve the terms on which it purchases.

We usually think of suppliers as other firms, but *labor* must be recognized as a supplier as well, and one that exerts great power in many industries. There is substantial empirical evidence that scarce, highly skilled employees and/or tightly unionized labor can bargain away a significant fraction of potential profits in an industry. The principles in determining the potential power of labor as a supplier are similar to those just discussed. The key additions in assessing the power of labor are its *degree of organization*, and whether the supply of scarce varieties of labor can *expand*. Where the labor force is tightly organized or the supply of scarce labor is constrained from growing, the power of labor can be high.

The conditions determining suppliers' power are not only subject to change but also often out of the firm's control. However, as with buyers' power the firm can sometimes improve its situation through strategy. It can enhance its threat of backward integration, seek to eliminate switching costs, and the like. (Chapter 6 will explore some implications of suppliers' power for purchasing strategy more fully.)

### **G**OVERNMENT AS A **F**ORCE IN **I**NDUSTRY **C**OMPETITION

Government has been discussed primarily in terms of its possible impact on entry barriers, but in the 1970s and 1980s government at all levels must be recognized as potentially influencing many if not all aspects of industry structure both directly and indirectly. In many industries, government *is* a buyer or supplier and can influence industry competition by the policies it adopts. For example, government plays a crucial role as a buyer of defense-related products and as a supplier of timber through the Forest Service's control of vast timber reserves in the western United States. Many times government's role as a supplier or buyer is determined more by political factors than by economic circumstances, and this is probably a fact of life. Government regulations can also set limits on the behavior of firms as suppliers or buyers.

Government can also affect the position of an industry with substitutes through regulations, subsidies, or other means. The U.S. government is strongly promoting solar heating, for example, using tax incentives and research grants. Government decontrol of natural gas is quickly eliminating acetylene as a chemical feedstock. Safety and pollution standards affect relative cost and quality of substitutes. Government can also affect rivalry among competitors by influencing industry growth, the cost structure through regulations, and so on.

Thus no structural analysis is complete without a diagnosis of how present and future government policy, at all levels, will affect structural conditions. For purposes of strategic analysis it is usually more illuminating to consider how government affects competition *through* the five competitive forces than to consider it as a force in and of itself. However, strategy may well involve treating government as an actor to be influenced.

# Structural Analysis and Competitive Strategy

Once the forces affecting competition in an industry and their underlying causes have been diagnosed, the firm is in a position to identify its strengths and weaknesses relative to the industry. From a strategic standpoint, the crucial strengths and weaknesses are the firm's posture vis-à-vis the underlying causes of each competitive force. Where does the firm stand against substitutes? Against the sources of entry barriers? In coping with rivalry from established competitors?

An effective competitive strategy takes offensive or defensive action in order to create a *defendable* position against the five competitive forces. Broadly, this involves a number of possible approaches:

- positioning the firm so that its capabilities provide the best defense against the existing array of competitive forces;
- influencing the balance of forces through strategic moves, thereby improving the firm's relative position; or
- anticipating shifts in the factors underlying the forces and responding to them, thereby exploiting change by choosing a strategy appropriate to the new competitive balance before rivals recognize it.

## **P**OSITIONING

The first approach takes the structure of the industry as given and matches the company's strengths and weaknesses to it. Strategy can be viewed as building defenses against the competitive forces or as finding positions in the industry where the forces are weakest.

Knowledge of the company's capabilities and of the causes of the competitive forces will highlight the areas where the company should confront competition and where avoid it. If the company is a low-cost producer, for example, it may choose to sell to powerful buyers while it takes care to sell them only products not vulnerable to competition from substitutes.

## **I**NFLUENCING THE **B**ALANCE

A company can devise a strategy that takes the offensive. This posture is designed to do more than merely cope with the forces themselves; it is meant to alter their causes.

Innovations in marketing can raise brand identification or otherwise differentiate the product. Capital investments in large-scale facilities or vertical integration affect entry barriers. The balance of forces is partly a result of external factors and partly within a company's control. Structural analysis can be used to identify the key factors driving competition in the particular industry and thus the places where strategic action to influence the balance will yield the greatest payoff.

### **E**XPLOITING **C**HANGE

Industry evolution is important strategically because evolution, of course, brings with it changes in the structural sources of competition. In the familiar product life-cycle pattern of industry development, for example, growth rates change, advertising is said to decline as the business becomes more mature, and the companies tend to integrate vertically.

These trends are not so important in themselves; what is critical is whether they affect the structural sources of competition. Consider vertical integration. In the maturing minicomputer industry, extensive vertical integration is taking place, both in manufacturing and in software development. This very significant trend is greatly raising economies of scale as well as the amount of capital necessary to compete in the industry. This in turn is raising barriers to entry and may drive some smaller competitors out of the industry once growth levels off.

Obviously, the trends holding the highest priority from a strategic standpoint are those that affect the most important sources of competition in the industry and those that bring new structural factors to the forefront. In contract aerosol packaging, for example, the trend toward less product differentiation is now dominant. This trend has increased buyers' powers, lowered the barriers to entry, and intensified rivalry.

Structural analysis can be used to predict the eventual profitability of an industry. In long-range planning the task is to examine each competitive force, forecast the magnitude of each underlying cause, and then construct a composite picture of the probable profit potential of the industry.

The outcome of such an exercise may differ a great deal from the existing industry structure. Today, for example, the solar heating business is populated by dozens and perhaps hundreds of companies, none with a major market position. Entry is easy, and competitors are battling to establish solar heating as a superior substitute for conventional heating methods.

The potential of solar heating will depend largely on the shape of the future barriers to entry, the improvement of the industry's position relative to substitutes, the ultimate intensity of competition, and the power captured by buyers and suppliers. These characteristics will, in turn, be influenced by such factors as the likelihood of establishment of brand identities, whether significant economies of scale or experience curves in equipment manufacture will be created by technological change, what will be the ultimate capital costs to enter, and the eventual extent of fixed costs in production facilities. (The process of industry structural evolution and the forces driving it will be explored in detail in Chapter 8.)

#### **D**IVERSIFICATION **S**TRATEGY

The framework for analyzing industry competition can be used in setting diversification strategy. It provides a guide for answering the extremely difficult question inherent in diversification decisions: "What is the potential of this business?" The framework may allow a company to spot an industry with a good future before this good future is reflected in the prices of acquisition candidates.

The framework can also help identify particularly valuable types of relatedness in diversification. For example, relatedness that allows the firm to overcome key entry barriers through shared functions or pre-existing relationships with distribution channels can be a fruitful basis for diversification. All these issues will be explored in more detail in Chapter 16.

# Structural Analysis and Industry Definition

A great deal of attention has been directed at defining the relevant industry as a crucial step in competitive strategy formulation. Numerous writers have also stressed the need to look beyond product to function in defining a business, beyond national boundaries to potential international competition, and beyond the ranks of one's competitors today to those that may become competitors tomorrow. As a result of these urgings, the proper definition of a company's industry or industries has become an endlessly debated subject. An important motive in this debate is the fear of overlooking latent sources of competition that may someday threaten the industry.

Structural analysis, by focusing broadly on competition well beyond existing rivals, should reduce the need for debates on where to draw industry boundaries. Any definition of an industry is essentially a choice of where to draw the line between established competitors and substitute products, between existing firms and potential entrants, and between existing firms and suppliers and buyers. Drawing these lines is inherently a matter of degree that has little to do with the choice of strategy.

If these broad sources of competition are recognized, however, and their relative impact assessed, then where the lines are actually drawn becomes more or less irrelevant to strategy formulation. Latent sources of competition will not be overlooked, nor will key dimensions of competition.

Definition of an industry is *not* the same as definition of where the firm wants to compete (defining *its* business), however. Just because the industry is defined broadly, for example, does not mean that the firm can or should compete broadly; and there may be strong benefits to competing in a group of related industries, as has been discussed. Decoupling industry definition and that of the businesses the firm wants to be in will go far in eliminating needless confusion in drawing industry boundaries.

## U<sub>SE OF</sub> S<sub>TRUCTURAL</sub> A<sub>NALYSIS</sub>

This chapter has identified a large number of factors that can potentially have an impact on industry competition.<sup>10</sup> Not all of them will be important in any one industry. Rather the framework can be used to

identify rapidly what are the crucial structural features determining the nature of competition in a particular industry. This is where the bulk of the analytical and strategic attention should be focused.