by Michael E. Porter

Industry Structure and Competitive Strategy: Keys to Profitability

The intensity of competition in an industry determines the degree to which investment inflows drive returns to the free market level, hence the ability of firms in the industry to sustain above average returns. Intensity of competition is not a matter of luck. The underlying economic and technological characteristics of the industry determine the strength of the five basic competitive forces—threat of new entrants, bargaining power of buyers, rivalry between existing competitors, threat of substitute products and bargaining power of suppliers. These forces range from intense in industries like tires, paper and steel, where no firm earns spectacular returns, to mild in industries such as oil field equipment and services, cosmetics and toiletries, where high returns are common.

The goal of competitive strategy for a company is to find a position in its industry where these competitive forces will do it the most good or the least harm. A company may take a defensive posture, positioning itself so that its capabilities provide the best defense against the existing array of competitive forces. Alternatively, it can take an offensive approach by developing strategies designed to influence the balance of existing forces or to exploit a change in the competitive balance before rivals recognize it.

The first step in structural analysis is an assessment of the competitive environment in which the company operates—the basic competitive forces and the strength of each in shaping industry structure. The second is an assessment of the company's own strategy—of how well it has positioned itself to prosper in this environment. Taken together, these steps are the key to forecasting a company's earning power.

THE success of a company's competitive strategy depends on how it relates to its environment. Although the relevant environment is very broad, encompassing social as well as economic forces, the key aspect of the company's environment is the industry or industries in which it operates. Industry structure has a strong influence in defining the rules of the competitive game as well as the strategies potentially available to the company.

The intensity of competition in an industry is not a matter of luck. Rather, competition is rooted in underlying industry economics and goes well beyond the established competitors. Not all industries have equal potential. They differ fundamentally in their ultimate profit potential as the collective strength of the forces of com-

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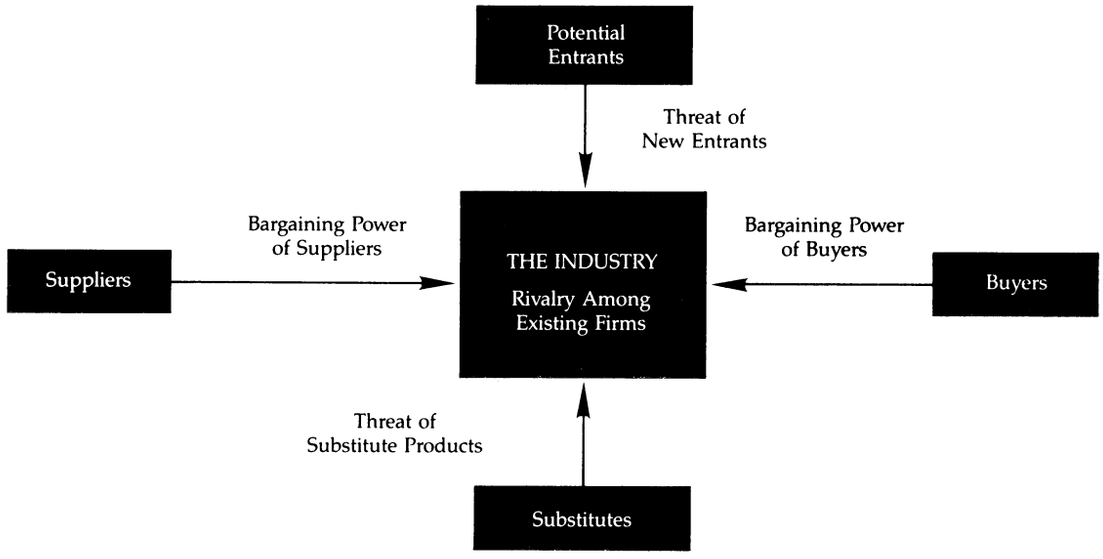
Figure I Forces Driving Industry Competition



petition differs; the forces range from intense in industries like tires, paper and steel, where no firm earns spectacular returns, to relatively mild in industries such as oil field equipment and services, cosmetics and toiletries, where high returns are common.

The essence of competitive strategy for a company is to find a position in its industry where it can best cope with these competitive forces or can influence them in its favor. Knowledge of the underlying sources of competitive pressure can reveal the basic attractiveness of an industry, highlight the critical strengths and weaknesses of a company, clarify the areas where strategic changes may yield the greatest payoff and pinpoint the industry trends that promise the greatest significance as either opportunities or threats.

Structural Determinants of Competition

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 for very long before switching their investment to other vehicles, 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 drives the return down to the free market level, hence the ability of firms to sustain above-average returns.

The state of competition in an industry depends on five basic competitive forces, illustrated in Figure I. The collective strength of these forces determines the ultimate profit potential in the industry, where profit potential is measured in terms of return on invested capital. As Figure I demonstrates, competition extends well beyond the established players. Customers, suppliers, substitutes and potential entrants are all competitors and may be more or less prominent depending on the particular circumstances.

All five competitive forces jointly determine the intensity of industry competition and profitability, but the strongest force or forces 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 between existing competitors will limit potential returns.

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), while in tires it is powerful original equipment market buyers coupled with tough competitors. In the steel industry, the key forces are rivalry with foreign competitors and substitute materials.

The underlying *structure* of an industry, reflected in the strength of its five competitive forces, should be distinguished from the many short-run factors that can affect competition and profitability in a transient way. Fluctuations in economic conditions over the business cycle can influence the short-run profitability of nearly all firms in an industry, as can material shortages, strikes, spurts in demand and the like. While such factors have tactical significance, the focus of structural analysis is on identifying the stable, underlying characteristics of an industry—its economic and technological structure—that shape the arena in which competitive strategy must be set.

Industry structure can shift gradually over time, and firms will have unique strengths and weaknesses in dealing with structure. Yet understanding industry structure must be the starting point for strategy analysis. The key economic and technological characteristics critical to the strength of each competitive force are discussed below.

Threat of Entry

New entrants to an industry bring new capacity, the desire to gain market share and often substantial resources. They can bid down prices or inflate costs, reducing profitability. Companies diversifying through acquisition into an industry from other markets often apply their resources to cause a shake-up, as Philip Morris did with Miller beer. Thus acquisition into an industry with intent to build position should probably be viewed as entry, even if it doesn't add a competitor in the literal sense.

Most often, the decision whether or not to enter or diversify into an industry will depend on the *entry deterring price.* The entry deterring price is that which, adjusted for product quality and service, just balances the potential rewards from entry (forecast by the potential entrant) against the expected costs. Of course, incumbent firms may eliminate the threat of entry by pricing below the hypothetical entry deterring price. If they price above it, gains in terms of profitability may be short-lived, since potential entrants will forecast above-average profits from entry, and will enter.

The cost of entry into an industry will depend in part on the *probable reaction from existing competitors.* If a potential entrant expects the incumbents to respond forcefully to make its stay in the industry a costly and unpleasant one, it may well decide not to enter. If the industry has a history of vigorous retaliation to entrants, if the incumbent firms have substantial resources to fight back (including excess cash and unused borrowing capacity, excess productive capacity or great leverage with distribution channels or customers), or if the industry's growth is sufficiently slow that entry of a new competitor would depress the sales and financial performance of established firms, then potential entrants are likely to meet strong retaliation from incumbents.

The cost of entry will also depend importantly on *barriers to entry* into the industry. Entry barriers are features of an industry that give incumbents inherent advantages over potential entrants. A number of industry characteristics commonly lead to such barriers.

The *need to invest large financial resources in order to compete* creates a barrier to entry, whether those resources must be raised in the capital markets or not. While 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. Capital may be required not only for production facilities, but also for things like customer credit, inventories or covering start-up losses. Xerox created a major barrier to entry in copiers, for example, when it chose to rent copiers rather than sell them outright.

Potential entrants will generally be at a disadvantage in the *capital markets.* Unless a company is entering an industry through diversification, the newcomer is in an inherently riskier position than the established firms, and this will be reflected in the risk premiums it will have to pay to attract capital.

A potential entrant will face barriers if the industry is characterized by *economies of scale*—declines in unit costs of a product (or operation or function that goes into producing a product) as the absolute volume produced per period increases.[1] Scale economies deter entry by forcing the entrant either to come in at large scale and risk strong reaction from existing firms or to accept a cost disadvantage, both undesirable options. Scale economies can be present in nearly every function of a business—production, research and development, marketing, service

1. Footnotes appear at the end of article.

network, sales force utilization or 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 GE 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. In television set manufacturing, economies of scale are large in color tube production but less significant in cabinetmaking and set assembly. Each component of costs must be examined separately to determine the extent of economies of scale.

Scale economies may form a particularly significant entry barrier if the companies in an industry are generally diversified or vertically integrated. A company that is part of a multibusiness firm may be able to achieve scale economies if it is able to *share operations or functions* subject to economies of scale with other companies in the firm. Consider, for example, a company that manufactures small electric motors that go into industrial fans, hairdryers and cooling systems for electronic equipment assembled by other divisions of the firm. If its economies of scale in motor manufacturing extend beyond the number of motors needed in any one market, it 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 restraints imposed by limited volume of a given market.[2] The prospective entrant must be appropriately diversified or face a cost disadvantage.

The benefits of sharing are particularly potent when a company can incur *joint costs*. Joint costs occur where a firm producing product A (or an operation or function that is part of producing A) must inherently produce product B. For example, technological constraints limit the amount of space airline passenger services can devote to passengers, but make available cargo space and payload capacity. Since it can spread the cost of putting the plane into the air over both passengers and freight, the firm that competes in both passenger and freight may have a substantial advantage over the firm competing in only one market. A similar advantage accrues to businesses whose manufacturing processes result in by-products. The entrant that cannot capture the highest incremental revenue from the by-products will face a disadvantage if incumbent firms can.

The potential entrant also faces the possibility of foreclosure of inputs or markets for its product if most established competitors in the industry are *integrated* (operate in successive stages of production or distribution). In such cases, incumbents purchase from in-house units or sell their inputs in-house. The unintegrated entrant will face a difficult time getting comparable prices and may get "squeezed" if integrated competitors offer it different terms from those offered their captive units.

Entry can be deterred by an entrant's need to secure *distribution channels* for its products. Existing competitors may have ties with channels based on long relations, high quality service or even exclusive contracts whereby the channel is solely identified with a particular manufacturer. To the extent that logical distribution channels for the product are served by established firms, the newcomer must persuade the channels to accept its product, using price breaks, cooperative advertising allowances and other measures that generally cut into profits. A new food product, for example, must displace others from the fiercely competitive supermarket shelf via promotions, intense selling efforts or heavy advertising to create consumer pull. Sometimes this barrier to entry is so high that, to surmount it, a new firm must create an entirely new distribution channel in order to get into the industry.

Newcomers will find it particularly difficult to compete with established firms for distribution channels and buyers if the industry is characterized by *product differentiation*. Product differentiation means that established firms have brand identification and customer loyalties stemming from past advertising, customer service and product differences. Not infrequently, these firms can benefit from economies of scale as a result. The cost of creating a brand name, for instance, need only be borne once; the name may then be freely applied to other products of the company, subject only to any costs of modification. A newcomer, on the other hand, must spend heavily to overcome existing distributor and customer loyalties. Investments in building a brand name are particularly risky, since they are unrecoverable.

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.

Entry can also be deterred if *switching costs* are high. Switching costs are one-time costs of

switching brands or switching from one supplier's product to another's. Switching costs may include such things as employee retraining costs, the cost of new ancillary equipment, the cost and time needed to test or qualify a new source or to redesign a product or even the psychic costs of severing a relationship. If such costs are high, the entrant must offer a major improvement in cost or performance to induce the buyer to switch. For example, suppliers of intravenous solutions and kits for use in hospitals have different procedures for attaching solutions to patients, and the hardware for hanging the solution bottles are not compatible. This industry is characterized by relatively high returns.

Government policy may also represent a substantial entry barrier in some industries. Government can consciously or unconsciously limit or even foreclose entry into industries, using such controls as licensing requirements or limits on access to raw materials (e.g., coal lands or mountains suitable for ski areas). Government regulation restricts entry to such industries as trucking, railroads, liquor retailing, broadcasting and freight forwarding.

More subtle restrictions on entry can stem from government subsidies to incumbents or from governmental controls such as air and water pollution standards or product safety and efficacy regulations. Pollution control requirements can raise capital needed for entry and can increase required technological sophistication and even optimal scale of facilities. Standards for product testing, common in industries like food and other health-related products, can impose substantial lead times on getting into an industry, not only raising the cost of entry but giving established firms ample notice of impending entry and, sometimes, full knowledge of competitor products. Government policy in such areas certainly may have social benefits, but it often has second-order consequences for entry that go unrecognized.

While the barriers mentioned so far can perhaps be surmounted by entrants willing to invest the capital, established firms may have other *cost advantages* not replicable by potential entrants no matter what their size and attained economies of scale. For instance, some industries are characterized by *proprietary product technology*—know-how or techniques that are kept proprietary through patents or secrecy. In others, the established firms may have locked up the most *favorable raw material sources*, or tied up foreseeable raw material 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 salt dome sulphur deposits many years ago, before mineral right holders were aware of their value as a result of the Frasch mining technology. Discoverers of sulphur deposits were often disappointed oil companies exploring for oil. Similarly, established firms in some industries may have cornered *favorable locations* before market forces bid up prices to capture their full value. Potential newcomers will enter at a permanent competitive disadvantage.

Experience Curve

Another important factor that creates cost advantages is the *experience curve*. In some businesses, unit costs tend to decline as the firm gains more cumulative experience in production. Experience is just a name for certain kinds of technological change. Workers become more efficient (the classic learning curve), layout improves, equipment and processes become specialized. Changes in product design techniques and operations control make manufacturing easier.

Cost declines with experience seem to be most significant in businesses involving a high labor content and/or complex assembly operations (aircraft, shipbuilding). They are nearly always greatest in the early and growth phases of a product's development, diminishing in later phases.

In some ways, cost declines with experience operate in the same manner as scale economies. Experience can lower costs in marketing, distribution and other areas as well as production or operations within production, and each component of costs must be examined for experience effects. Diversification can enhance cost declines due to experience, since diversified firms can share operations or functions subject to experience cost declines and units in diversified firms can benefit from the experience gained by other related units. In the case where an activity like raw material fabrication is shared by multiple business units, experience obviously accumulates faster than it would if the activity were used solely to meet the needs of one company.

Economies of scale are often cited as one of the reasons costs decline with experience. But economies of scale are dependent on volume per period, not cumulative volume, and are very different analytically from cost declines with experience. Economies of scale and experience also have very different properties as entry barriers. The presence of economies of scale *always* leads

to a cost advantage for the large-scale or properly diversified firm over the small-scale or undiversified firm, presupposing that the large firm has the most efficient facilities, distribution systems, service organizations and other functional units for its size.

Experience is a more ethereal entry barrier than scale. The mere presence of an experience curve does not ensure an entry barrier. The experience must be proprietary—i.e., not available to competitors and potential entrants through (1) copying, (2) hiring competitors' employees or (3) purchasing the latest machinery from equipment suppliers or the relevant know-how from consultants or others.

If the experience curve can be kept proprietary by established firms, then they can erect an entry barrier. Newly started firms, with no experience, will have inherently higher costs than established firms and will have to incur heavy start-up losses from below or near-cost pricing before they can gain the experience requisite to cost parity with established firms. Because of their lower costs, established firms (particularly the market share leader) will have higher cash flows to invest in new equipment and technique. New entrants will never catch up. A number of firms (notably Texas Instruments, Black and Decker and Emerson Electric) have built successful strategies based on the experience curve through aggressive investments to build cumulative volume early in the development of their industries, often by pricing in anticipation of future cost declines.

Many times, however, experience cannot be kept proprietary. Even when it can, it may accumulate more rapidly for the second and third firms in the market than it did for the pioneer. The later firms can observe some aspects of the pioneer's operations. In situations 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.

An experience barrier can be nullified by product or process innovations leading to a substantially new technology that creates an entirely new experience curve.[3] New entrants can leapfrog the industry leaders and alight on the new experience curve, to which the leaders may be poorly positioned to jump. Similarly, technological change may penalize the large-scale firm if facilities designed to reap economies of scale are specialized, hence less flexible in adapting to new technologies.

Commitment either to achieving scale economies or to reducing costs through experience has some potential risks. It may cloud the perception of new technological possibilities, or of other ways of competing less dependent on scale or experience. Emphasis on scale over other valuable entry barriers such as product differentiation may work against image or responsive service. Hewlett-Packard has erected substantial barriers based on technological progressiveness in industries like calculators and minicomputers, where other firms are following strategies based on experience and scale.

Properties of Entry Barriers

All entry barriers can and do change as conditions in the industry 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 enormously with postwar automation and vertical integration, virtually stopping successful new entry.

While entry barriers sometimes change for reasons largely outside a company's control, company strategic decisions can have a major impact on entry barriers. In the 1960s, many U.S. wine producers stepped up product introductions, raised advertising levels and expanded distribution nationally, increasing entry barriers by raising economies of scale and product differentiation and making access to distribution channels more difficult. Similarly, decisions by members of the recreational vehicle industry to integrate vertically have greatly increased the economies of scale there.

Finally, some firms may possess resources or skills that allow them to overcome entry barriers into an industry more cheaply than most other firms. Gillette, with well developed distribution channels for razors and blades, faced lower costs of entry into disposable lighters than many other potential entrants would have faced.

Rivalry Between Existing Competitors

Rivalry between 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 feel pressured or see the opportunity to improve position. In most

industries, competitive moves by one firm have noticeable effects on its competitors and thus may incite retaliation. Firms are consequently *mutually dependent*.

A sequence of actions and reactions 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 likely to leave the entire industry worse off from a profitability standpoint. Price cuts are quickly and easily matched by rivals and, once matched, lower revenues for all firms unless industry price elasticity of demand is very great. Advertising battles, on the other hand, may well expand demand or raise the level of product differentiation in the industry, to the benefit of all firms.

Rivalry in some industries is characterized by such phrases as "warlike," "bitter" or "cutthroat," while in other industries it is termed "polite" or "gentlemanly." The intensity of rivalry can be traced to the presence of a number of interacting structural factors.

When the *competitors in an industry are numerous*, the likelihood of mavericks that will touch off rivalry is great, since some firms may believe they can make moves without being noticed. Even if there are relatively few firms, if they are *relatively balanced* in terms of the resources for sustained and vigorous retaliation, they may be prone to take each other on. On the other hand, when an industry is highly concentrated or dominated by one or a few firms, relative power will be stable and apparent to everyone, and the leader or leaders will be able to impose discipline through devices like price leadership.

Slow industry growth is generally a destabilizing force for rivalry, since it can turn competition into a market share game for firms seeking expansion. When industry growth is rapid, firms can improve results just by keeping up with the industry; in fact, all their financial and managerial resources may be consumed by expanding with the industry.

High fixed costs create strong pressures for all firms to fill capacity, which often leads to rapidly escalating price cutting. Many basic materials like paper and aluminum suffer from this problem. The key is fixed costs relative to value added, rather than the absolute level of fixed costs. Firms purchasing a high proportion of costs in outside inputs (low value added) may feel enormous pressures to fill capacity to break even, even if the absolute proportion of fixed costs is low. A similar situation faces industries whose products are very difficult or costly to store. Here firms will be vulnerable to temptations to shade prices in order to ensure sales. This sort of pressure keeps profits low in lobster fishing and in industries that manufacture certain hazardous chemicals.

When the industry *product is perceived as a commodity or near-commodity*, buyer choice will largely be dictated by price and service, creating strong pressures for price and service competition. Differentiation, on the other hand, creates layers of insulation against competitive warfare because buyers have preferences and loyalties to particular sellers. Similar insulation against rivalry is provided by *switching costs* (defined earlier).

Rivalry is increased by pressures that lead to *chronic overcapacity*. For example, where economics dictate that capacity can be augmented only in large increments, capacity additions can be chronically disruptive to the industry supply-demand balance, particularly when there is a risk of bunching of capacity additions. The industry may face chronic periods of the kind of overcapacity and price cutting that afflict chlorine, vinyl chloride and ammonium fertilizer.

Competitors that are diverse in strategies, origins, personalities and relationships to their parent companies create volatile rivalry because they have differing goals and differing ideas about how to compete and are continually colliding head-on in the process. They have a hard time accurately reading each others' intentions and agreeing on the rules of the game for the industry. Strategic choices "right" for one competitor will be "wrong" for the 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 be willing to accept subnormal rates of return on their investment capital in exchange for independence; such low returns may appear unacceptable or 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 a dumping outlet for excess capacity will adopt policies contrary to those of firms that view the market as their main business.

Differences in the way companies competing in an industry relate to their corporate parents is another important source of diversity. A company that is one part of a vertical chain of busi-

nesses within its corporate organization may well adopt goals very different from those of a free-standing company competing in the same industry. A company that represents a "cash cow" in its parent company's portfolio of businesses will behave differently from one being developed for long-run growth.

Industry rivalry becomes even more volatile if a number of firms in the industry have *high stakes in achieving success.* 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. Such firms may be willing to sacrifice profitability for the sake of expansion.

Finally, industry rivalry can be volatile when an industry faces high *exit barriers*—factors that keep companies competing in businesses even though they may be earning low or even negative returns on investment. Excess capacity does not leave the industry, and companies that lose the competitive battle do not give up. Rather, they hang on grimly and, because of their weakness, sometimes resort to extreme tactics that can destroy the profitability of the entire industry.

Exit barriers may be high when assets are highly specialized to a particular business or location, hence difficult to liquidate; when labor agreements, resettlement costs or spare parts maintenance create fixed costs of exit; when interrelationships between one company and others in a multibusiness firm in terms of image, marketing ability, access to financial markets, shared facilities and so on lend the business broader strategic importance; when government denies or discourages exit because of job loss and regional economic effects (particularly common outside the U.S.); or when managements are unwilling to make economically justified exit decisions because of loyalty to employees, fear of the consequences for their own careers, pride or other emotional reasons.

While exit barriers and entry barriers are conceptually separate, their combination is an important aspect of the analysis of an industry. Exit and entry barriers often rise and fall together. The presence of substantial economies of scale in production, for example, usually implies specialized assets, as does the presence of proprietary technology. Figure II illustrates the possible combinations. The best case from the viewpoint of industry profits is where entry barriers are high but exit barriers are low. Here entry will be deterred and unsuccessful competitors will leave the industry. Where 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.

Figure II Exit and Entry Barriers Combine

ENTRY BARRIERS	EXIT BARRIERS: Low	EXIT BARRIERS: High
Low	Low Returns	Worst Case
High	Best Case	High Returns But Risky

While the case of low entry and exit barriers is unexciting from a profitability standpoint, the worst case is where entry barriers are low and exit barriers are high. Here entrants will be attracted by upturns in economic conditions or other temporary windfalls. They will not leave the industry, however, when results deteriorate. As a result, industry capacity will stack up and profitability will usually be chronically poor.

Shifting Rivalry

Industry features that determine the intensity of competitive rivalry can and do change. As an industry matures, its growth rate declines, resulting in intensified rivalry, declining profits and (often) a shakeout. 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 to all except the strongest members. The same story has been played out in industry after industry—snowmobiles, aerosol packaging and sports equipment, to name a few.

Rivalry can also shift when an acquisition introduces a very different personality into an industry. This has been the case with Philip Morris' acquisition of Miller Beer and Procter & 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.

While a company must live with many of the factors determining the intensity of industry rivalry that are built into industry economics, it may have some latitude to influence rivalry

through its choice of strategy. A company may try to raise buyers' switching costs by designing its product into its customers' operations or by making its customers dependent for technical advice. A company can attempt to raise product differentiation through new kinds of service, 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. If it is feasible, a company can try to avoid confrontation with competitors having high exit barriers, thus sidestepping involvement in bitter price cutting.

Pressure from Substitute Products

All firms in an industry are competing, in a broad sense, with industries producing substitute products. Substitutes limit the profit potential of an industry by placing a ceiling on the prices firms in the industry can charge. The more attractive the price-performance tradeoff offered by substitutes, the tighter 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 are producers of acetylene and rayon, who face tough competition from lower cost alternatives.

Substitutes not only limit profits in normal times, but 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 even stronger force once the current round of plant additions by fiberglass insulation producers has boosted capacity enough to meet demand (and then some).

Identifying substitute products entails searching for other products that can perform the same *function* as the product of the industry. Sometimes this can be a subtle task, one that takes the analyst into businesses seemingly far removed from the industry in question. Securities, for example, face increasing competition from alternative investments such as real estate, insurance and money market funds.

Government regulations, subsidies and tax policies should also be considered in the search for substitutes. The U.S. government is currently 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 also affect relative cost and quality of substitutes.

Attention should focus on substitute products that (a) are enjoying steady improvement in price-performance tradeoff with the industry's product, (b) would entail minimal switching costs for prospective buyers or (c) 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.

Effective defense against substitute products may require *collective industry action*. While advertising by one firm in an industry does little 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 against the substitute. Similar arguments apply to collective industry response through industry groups and other means in areas such as product quality improvement, marketing efforts and product distribution.

Trend analysis can be important in deciding whether company strategy should be directed toward heading off a substitute strategically or accepting the substitute as a key competitive force. Electronic alarm systems, for example, represent a potent substitute in the security guard industry. Electronic systems can only become more important as a substitute since labor-intensive guard services face inevitable cost escalation, while electronic systems are highly likely to improve in performance and decline in cost. Here the appropriate response of security guard firms is probably to offer packages of guards and electronic systems, with the security guard redefined as a skilled operator, rather than attempt to compete against electronic systems with a traditional guard service.

Bargaining Power of Buyers

Buyers represent a competitive force because they can bid down prices, demand higher quality or more services, and play competitors off against each other—all at the expense of industry profitability. The power of each important buyer group depends on a number of characteristics of its market situation and on the relative importance of its purchases from the industry compared with the industry's overall business.

A buyer group will be powerful if it *purchases large volumes relative to seller sales,* so that retaining

its business is financially important to the seller. Large volume buyers are particularly potent forces if heavy fixed costs characterize the industry (as in corn refining and bulk chemicals) and raise the stakes to keep capacity occupied.

Buyer power is enhanced if the products purchased from the industry *represent a significant fraction of total purchases.* In this case, the buyer will be prone to expend the resources necessary to shop for a favorable price and to purchase selectively. If the product sold by the industry is a small fraction of the buyer's costs, the buyer will usually be much less price sensitive. Similarly, a buyer suffering from *low profits* has great incentive to lower purchasing costs. Suppliers to Chrysler, for example, are complaining that they are being pressed for superior terms. Highly profitable buyers are generally less price sensitive and more concerned about the long-run health of their suppliers (that is, unless the purchase represents a large fraction of their costs). Buyer power is also increased if buyers have a lot of *information* about market conditions, supplier costs and offers to other buyers.

If buyers are either already partially integrated or *pose a strong threat of backward integration,* they are in a position to demand bargaining concessions. Major automobile producers like General Motors and Ford frequently use this bargaining lever. They engage in the practice of *tapered integration,* or 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 partial manufacture in-house gives them 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 buyer's industry.

Finally, the *impact of the supplier's product* on the buyer's business will help determine the bargaining power of purchasers. If the quality of the buyer's product is very much affected by the quality of the industry's product, the buyer will generally be less price sensitive. In oil field equipment, for instance, a malfunction can lead to large losses (as witness the enormous cost of the recent failure of a blowout preventer in a Mexican offshore oil well); the quality of enclosures for electronic medical and test instruments can greatly influence the user's impression about the quality of the equipment inside.

Finally, *switching costs* (defined earlier) lock the buyer to particular sellers and mitigate buyer power. On the other hand, if the industry's products 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.

Most sources of buyer power apply to consumer as well as to industrial and commercial buyers. For example, consumers tend to be more price sensitive if they are purchasing products that are undifferentiated or expensive relative to their incomes.

The power of wholesalers and retailers is determined by the same rules, with one important addition. Retailers can gain significant bargaining power over manufacturers if they can *influence consumers' purchasing decisions,* as they do in audio components, jewelry, appliances and sporting goods. Similarly, wholesalers can gain bargaining power if they can influence the decisions of the retailers or other firms to which they sell.

Altering Buying Power

The power of buyers can rise or fall as the underlying factors creating buyer power change with time or as a result of a company's strategic decisions. In the ready-to-wear clothing industry, for example, the buyers (department stores and clothing stores) have become more concentrated and control has passed to large chains; as a result, the industry has come under increasing buyer pressure and suffered falling profit margins. So far the industry has been unable to differentiate its products or to engender switching costs that would lock its buyers in sufficiently to neutralize these trends.

A company's choice of the buyer group it sells to is 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, by *buyer selection.* Rarely do all the buyer groups a company sells to enjoy equal power. Even if a company sells to a single industry, there are usually segments within that industry that exercise less power (and that are less price sensitive) than others. For example, the replacement market for most products is less price sensitive than the original equipment market.

Bargaining Power of Suppliers

Suppliers can exert a competitive force in an industry by raising prices or reducing the quality of the goods they sell. Such price increases can squeeze profitability out of an industry unable to recover cost increases in its own prices. By raising their prices, for example, chemical com-

panies have contributed to the erosion of profitability of contract aerosol packagers because the packagers, facing intense competition from self-manufacture by their customers, have limited freedom to raise their prices.

The conditions making suppliers powerful are largely the inverse of those making buyers powerful. If a supplier group is *dominated by a few companies and more concentrated than the industry it sells to,* it will be able to exert considerable influence on prices, quality and terms. On the other hand, the power of even large, powerful suppliers can be checked if they have to compete with *substitutes.* Industries producing alternative sweeteners, for example, compete sharply for many applications even though individual suppliers are large relative to individual customers.

If suppliers sell to a number of industries, so that one particular *industry does not represent a significant fraction of sales,* they will be much more prone to exert pricing pressure. If the industry is an important customer, suppliers' fortunes will be closely tied to the industry, and suppliers will want to protect the industry through reasonable pricing and assistance in activities like research and development and lobbying.

Differentiation and switching costs cut off buyers' options in playing one supplier off against another and raise supplier power. And a *credible threat of forward integration* provides a check against an industry's ability to improve the terms on which it purchases.

It is important to recognize *labor* as a supplier, and one that exerts great power in many industries. There is substantial empirical evidence that scarce, highly skilled employees (e.g., engineers and scientists) and/or tightly unionized labor can bargain away a significant fraction of potential profits in an industry. The features that determine the potential power of employees as a supplier include those outlined above plus labor's *degree of organization* and the ability of the supply of scarce varieties of employees to *expand.* Where labor is strongly organized and supply of scarce employees constrained from expansion, they can be a factor in competition.

Government, which has been discussed primarily in terms of its possible impact on entry barriers, must also be recognized as a potentially powerful buyer and supplier. In these roles, government can often influence industry competition by the policies it adopts. 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.

The conditions determining supplier power are frequently beyond a company's control. However, as with buyer power, the firm can sometimes improve its situation through strategy. It can promote a threat of backward integration, seek to eliminate switching costs and the like.

Structural Analysis and Competitive Strategy

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

Competitive strategy is taking offensive or defensive action in order to strengthen a company's position in relation to the five competitive forces—positioning the company so that its capabilities provide the best defense against the existing array of competitive forces, influencing the balance of forces through strategic moves that improve the company's relative position or anticipating shifts in the factors underlying the forces and responding so as to exploit change by choosing a strategy appropriate to the new competitive balance before rivals recognize it.

A *positioning strategy* takes the structure of the industry as given and matches the company's strengths and weaknesses to it, building defenses against the competitive forces or 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 it should avoid competition. If the company is a low cost producer, for example, it may choose to confront powerful buyers while it takes care to sell them only products not vulnerable to competition from substitutes.

Alternatively, a company can take an offensive approach by developing *strategies designed to influence the balance of competitive forces.* Innovations in marketing can raise brand identification or otherwise differentiate the company's product.

Capital investments in large-scale facilities or vertical integration can bolster entry barriers. Structural analysis can be used to identify the factors driving competition that will be most susceptible to strategic action.

Industry evolution is important strategically because evolution can present opportunities to *exploit changes in the sources of competition.* In the familiar product life cycle pattern of industry development, for example, growth rates change as the business matures, advertising declines and 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. For example, extensive vertical integration, both in manufacturing and in software development, is taking place in the maturing minicomputer industry. This very significant trend has greatly increased economies of scale as well as the amount of capital necessary to compete in the industry. This in turn has raised entry barriers and threatens to drive some smaller competitors out of the industry.

Obviously, the trends carrying the highest priority from a strategic standpoint are those that affect the most important sources of competition in the industry and those that elevate new structural factors to the forefront. In contract aerosol packaging, for instance, the dominant trend toward less product differentiation has increased the power of buyers, lowered the barriers to entry and intensified competition.

The task of structural analysis in the long run is to examine each competitive force, forecast the magnitude of each underlying cause and construct a composite picture of the likely profit potential of the industry. Of course, this picture may differ considerably from present realities. Today, 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 future barriers to entry, the improvement of the industry's position relative to substitutes, the ultimate intensity of competition and the power that will be captured by buyers and suppliers. These characteristics will, in turn, be influenced by such factors as the establishment of brand identities, the creation of significant economies of scale or experience curves in equipment manufacture, the ultimate capital costs and the eventual importance of fixed costs in production.

Of course, no structural analysis can be complete without a diagnosis of how present and future government policy, at all levels, may affect competitive 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 a factor to be influenced.

Structural Analysis and Diversification

The framework for analyzing industry competition is obviously useful in setting diversification strategy, since 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 potential is reflected in the prices of acquisition candidates. It will also help a company identify industries where its strengths will allow it to overcome entry barriers more cheaply than other firms. And the framework can help in identifying acquisitions that can take advantage of existing operations—for example, acquisitions that would allow a firm to overcome key entry barriers by providing shared functions or preexisting relations with distribution channels. ■

Footnotes

1. To avoid needless repetition, the term "product," rather than "product or service," is used throughout to refer to the output of an industry. The principles of structural analysis will apply equally to product and service businesses. They also apply to industry competition in any country or international market, although some of the institutional circumstances may differ.
2. For this entry barrier to be significant, it is crucial that the shared operation or function be subject to economies of scale that extend beyond the size of any one market. If this is not the case, cost savings of sharing can be illusory. A company may see its costs decline after entering a related business as overhead is spread, but this depends solely on the presence of excess capacity in the operation or function in the base business. Such economies are short run, and once capacity is fully utilized the true cost of the shared operation will become apparent.
3. For an example of this drawn from the history of the automobile industry, see William J. Abernathy and Kenneth Wayne, "The Limits of the Learning Curve," *Harvard Business Review,* September-October 1974, p. 109.