B301 Making sense of strategy

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Business School

Readings

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Reading 1: The five competitive forces that shape strategy

Michael E. Porter

Porter, M. E. (2008) 'The Five Competitive Forces That Shape Strategy', *Harvard Business Review*, January, pp. 78–93.

Editor's Note: *In 1979, Harvard Business Review published "How Competitive Forces Shape Strategy" by a young economist and associate professor, Michael E. Porter. It was his first HBR article, and it started a revolution in the strategy field. In subsequent decades, Porter has brought his signature economic rigor to the study of competitive strategy for corporations, regions, nations, and, more recently, health care and philanthropy. "Porter's five forces" have shaped a generation of academic research and business practice. With prodding and assistance from Harvard Business School Professor Jan Rivkin and longtime colleague Joan Magretta, Porter here reaffirms, updates, and extends the classic work. He also addresses common misunderstandings, provides practical guidance for users of the framework, and offers a deeper view of its implications for strategy today.*

IN ESSENCE, the job of the strategist is to understand and cope with competition. Often, however, managers define competition too narrowly, as if it occurred only among today's direct competitors. Yet competition for profits goes beyond established industry rivals to include four other competitive forces as well: customers, suppliers, potential entrants, and substitute products. The extended rivalry that results from all five forces defines an industry's structure and shapes the nature of competitive interaction within an industry.

As different from one another as industries might appear on the surface, the underlying drivers of profitability are the same. The global auto industry, for instance, appears to have nothing in common with the worldwide market for art masterpieces or the heavily regulated health-care delivery industry in Europe. But to understand industry competition and profitability in each of those three cases, one must analyze the industry's underlying structure in terms of the five forces. (See [Figure 1].)

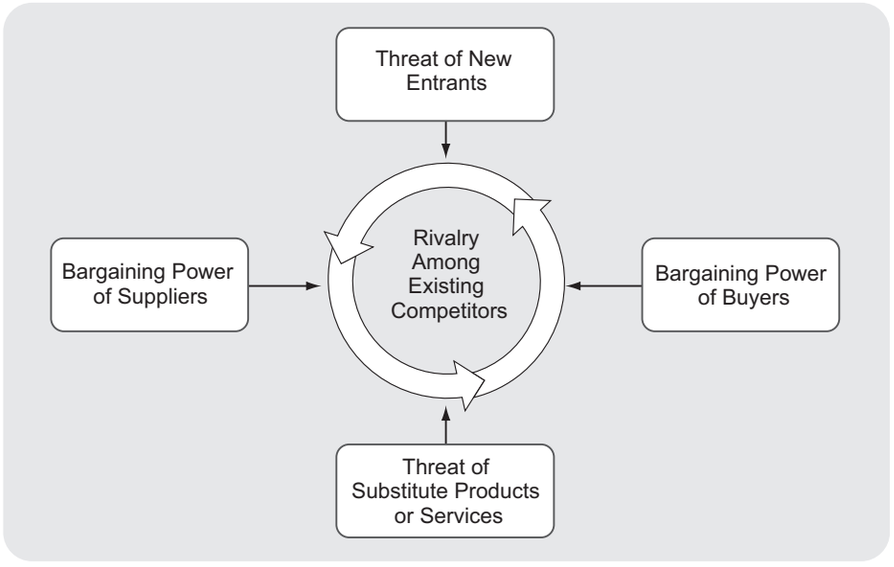

Figure 1: The five forces that shape industry competition

If the forces are intense, as they are in such industries as airlines, textiles, and hotels, almost no company earns attractive returns on investment. If the forces are benign, as they are in industries such as software, soft drinks, and toiletries, many companies are profitable. Industry structure drives competition and profitability, not whether an industry produces a product or service, is emerging or mature, high tech or low tech, regulated or unregulated. While a myriad of factors can affect industry profitability in the short run – including the weather and the business cycle – industry structure, manifested in the competitive forces, sets industry profitability in the medium and long run. (See [Side note 1].)

Side note 1: Differences in industry profitability The average return on invested capital varies markedly from industry to industry. Between 1992 and 2006, for example, average return on invested capital in U.S. industries ranged as low as zero or even negative to more than 50%. At the high end are industries like soft drinks and prepackaged software, which have been almost six times more profitable than the airline industry over the period.

Understanding the competitive forces, and their underlying causes, reveals the roots of an industry's current profitability while providing a framework for anticipating and influencing competition (and profitability) over time. A healthy industry structure should be as much a competitive concern to strategists as their company's own position. Understanding industry structure is also essential to effective strategic positioning. As we will see, defending against the competitive forces and shaping them in a company's favor are crucial to strategy.

Forces that shape competition

The configuration of the five forces differs by industry. In the market for commercial aircraft, fierce rivalry between dominant producers Airbus and Boeing and the bargaining power of the airlines that place huge orders for aircraft are strong, while the threat of entry, the threat of substitutes, and the power of suppliers are more benign. In the movie theater industry, the proliferation of substitute forms of entertainment and the power of the movie producers and distributors who supply movies, the critical input, are important.

The strongest competitive force or forces determine the profitability of an industry and become the most important to strategy formulation. The most salient force, however, is not always obvious.

For example, even though rivalry is often fierce in commodity industries, it may not be the factor limiting profitability. Low returns in the photographic film industry, for instance, are the result of a superior substitute product – as Kodak and Fuji, the world's leading producers of photographic film, learned with the advent of digital photography. In such a situation, coping with the substitute product becomes the number one strategic priority.

Industry structure grows out of a set of economic and technical characteristics that determine the strength of each competitive force. We will examine these drivers in the pages that follow, taking the perspective of an incumbent, or a company already present in the industry. The analysis can be readily extended to understand the challenges facing a potential entrant.

THREAT OF ENTRY. New entrants to an industry bring new capacity and a desire to gain market share that puts pressure on prices, costs, and the rate of investment necessary to compete. Particularly when new entrants are diversifying from other markets, they can leverage existing capabilities and cash flows to shake up competition, as Pepsi did when it entered the bottled water industry, Microsoft did when it began to offer internet browsers, and Apple did when it entered the music distribution business.

The threat of entry, therefore, puts a cap on the profit potential of an industry. When the threat is high, incumbents must hold down their prices or boost investment to deter new competitors. In specialty coffee retailing, for example, relatively low entry barriers mean that Starbucks must invest aggressively in modernizing stores and menus.

The threat of entry in an industry depends on the height of entry barriers that are present and on the reaction entrants can expect from incumbents. If entry barriers are low and newcomers expect little retaliation from the entrenched competitors, the threat of entry is high and industry profitability is moderated. It is the *threat* of entry, not whether entry actually occurs, that holds down profitability.

Barriers to entry. Entry barriers are advantages that incumbents have relative to new entrants. There are seven major sources:

1 *Supply-side economies of scale.* These economies arise when firms that produce at larger volumes enjoy lower costs per unit because they can spread fixed costs over more units, employ more efficient technology, or command better terms from suppliers. Supply-side scale economies deter entry by forcing the aspiring entrant either to come into the industry on a large scale, which requires dislodging entrenched competitors, or to accept a cost disadvantage.

   Scale economies can be found in virtually every activity in the value chain; which ones are most important varies by industry.[1] In microprocessors, incumbents such as Intel are protected by scale economies in research, chip fabrication, and consumer marketing. For lawn care companies like Scotts Miracle-Gro, the most important scale economies are found in the supply chain and media advertising. In small-package delivery, economies of scale arise in national logistical systems and information technology.

2 *Demand-side benefits of scale.* These benefits, also known as network effects, arise in industries where a buyer's willingness to pay for a

company's product increases with the number of other buyers who also patronize the company. Buyers may trust larger companies more for a crucial product: Recall the old adage that no one ever got fired for buying from IBM (when it was the dominant computer maker). Buyers may also value being in a "network" with a larger number of fellow customers. For instance, online auction participants are attracted to eBay because it offers the most potential trading partners. Demand-side benefits of scale discourage entry by limiting the willingness of customers to buy from a newcomer and by reducing the price the newcomer can command until it builds up a large base of customers.

3 *Customer switching costs.* Switching costs are fixed costs that buyers face when they change suppliers. Such costs may arise because a buyer who switches vendors must, for example, alter product specifications, retrain employees to use a new product, or modify processes or information systems. The larger the switching costs, the harder it will be for an entrant to gain customers. Enterprise resource planning (ERP) software is an example of a product with very high switching costs. Once a company has installed SAP's ERP system, for example, the costs of moving to a new vendor are astronomical because of embedded data, the fact that internal processes have been adapted to SAP, major retraining needs, and the mission-critical nature of the applications.

4 *Capital requirements.* The need to invest large financial resources in order to compete can deter new entrants. Capital may be necessary not only for fixed facilities but also to extend customer credit, build inventories, and fund start-up losses. The barrier is particularly great if the capital is required for unrecoverable and therefore harder-to-finance expenditures, such as up-front advertising or research and development. While major corporations have the financial resources to invade almost any industry, the huge capital requirements in certain fields limit the pool of likely entrants. Conversely, in such fields as tax preparation services or short-haul trucking, capital requirements are minimal and potential entrants plentiful.

   It is important not to overstate the degree to which capital requirements alone deter entry. If industry returns are attractive and are expected to remain so, and if capital markets are efficient, investors will provide entrants with the funds they need. For aspiring air carriers, for instance, financing is available to purchase expensive aircraft because of their high resale value, one reason why there have been numerous new airlines in almost every region.

5 *Incumbency advantages independent of size.* No matter what their size, incumbents may have cost or quality advantages not available to potential rivals. These advantages can stem from such sources as proprietary technology, preferential access to the best raw material sources, preemption of the most favorable geographic locations, established brand identities, or cumulative experience that has allowed incumbents to learn how to produce more efficiently. Entrants try to bypass such advantages. Upstart discounters such as Target and Wal-Mart, for example, have located stores in freestanding sites rather than regional shopping centers where established department stores were well entrenched.

6 *Equal access to distribution channels.* The new entrant must, of course, secure distribution of its product or service. A new food item, for example, must displace others from the supermarket shelf via price breaks, promotions, intense selling efforts, or some other means. The more limited the wholesale or retail channels are and the more that existing competitors have tied them up, the tougher entry into an industry will be. Sometimes access to distribution is so high a barrier that new entrants must bypass distribution channels altogether or create their own. Thus, upstart low-cost airlines have avoided distribution through travel agents (who tend to favor established higher-fare carriers) and have encouraged passengers to book their own flights on the internet.

7 *Restrictive government policy.* Government policy can hinder or aid new entry directly, as well as amplify (or nullify) the other entry barriers. Government directly limits or even forecloses entry into industries through, for instance, licensing requirements and restrictions on foreign investment. Regulated industries like liquor retailing, taxi services, and airlines are visible examples. Government policy can heighten other entry barriers through such means as expansive patenting rules that protect proprietary technology from imitation or environmental or safety regulations that raise scale economies facing newcomers. Of course, government policies may also make entry easier – directly through subsidies, for instance, or indirectly by funding basic research and making it available to all firms, new and old, reducing scale economies.

Entry barriers should be assessed relative to the capabilities of potential entrants, which may be start-ups, foreign firms, or companies in related industries. And, as some of our examples illustrate, the strategist must be mindful of the creative ways newcomers might find to circumvent apparent barriers.

Expected retaliation. How potential entrants believe incumbents may react will also influence their decision to enter or stay out of an industry. If reaction is vigorous and protracted enough, the profit potential of participating in the industry can fall below the cost of capital. Incumbents often use public statements and responses to one entrant to send a message to other prospective entrants about their commitment to defending market share.

Newcomers are likely to fear expected retaliation if:

- Incumbents have previously responded vigorously to new entrants.
- Incumbents possess substantial resources to fight back, including excess cash and unused borrowing power, available productive capacity, or clout with distribution channels and customers.
- Incumbents seem likely to cut prices because they are committed to retaining market share at all costs or because the industry has high fixed costs, which create a strong motivation to drop prices to fill excess capacity.
- Industry growth is slow so newcomers can gain volume only by taking it from incumbents.

An analysis of barriers to entry and expected retaliation is obviously crucial for any company contemplating entry into a new industry. The challenge is

to find ways to surmount the entry barriers without nullifying, through heavy investment, the profitability of participating in the industry.

THE POWER OF SUPPLIERS. Powerful suppliers capture more of the value for themselves by charging higher prices, limiting quality or services, or shifting costs to industry participants. Powerful suppliers, including suppliers of labor, can squeeze profitability out of an industry that is unable to pass on cost increases in its own prices. Microsoft, for instance, has contributed to the erosion of profitability among personal computer makers by raising prices on operating systems. PC makers, competing fiercely for customers who can easily switch among them, have limited freedom to raise their prices accordingly.

Companies depend on a wide range of different supplier groups for inputs. A supplier group is powerful if:

- It is more concentrated than the industry it sells to. Microsoft's near monopoly in operating systems, coupled with the fragmentation of PC assemblers, exemplifies this situation.
- The supplier group does not depend heavily on the industry for its revenues. Suppliers serving many industries will not hesitate to extract maximum profits from each one. If a particular industry accounts for a large portion of a supplier group's volume or profit, however, suppliers will want to protect the industry through reasonable pricing and assist in activities such as R&D and lobbying.
- Industry participants face switching costs in changing suppliers. For example, shifting suppliers is difficult if companies have invested heavily in specialized ancillary equipment or in learning how to operate a supplier's equipment (as with Bloomberg terminals used by financial professionals). Or firms may have located their production lines adjacent to a supplier's manufacturing facilities (as in the case of some beverage companies and container manufacturers). When switching costs are high, industry participants find it hard to play suppliers off against one another. (Note that suppliers may have switching costs as well. This limits their power.)
- Suppliers offer products that are differentiated. Pharmaceutical companies that offer patented drugs with distinctive medical benefits have more power over hospitals, health maintenance organizations, and other drug buyers, for example, than drug companies offering me-too or generic products.
- There is no substitute for what the supplier group provides. Pilots' unions, for example, exercise considerable supplier power over airlines partly because there is no good alternative to a well-trained pilot in the cockpit.
- The supplier group can credibly threaten to integrate forward into the industry. In that case, if industry participants make too much money relative to suppliers, they will induce suppliers to enter the market.

THE POWER OF BUYERS. Powerful customers – the flip side of powerful suppliers – can capture more value by forcing down prices, demanding better quality or more service (thereby driving up costs), and generally playing industry participants off against one another, all at the

expense of industry profitability. Buyers are powerful if they have negotiating leverage relative to industry participants, especially if they are price sensitive, using their clout primarily to pressure price reductions.

As with suppliers, there may be distinct groups of customers who differ in bargaining power. A customer group has negotiating leverage if:

- There are few buyers, or each one purchases in volumes that are large relative to the size of a single vendor. Large-volume buyers are particularly powerful in industries with high fixed costs, such as telecommunications equipment, offshore drilling, and bulk chemicals. High fixed costs and low marginal costs amplify the pressure on rivals to keep capacity filled through discounting.
- The industry's products are standardized or undifferentiated. If buyers believe they can always find an equivalent product, they tend to play one vendor against another.
- Buyers face few switching costs in changing vendors.
- Buyers can credibly threaten to integrate backward and produce the industry's product themselves if vendors are too profitable. Producers of soft drinks and beer have long controlled the power of packaging manufacturers by threatening to make, and at times actually making, packaging materials themselves.

A buyer group is price sensitive if:

- The product it purchases from the industry represents a significant fraction of its cost structure or procurement budget. Here buyers are likely to shop around and bargain hard, as consumers do for home mortgages. Where the product sold by an industry is a small fraction of buyers' costs or expenditures, buyers are usually less price sensitive.
- The buyer group earns low profits, is strapped for cash, or is otherwise under pressure to trim its purchasing costs. Highly profitable or cash-rich customers, in contrast, are generally less price sensitive (that is, of course, if the item does not represent a large fraction of their costs).
- The quality of buyers' products or services is little affected by the industry's product. Where quality is very much affected by the industry's product, buyers are generally less price sensitive. When purchasing or renting production quality cameras, for instance, makers of major motion pictures opt for highly reliable equipment with the latest features. They pay limited attention to price.
- The industry's product has little effect on the buyer's other costs. Here, buyers focus on price. Conversely, where an industry's product or service can pay for itself many times over by improving performance or reducing labor, material, or other costs, buyers are usually more interested in quality than in price. Examples include products and services like tax accounting or well logging (which measures below-ground conditions of oil wells) that can save or even make the buyer money. Similarly, buyers tend not to be price sensitive in services such as investment banking, where poor performance can be costly and embarrassing.

Most sources of buyer power apply equally to consumers and to business-to-business customers. Like industrial customers, consumers tend to be more price sensitive if they are purchasing products that are undifferentiated,

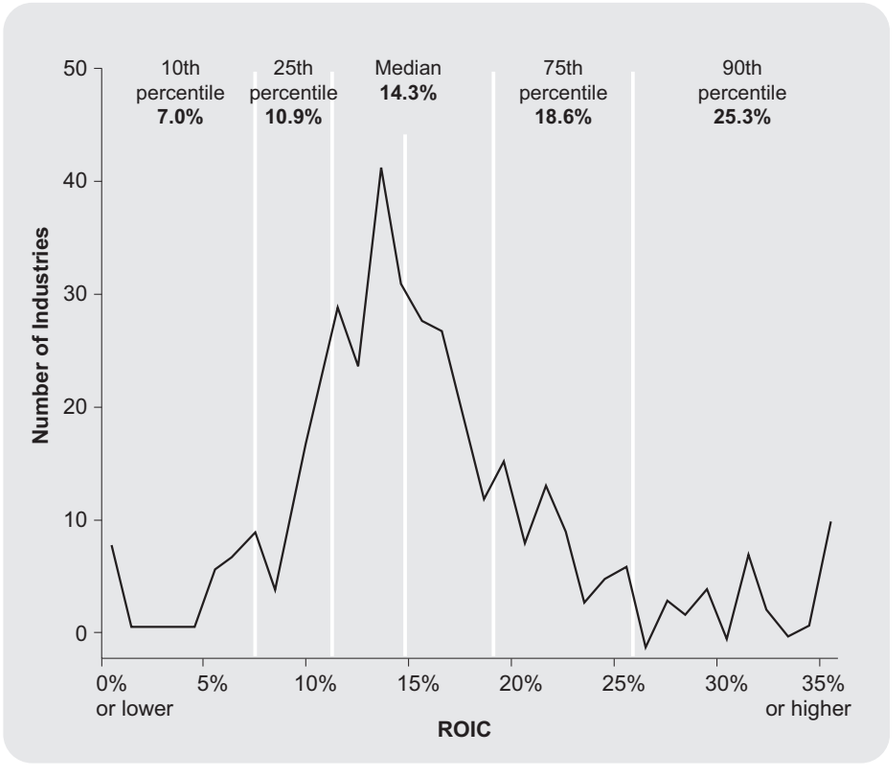

Figure 2: Average return on invested capital in U. S. industries, 1992–2006. **Return on invested capital (ROIC)** is the appropriate measure of profitability for strategy formulation, not to mention for equity investors. Return on sales or the growth rate of profits fail to account for the capital required to compete in the industry. Here, we utilize earnings before interest and taxes divided by average invested capital less excess cash as the measure of ROIC. This measure controls for idiosyncratic differences in capital structure and tax rates across companies and industries.

Source: Standard & Poor's, Compustat, and author's calculations

expensive relative to their incomes, and of a sort where product performance has limited consequences. The major difference with consumers is that their needs can be more intangible and harder to quantify.

Intermediate customers, or customers who purchase the product but are not the end user (such as assemblers or distribution channels), can be analyzed the same way as other buyers, with one important addition. Intermediate customers gain significant bargaining power when they can influence the purchasing decisions of customers downstream. Consumer electronics retailers, jewelry retailers, and agricultural-equipment distributors are examples of distribution channels that exert a strong influence on end customers.

Producers often attempt to diminish channel clout through exclusive arrangements with particular distributors or retailers or by marketing directly to end users. Component manufacturers seek to develop power over assemblers by creating preferences for their components with downstream customers. Such is the case with bicycle parts and with sweeteners. DuPont has created enormous clout by advertising its Stainmaster brand of carpet fibers not only to the carpet manufacturers that actually buy them but also to

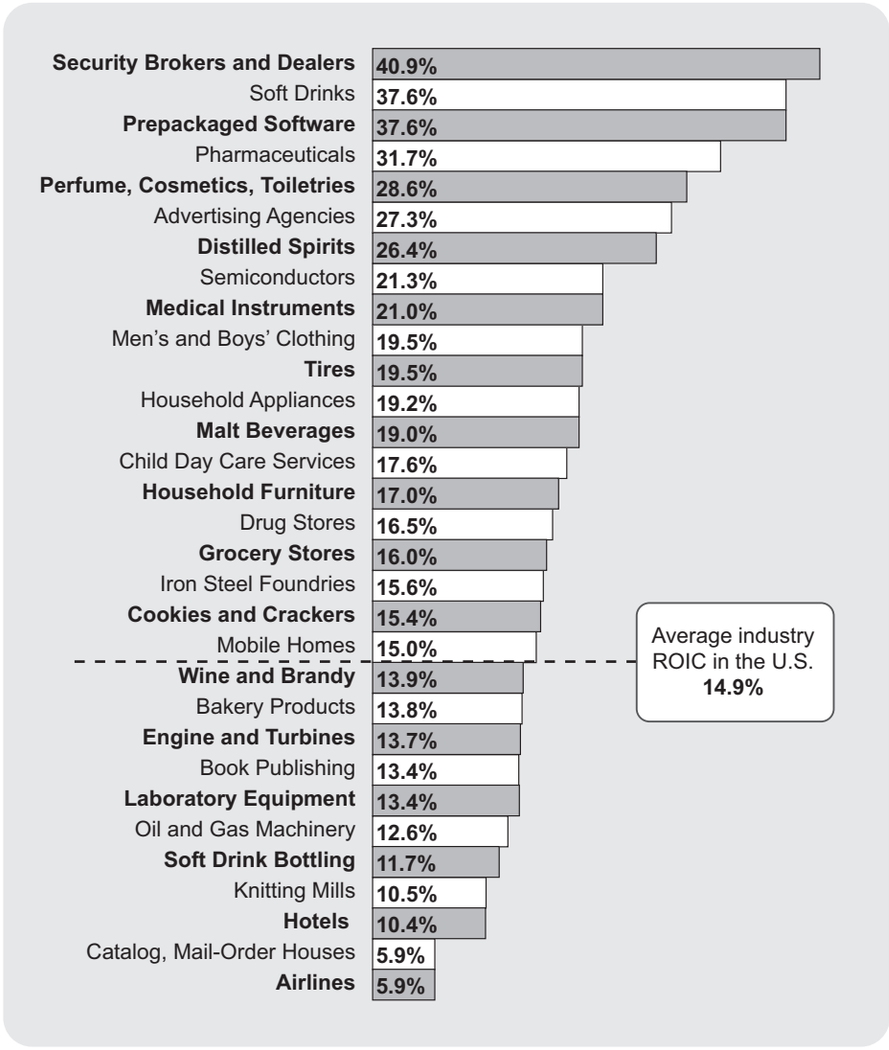

Figure 3: Profitability of selected U.S. industries: average ROIC 1992–2006

downstream consumers. Many consumers request Stainmaster carpet even though DuPont is not a carpet manufacturer.

THE THREAT OF SUBSTITUTES. A substitute performs the same or a similar function as an industry's product by a different means. Videoconferencing is a substitute for travel. Plastic is a substitute for aluminum. E-mail is a substitute for express mail. Sometimes, the threat of substitution is downstream or indirect, when a substitute replaces a buyer industry's product. For example, lawn-care products and services are threatened when multifamily homes in urban areas substitute for single-family homes in the suburbs. Software sold to agents is threatened when airline and travel websites substitute for travel agents.

Substitutes are always present, but they are easy to overlook because they may appear to be very different from the industry's product: To someone searching for a Father's Day gift, neckties and power tools may be substitutes. It is a substitute to do without, to purchase a used product rather than a new one, or to do it yourself (bring the service or product in-house).

When the threat of substitutes is high, industry profitability suffers. Substitute products or services limit an industry's profit potential by placing

a ceiling on prices. If an industry does not distance itself from substitutes through product performance, marketing, or other means, it will suffer in terms of profitability – and often growth potential.

Substitutes not only limit profits in normal times, they also reduce the bonanza an industry can reap in good times. In emerging economies, for example, the surge in demand for wired telephone lines has been capped as many consumers opt to make a mobile telephone their first and only phone line.

The threat of a substitute is high if:

- It offers an attractive price-performance trade-off to the industry's product. The better the relative value of the substitute, the tighter is the lid on an industry's profit potential. For example, conventional providers of long-distance telephone service have suffered from the advent of inexpensive internet-based phone services such as Vonage and Skype. Similarly, video rental outlets are struggling with the emergence of cable and satellite video-on-demand services, online video rental services such as Netflix, and the rise of internet video sites like Google's YouTube.
- The buyer's cost of switching to the substitute is low. Switching from a proprietary, branded drug to a generic drug usually involves minimal costs, for example, which is why the shift to generics (and the fall in prices) is so substantial and rapid.

Strategists should be particularly alert to changes in other industries that may make them attractive substitutes when they were not before. Improvements in plastic materials, for example, allowed them to substitute for steel in many automobile components. In this way, technological changes or competitive discontinuities in seemingly unrelated businesses can have major impacts on industry profitability. Of course the substitution threat can also shift in favor of an industry, which bodes well for its future profitability and growth potential.

RIVALRY AMONG EXISTING COMPETITORS. Rivalry among existing competitors takes many familiar forms, including price discounting, new product introductions, advertising campaigns, and service improvements. High rivalry limits the profitability of an industry. The degree to which rivalry drives down an industry's profit potential depends, first, on the *intensity* with which companies compete and, second, on the *basis* on which they compete.

The intensity of rivalry is greatest if:

- Competitors are numerous or are roughly equal in size and power. In such situations, rivals find it hard to avoid poaching business. Without an industry leader, practices desirable for the industry as a whole go unenforced.
- Industry growth is slow. Slow growth precipitates fights for market share.
- Exit barriers are high. Exit barriers, the flip side of entry barriers, arise because of such things as highly specialized assets or management's devotion to a particular business. These barriers keep companies in the market even though they may be earning low or negative returns. Excess

capacity remains in use, and the profitability of healthy competitors suffers as the sick ones hang on.

- Rivals are highly committed to the business and have aspirations for leadership, especially if they have goals that go beyond economic performance in the particular industry. High commitment to a business arises for a variety of reasons. For example, state-owned competitors may have goals that include employment or prestige. Units of larger companies may participate in an industry for image reasons or to offer a full line. Clashes of personality and ego have sometimes exaggerated rivalry to the detriment of profitability in fields such as the media and high technology.
- Firms cannot read each other's signals well because of lack of familiarity with one another, diverse approaches to competing, or differing goals.

The strength of rivalry reflects not just the intensity of competition but also the basis of competition. The *dimensions* on which competition takes place, and whether rivals converge to compete on the *same dimensions*, have a major influence on profitability.

Rivalry is especially destructive to profitability if it gravitates solely to price because price competition transfers profits directly from an industry to its customers. Price cuts are usually easy for competitors to see and match, making successive rounds of retaliation likely. Sustained price competition also trains customers to pay less attention to product features and service.

Price competition is most liable to occur if:

- Products or services of rivals are nearly identical and there are few switching costs for buyers. This encourages competitors to cut prices to win new customers. Years of airline price wars reflect these circumstances in that industry.
- Fixed costs are high and marginal costs are low. This creates intense pressure for competitors to cut prices below their average costs, even close to their marginal costs, to steal incremental customers while still making some contribution to covering fixed costs. Many basic-materials businesses, such as paper and aluminum, suffer from this problem, especially if demand is not growing. So do delivery companies with fixed networks of routes that must be served regardless of volume.
- Capacity must be expanded in large increments to be efficient. The need for large capacity expansions, as in the polyvinyl chloride business, disrupts the industry's supply-demand balance and often leads to long and recurring periods of overcapacity and price cutting.
- The product is perishable. Perishability creates a strong temptation to cut prices and sell a product while it still has value. More products and services are perishable than is commonly thought. Just as tomatoes are perishable because they rot, models of computers are perishable because they soon become obsolete, and information may be perishable if it diffuses rapidly or becomes outdated, thereby losing its value. Services such as hotel accommodations are perishable in the sense that unused capacity can never be recovered.

Competition on dimensions other than price – on product features, support services, delivery time, or brand image, for instance – is less likely to erode

profitability because it improves customer value and can support higher prices. Also, rivalry focused on such dimensions can improve value relative to substitutes or raise the barriers facing new entrants. While nonprice rivalry sometimes escalates to levels that undermine industry profitability, this is less likely to occur than it is with price rivalry.

As important as the dimensions of rivalry is whether rivals compete on the *same* dimensions. When all or many competitors aim to meet the same needs or compete on the same attributes, the result is zero-sum competition. Here, one firm's gain is often another's loss, driving down profitability. While price competition runs a stronger risk than nonprice competition of becoming zero sum, this may not happen if companies take care to segment their markets, targeting their low-price offerings to different customers.

Rivalry can be positive sum, or actually increase the average profitability of an industry, when each competitor aims to serve the needs of different customer segments, with different mixes of price, products, services, features, or brand identities. Such competition can not only support higher average profitability but also expand the industry, as the needs of more customer groups are better met. The opportunity for positive-sum competition will be greater in industries serving diverse customer groups. With a clear understanding of the structural underpinnings of rivalry, strategists can sometimes take steps to shift the nature of competition in a more positive direction.

Factors, not forces

Industry structure, as manifested in the strength of the five competitive forces, determines the industry's long-run profit potential because it determines how the economic value created by the industry is divided – how much is retained by companies in the industry versus bargained away by customers and suppliers, limited by substitutes, or constrained by potential new entrants. By considering all five forces, a strategist keeps overall structure in mind instead of gravitating to any one element. In addition, the strategist's attention remains focused on structural conditions rather than on fleeting factors.

It is especially important to avoid the common pitfall of mistaking certain visible attributes of an industry for its underlying structure. Consider the following:

Industry growth rate. A common mistake is to assume that fast-growing industries are always attractive. Growth does tend to mute rivalry, because an expanding pie offers opportunities for all competitors. But fast growth can put suppliers in a powerful position, and high growth with low entry barriers will draw in entrants. Even without new entrants, a high growth rate will not guarantee profitability if customers are powerful or substitutes are attractive. Indeed, some fast-growth businesses, such as personal computers, have been among the least profitable industries in recent years. A narrow focus on growth is one of the major causes of bad strategy decisions.

Technology and innovation. Advanced technology or innovations are not by themselves enough to make an industry structurally attractive (or

unattractive). Mundane, low-technology industries with price-insensitive buyers, high switching costs, or high entry barriers arising from scale economies are often far more profitable than sexy industries, such as software and internet technologies, that attract competitors.[2]

Government. Government is not best understood as a sixth force because government involvement is neither inherently good nor bad for industry profitability. The best way to understand the influence of government on competition is to analyze how specific government policies affect the five competitive forces. For instance, patents raise barriers to entry, boosting industry profit potential. Conversely, government policies favoring unions may raise supplier power and diminish profit potential. Bankruptcy rules that allow failing companies to reorganize rather than exit can lead to excess capacity and intense rivalry. Government operates at multiple levels and through many different policies, each of which will affect structure in different ways.

Complementary products and services. Complements are products or services used together with an industry's product. Complements arise when the customer benefit of two products combined is greater than the sum of each product's value in isolation. Computer hardware and software, for instance, are valuable together and worthless when separated.

In recent years, strategy researchers have highlighted the role of complements, especially in high-technology industries where they are most obvious.[3] By no means, however, do complements appear only there. The value of a car, for example, is greater when the drive also has access to gasoline stations, roadside assistance, and auto insurance.

Complements can be important when they affect the overall demand for an industry's product. However, like government policy, complements are not a sixth force determining industry profitability since the presence of strong complements is not necessarily bad (or good) for industry profitability. Complements affect profitability through the way they influence the five forces.

The strategist must trace the positive or negative influence of complements on all five forces to ascertain their impact on profitability. The presence of complements can raise or lower barriers to entry. In application software, for example, barriers to entry were lowered when producers of complementary operating system software, notably Microsoft, provided tool sets making it easier to write applications. Conversely, the need to attract producers of complements can raise barriers to entry, as it does in video game hardware.

The presence of complements can also affect the threat of substitutes. For instance, the need for appropriate fueling stations makes it difficult for cars using alternative fuels to substitute for conventional vehicles. But complements can also make substitution easier. For example, Apple's iTunes hastened the substitution from CDs to digital music.

Complements can factor into industry rivalry either positively (as when they raise switching costs) or negatively (as when they neutralize product differentiation). Similar analyses can be done for buyer and supplier power. Sometimes companies compete by altering conditions in complementary industries in their favor, such as when videocassette-recorder producer JVC

persuaded movie studios to favor its standard in issuing prerecorded tapes even though rival Sony's standard was probably superior from a technical standpoint.

Identifying complements is part of the analyst's work. As with government policies or important technologies, the strategic significance of complements will be best understood through the lens of the five forces.

Industry analysis in practice

Good industry analysis looks rigorously at the structural underpinnings of profitability. A first step is to understand the appropriate time horizon. One of the essential tasks in industry analysis is to distinguish temporary or cyclical changes from structural changes. A good guideline for the appropriate time horizon is the full business cycle for the particular industry. For most industries, a three-to-five-year horizon is appropriate, although in some industries with long lead times, such as mining, the appropriate horizon might be a decade or more. It is average profitability over this period, not profitability in any particular year, that should be the focus of analysis.

The point of industry analysis is not to declare the industry attractive or unattractive but to understand the underpinnings of competition and the root causes of profitability. As much as possible, analysts should look at industry structure quantitatively, rather than be satisfied with lists of qualitative factors. Many elements of the five forces can be quantified: the percentage of the buyer's total cost accounted for by the industry's product (to understand buyer price sensitivity); the percentage of industry sales required to fill a plant or operate a logistical network of efficient scale (to help assess barriers to entry); the buyer's switching cost (determining the inducement an entrant or rival must offer customers).

The strength of the competitive forces affects prices, costs, and the investment required to compete; thus the forces are directly tied to the income statements and balance sheets of industry participants. Industry structure defines the gap between revenues and costs. For example, intense rivalry drives down prices or elevates the costs of marketing, R&D, or customer service, reducing margins. How much? Strong suppliers drive up input costs. How much? Buyer power lowers prices or elevates the costs of meeting buyers' demands, such as the requirement to hold more inventory or provide financing. How much? Low barriers to entry or close substitutes limit the level of sustainable prices. How much? It is these economic relationships that sharpen the strategist's understanding of industry competition.

Finally, good industry analysis does not just list pluses and minuses but sees an industry in overall, systemic terms. Which forces are underpinning (or constraining) today's profitability? How might shifts in one competitive force trigger reactions in others? Answering such questions is often the source of true strategic insights.

Changes in industry structure

So far, we have discussed the competitive forces at a single point in time. Industry structure proves to be relatively stable, and industry profitability differences are remarkably persistent over time in practice. However, industry structure is constantly undergoing modest adjustment – and occasionally it can change abruptly.

Shifts in structure may emanate from outside an industry or from within. They can boost the industry's profit potential or reduce it. They may be caused by changes in technology, changes in customer needs, or other events. The five competitive forces provide a framework for identifying the most important industry developments and for anticipating their impact on industry attractiveness.

Shifting threat of new entry. Changes to any of the seven barriers described above can raise or lower the threat of new entry. The expiration of a patent, for instance, may unleash new entrants. On the day that Merck's patents for the cholesterol reducer Zocor expired, three pharmaceutical makers entered the market for the drug. Conversely, the proliferation of products in the ice cream industry has gradually filled up the limited freezer space in grocery stores, making it harder for new ice cream makers to gain access to distribution in North America and Europe.

Strategic decisions of leading competitors often have a major impact on the threat of entry. Starting in the 1970s, for example, retailers such as Wal-Mart, Kmart, and Toys "R" Us began to adopt new procurement, distribution, and inventory control technologies with large fixed costs, including automated distribution centers, bar coding, and point-of-sale terminals. These investments increased the economies of scale and made it more difficult for small retailers to enter the business (and for existing small players to survive).

Changing supplier or buyer power. As the factors underlying the power of suppliers and buyers change with time, their clout rises or declines. In the global appliance industry, for instance, competitors including Electrolux, General Electric, and Whirlpool have been squeezed by the consolidation of retail channels (the decline of appliance specialty stores, for instance, and the rise of big-box retailers like Best Buy and Home Depot in the United States). Another example is travel agents, who depend on airlines as a key supplier. When the internet allowed airlines to sell tickets directly to customers, this significantly increased their power to bargain down agents' commissions.

Shifting threat of substitution. The most common reason substitutes become more or less threatening over time is that advances in technology create new substitutes or shift price performance comparisons in one direction or the other. The earliest microwave ovens, for example, were large and priced above $2,000, making them poor substitutes for conventional ovens. With technological advances, they became serious substitutes. Flash computer memory has improved enough recently to become a meaningful substitute for low-capacity hard-disk drives. Trends in the availability or performance of complementary producers also shift the threat of substitutes.

New bases of rivalry. Rivalry often intensifies naturally over time. As an industry matures, growth slows. Competitors become more alike as industry conventions emerge, technology diffuses, and consumer tastes converge. Industry profitability falls, and weaker competitors are driven from the business. This story has played out in industry after industry; televisions, snowmobiles, and telecommunications equipment are just a few examples.

A trend toward intensifying price competition and other forms of rivalry, however, is by no means inevitable. For example, there has been enormous competitive activity in the U.S. casino industry in recent decades, but most of it has been positive-sum competition directed toward new niches and geographic segments (such as riverboats, trophy properties, Native American reservations, international expansion, and novel customer groups like families). Head-to-head rivalry that lowers prices or boosts the payouts to winners has been limited.

The nature of rivalry in an industry is altered by mergers and acquisitions that introduce new capabilities and ways of competing. Or, technological innovation can reshape rivalry. In the retail brokerage industry, the advent of the internet lowered marginal costs and reduced differentiation, triggering far more intense competition on commissions and fees than in the past.

In some industries, companies turn to mergers and consolidation not to improve cost and quality but to attempt to stop intense competition. Eliminating rivals is a risky strategy, however. The five competitive forces tell us that a profit windfall from removing today's competitors often attracts new competitors and backlash from customers and suppliers. In New York banking, for example, the 1980s and 1990s saw escalating consolidations of commercial and savings banks, including Manufacturers Hanover, Chemical, Chase, and Dime Savings. But today the retail-banking landscape of Manhattan is as diverse as ever, as new entrants such as Wachovia, Bank of America, and Washington Mutual have entered the market.

Implications for strategy

Understanding the forces that shape industry competition is the starting point for developing strategy. Every company should already know what the average profitability of its industry is and how that has been changing over time. The five forces reveal *why* industry profitability is what it is. Only then can a company incorporate industry conditions into strategy.

The forces reveal the most significant aspects of the competitive environment. They also provide a baseline for sizing up a company's strengths and weaknesses: Where does the company stand versus buyers, suppliers, entrants, rivals, and substitutes? Most importantly, an understanding of industry structure guides managers toward fruitful possibilities for strategic action, which may include any or all of the following: positioning the company to better cope with the current competitive forces; anticipating and exploiting shifts in the forces; and shaping the balance of forces to create a new industry structure that is more favorable to the company. The best strategies exploit more than one of these possibilities.

Positioning the company. Strategy can be viewed as building defenses against the competitive forces or finding a position in the industry where the forces are weakest. Consider, for instance, the position of Paccar in the market for heavy trucks. The heavy-truck industry is structurally challenging. Many buyers operate large fleets or are large leasing companies, with both the leverage and the motivation to drive down the price of one of their largest purchases. Most trucks are built to regulated standards and offer similar features, so price competition is rampant. Capital intensity causes rivalry to be fierce, especially during the recurring cyclical downturns. Unions exercise considerable supplier power. Though there are few direct substitutes for an 18-wheeler, truck buyers face important substitutes for their services, such as cargo delivery by rail.

In this setting, Paccar, a Bellevue, Washington-based company with about 20% of the North American heavy-truck market, has chosen to focus on one group of customers: owner-operators – drivers who own their trucks and contract directly with shippers or serve as subcontractors to larger trucking companies. Such small operators have limited clout as truck buyers. They are also less price sensitive because of their strong emotional ties to and economic dependence on the product. They take great pride in their trucks, in which they spend most of their time.

Paccar has invested heavily to develop an array of features with owner-operators in mind: luxurious sleeper cabins, plush leather seats, noise-insulated cabins, sleek exterior styling, and so on. At the company's extensive network of dealers, prospective buyers use software to select among thousands of options to put their personal signature on their trucks. These customized trucks are built to order, not to stock, and delivered in six to eight weeks. Paccar's trucks also have aerodynamic designs that reduce fuel consumption, and they maintain their resale value better than other trucks. Paccar's roadside assistance program and IT-supported system for distributing spare parts reduce the time a truck is out of service. All these are crucial considerations for an owner-operator. Customers pay Paccar a 10% premium, and its Kenworth and Peterbilt brands are considered status symbols at truck stops.

Paccar illustrates the principles of positioning a company within a given industry structure. The firm has found a portion of its industry where the competitive forces are weaker – where it can avoid buyer power and price-based rivalry. And it has tailored every single part of the value chain to cope well with the forces in its segment. As a result, Paccar has been profitable for 68 years straight and has earned a long-run return on equity above 20%.

In addition to revealing positioning opportunities within an existing industry, the five forces framework allows companies to rigorously analyze entry and exit. Both depend on answering the difficult question: "What is the potential of this business?" Exit is indicated when industry structure is poor or declining and the company has no prospect of a superior positioning. In considering entry into a new industry, creative strategists can use the framework to spot an industry with a good future before this good future is reflected in the prices of acquisition candidates. Five forces analysis may also reveal industries that are not necessarily attractive for the average entrant but in which a company has good reason to believe it can surmount

entry barriers at lower cost than most firms or has a unique ability to cope with the industry's competitive forces.

Exploiting industry change. Industry changes bring the opportunity to spot and claim promising new strategic positions if the strategist has a sophisticated understanding of the competitive forces and their underpinnings. Consider, for instance, the evolution of the music industry during the past decade. With the advent of the internet and the digital distribution of music, some analysts predicted the birth of thousands of music labels (that is, record companies that develop artists and bring their music to market). This, the analysts argued, would break a pattern that had held since Edison invented the phonograph: Between three and six major record companies had always dominated the industry. The internet would, they predicted, remove distribution as a barrier to entry, unleashing a flood of new players into the music industry.

A careful analysis, however, would have revealed that physical distribution was not the crucial barrier to entry. Rather, entry was barred by other benefits that large music labels enjoyed. Large labels could pool the risks of developing new artists over many bets, cushioning the impact of inevitable failures. Even more important, they had advantages in breaking through the clutter and getting their new artists heard. To do so, they could promise radio stations and record stores access to well-known artists in exchange for promotion of new artists. New labels would find this nearly impossible to match. The major labels stayed the course, and new music labels have been rare.

This is not to say that the music industry is structurally unchanged by digital distribution. Unauthorized downloading created an illegal but potent substitute. The labels tried for years to develop technical platforms for digital distribution themselves, but major companies hesitated to sell their music through a platform owned by a rival. Into this vacuum stepped Apple with its iTunes music store, launched in 2003 to support its iPod music player. By permitting the creation of a powerful new gatekeeper, the major labels allowed industry structure to shift against them. The number of major record companies has actually declined – from six in 1997 to four today – as companies struggled to cope with the digital phenomenon.

When industry structure is in flux, new and promising competitive positions may appear. Structural changes open up new needs and new ways to serve existing needs. Established leaders may overlook these or be constrained by past strategies from pursuing them. Smaller competitors in the industry can capitalize on such changes, or the void may well be filled by new entrants.

Shaping industry structure. When a company exploits structural change, it is recognizing, and reacting to, the inevitable. However, companies also have the ability to shape industry structure. A firm can lead its industry toward new ways of competing that alter the five forces for the better. In reshaping structure, a company wants its competitors to follow so that the entire industry will be transformed. While many industry participants may benefit in the process, the innovator can benefit most if it can shift competition in directions where it can excel.

An industry's structure can be reshaped in two ways: by redividing profitability in favor of incumbents or by expanding the overall profit pool. Redividing the industry pie aims to increase the share of profits to industry competitors instead of to suppliers, buyers, substitutes, and keeping out potential entrants. Expanding the profit pool involves increasing the overall pool of economic value generated by the industry in which rivals, buyers, and suppliers can all share.

Redividing profitability. To capture more profits for industry rivals, the starting point is to determine which force or forces are currently constraining industry profitability and address them. A company can potentially influence all of the competitive forces. The strategist's goal here is to reduce the share of profits that leak to suppliers, buyers, and substitutes or are sacrificed to deter entrants.

To neutralize supplier power, for example, a firm can standardize specifications for parts to make it easier to switch among suppliers. It can cultivate additional vendors, or alter technology to avoid a powerful supplier group altogether.

To counter customer power, companies may expand services that raise buyers' switching costs or find alternative means of reaching customers to neutralize powerful channels. To temper profit-eroding price rivalry, companies can invest more heavily in unique products, as pharmaceutical firms have done, or expand support services to customers. To scare off entrants, incumbents can elevate the fixed cost of competing – for instance, by escalating their R&D or marketing expenditures. To limit the threat of substitutes, companies can offer better value through new features or wider product accessibility. When soft-drink producers introduced vending machines and convenience store channels, for example, they dramatically improved the availability of soft drinks relative to other beverages.

Sysco, the largest food-service distributor in North America, offers a revealing example of how an industry leader can change the structure of an industry for the better. Food-service distributors purchase food and related items from farmers and food processors. They then warehouse and deliver these items to restaurants, hospitals, employer cafeterias, schools, and other food-service institutions. Given low barriers to entry, the food-service distribution industry has historically been highly fragmented, with numerous local competitors. While rivals try to cultivate customer relationships, buyers are price sensitive because food represents a large share of their costs. Buyers can also choose the substitute approaches of purchasing directly from manufacturers or using retail sources, avoiding distributors altogether. Suppliers wield bargaining power: They are often large companies with strong brand names that food preparers and consumers recognize. Average profitability in the industry has been modest.

Sysco recognized that, given its size and national reach, it might change this state of affairs. It led the move to introduce private-label distributor brands with specifications tailored to the food-service market, moderating supplier power. Sysco emphasized value-added services to buyers such as credit, menu planning, and inventory management to shift the basis of competition away from just price. These moves, together with stepped-up investments in information technology and regional distribution centers, substantially raised

the bar for new entrants while making the substitutes less attractive. Not surprisingly, the industry has been consolidating, and industry profitability appears to be rising.

Industry leaders have a special responsibility for improving industry structure. Doing so often requires resources that only large players possess. Moreover, an improved industry structure is a public good because it benefits every firm in the industry, not just the company that initiated the improvement. Often, it is more in the interests of an industry leader than any other participant to invest for the common good because leaders will usually benefit the most. Indeed, improving the industry may be a leader's most profitable strategic opportunity, in part because attempts to gain further market share can trigger strong reactions from rivals, customers, and even suppliers.

There is a dark side to shaping industry structure that is equally important to understand. Ill-advised changes in competitive positioning and operating practices can *undermine* industry structure. Faced with pressures to gain market share or enamored with innovation for its own sake, managers may trigger new kinds of competition that no incumbent can win. When taking actions to improve their own company's competitive advantage, then, strategists should ask whether they are setting in motion dynamics that will undermine industry structure in the long run. In the early days of the personal computer industry, for instance, IBM tried to make up for its late entry by offering an open architecture that would set industry standards and attract complementary makers of application software and peripherals. In the process, it ceded ownership of the critical components of the PC – the operating system and the microprocessor – to Microsoft and Intel. By standardizing PCs, it encouraged price-based rivalry and shifted power to suppliers. Consequently, IBM became the temporarily dominant firm in an industry with an enduringly unattractive structure.

Expanding the profit pool. When overall demand grows, the industry's quality level rises, intrinsic costs are reduced, or waste is eliminated, the pie expands. The total pool of value available to competitors, suppliers, and buyers grows. The total profit pool expands, for example, when channels become more competitive or when an industry discovers latent buyers for its product that are not currently being served. When soft-drink producers rationalized their independent bottler networks to make them more efficient and effective, both the soft-drink companies and the bottlers benefited. Overall value can also expand when firms work collaboratively with suppliers to improve coordination and limit unnecessary costs incurred in the supply chain. This lowers the inherent cost structure of the industry, allowing higher profit, greater demand through lower prices, or both. Or, agreeing on quality standards can bring up industrywide quality and service levels, and hence prices, benefiting rivals, suppliers, and customers.

Expanding the overall profit pool creates win-win opportunities for multiple industry participants. It can also reduce the risk of destructive rivalry that arises when incumbents attempt to shift bargaining power or capture more market share. However, expanding the pie does not reduce the importance of industry structure. How the expanded pie is divided will ultimately be determined by the five forces. The most successful companies are those that

expand the industry profit pool in ways that allow them to share disproportionately in the benefits.

Defining the industry. The five competitive forces also hold the key to defining the relevant industry (or industries) in which a company competes. Drawing industry boundaries correctly, around the arena in which competition actually takes place, will clarify the causes of profitability and the appropriate unit for setting strategy. A company needs a separate strategy for each distinct industry. Mistakes in industry definition made by competitors present opportunities for staking out superior strategic positions. (See [the box below].)

Defining the relevant industry

Defining the industry in which competition actually takes place is important for good industry analysis, not to mention for developing strategy and setting business unit boundaries. Many strategy errors emanate from mistaking the relevant industry, defining it too broadly or too narrowly. Defining the industry too broadly obscures differences among products, customers, or geographic regions that are important to competition, strategic positioning, and profitability. Defining the industry too narrowly overlooks commonalities and linkages across related products or geographic markets that are crucial to competitive advantage. Also, strategists must be sensitive to the possibility that industry boundaries can shift.

The boundaries of an industry consist of two primary dimensions. First is the *scope of products or services*. For example, is motor oil used in cars part of the same industry as motor oil used in heavy trucks and stationary engines, or are these different industries? The second dimension is *geographic scope*. Most industries are present in many parts of the world. However, is competition contained within each state, or is it national? Does competition take place within regions such as Europe or North America, or is there a single global industry?

The five forces are the basic tool to resolve these questions. If industry structure for two products is the same or very similar (that is, if they have the same buyers, suppliers, barriers to entry, and so forth), then the products are best treated as being part of the same industry. If industry structure differs markedly, however, the two products may be best understood as separate industries.

In lubricants, the oil used in cars is similar or even identical to the oil used in trucks, but the similarity largely ends there. Automotive motor oil is sold to fragmented, generally unsophisticated customers through numerous and often powerful channels, using extensive advertising. Products are packaged in small containers and logistical costs are high, necessitating local production. Truck and power generation lubricants are sold to entirely different buyers in entirely different ways using a separate supply chain. Industry structure (buyer power, barriers to entry, and so forth) is substantially different. Automotive oil is thus a distinct industry from oil for truck and stationary engine uses. Industry

profitability will differ in these two cases, and a lubricant company will need a separate strategy for competing in each area.

Differences in the five competitive forces also reveal the geographic scope of competition. If an industry has a similar structure in every country (rivals, buyers, and so on), the presumption is that competition is global, and the five forces analyzed from a global perspective will set average profitability. A single global strategy is needed. If an industry has quite different structures in different geographic regions, however, each region may well be a distinct industry. Otherwise, competition would have leveled the differences. The five forces analyzed for each region will set profitability there.

The extent of differences in the five forces for related products or across geographic areas is a matter of degree, making industry definition often a matter of judgment. A rule of thumb is that where the differences in any one force are large, and where the differences involve more than one force, distinct industries may well be present.

Fortunately, however, even if industry boundaries are drawn incorrectly, careful five forces analysis should reveal important competitive threats. A closely related product omitted from the industry definition will show up as a substitute, for example, or competitors overlooked as rivals will be recognized as potential entrants. At the same time, the five forces analysis should reveal major differences within overly broad industries that will indicate the need to adjust industry boundaries or strategies.]

Typical steps in industry analysis

Define the relevant industry:

- What products are in it? Which ones are part of another distinct industry?
- What is the geographic scope of competition?

Identify the participants and segment them into groups, if appropriate:

Who are

- the buyers and buyer groups?
- the suppliers and supplier groups?
- the competitors?
- the substitutes?
- the potential entrants?

Assess the underlying drivers of each competitive force to determine which forces are strong and which are weak and why.

Determine overall industry structure, and test the analysis for consistency:

- *Why* is the level of profitability what it is?
- Which are the *controlling* forces for profitability?

- Is the industry analysis consistent with actual long-run profitability?
- Are more-profitable players better positioned in relation to the five forces?

Analyze recent and likely future changes in each force, both positive and negative.

Identify aspects of industry structure that might be influenced by competitors, by new entrants, or by your company.

Common pitfalls

In conducting the analysis avoid the following common mistakes:

- Defining the industry too broadly or too narrowly.
- Making lists instead of engaging in rigorous analysis.
- Paying equal attention to all of the forces rather than digging deeply into the most important ones.
- Confusing effect (price sensitivity) with cause (buyer economics).
- Using static analysis that ignores industry trends.
- Confusing cyclical or transient changes with true structural changes.
- Using the framework to declare an industry attractive or unattractive rather than using it to guide strategic choices.

Competition and value

The competitive forces reveal the drivers of industry competition. A company strategist who understands that competition extends well beyond existing rivals will detect wider competitive threats and be better equipped to address them. At the same time, thinking comprehensively about an industry's structure can uncover opportunities: differences in customers, suppliers, substitutes, potential entrants, and rivals that can become the basis for distinct strategies yielding superior performance. In a world of more open competition and relentless change, it is more important than ever to think structurally about competition.

Understanding industry structure is equally important for investors as for managers. The five competitive forces reveal whether an industry is truly attractive, and they help investors anticipate positive or negative shifts in industry structure before they are obvious. The five forces distinguish short-term blips from structural changes and allow investors to take advantage of undue pessimism or optimism. Those companies whose strategies have industry-transforming potential become far clearer. This deeper thinking about competition is a more powerful way to achieve genuine investment success than the financial projections and trend extrapolation that dominate today's investment analysis.

If both executives and investors looked at competition this way, capital markets would be a far more effective force for company success and economic prosperity. Executives and investors would both be focused on the same fundamentals that drive sustained profitability. The conversation

between investors and executives would focus on the structural, not the transient. Imagine the improvement in company performance – and in the economy as a whole – if all the energy expended in "pleasing the Street" were redirected toward the factors that create true economic value.

Notes

1 For a discussion of the value chain framework, see Michael E. Porter, Competitive Advantage: Creating and Sustaining Superior Performance (The Free Press, 1998).

2 For a discussion of how internet technology improves the attractiveness of some industries while eroding the profitability of others, see Michael E. Porter, "Strategy and the Internet" (HBR, March 2001).

3 See, for instance, Adam M. Brandenburger and Barry J. Nalebuff, Co-opetition (Currency Doubleday, 1996).

Reading 2: The core competence of the corporation

C. K. Prahalad and Gary Hamel

Prahalad, C. K. and Hamel, G. (1990) 'The Core Competence of the Corporation', *Harvard Business Review*, May–June, pp. 79–91.

The most powerful way to prevail in global competition is still invisible to many companies. During the 1980s, top executives were judged on their ability to restructure, declutter, and delayer their corporations. In the 1990s, they'll be judged on their ability to identify, cultivate, and exploit the core competencies that make growth possible – indeed, they'll have to rethink the concept of the corporation itself.

Consider the last ten years of GTE and NEC. In the early 1980s, GTE was well positioned to become a major player in the evolving information technology industry. It was active in telecommunications. Its operations spanned a variety of businesses including telephones, switching and transmission systems, digital PABX, semiconductors, packet switching, satellites, defense systems, and lighting products. And GTE's Entertainment Products Group, which produced Sylvania color TVs, had a position in related display technologies. In 1980, GTE's sales were $9.98 billion, and net cash flow was $1.73 billion. NEC, in contrast, was much smaller, at $3.8 billion in sales. It had a comparable technological base and computer businesses, but it had no experience as an operating telecommunications company.

Yet look at the positions of GTE and NEC in 1988. GTE's 1988 sales were $16.46 billion, and NEC's sales were considerably higher at $21.89 billion. GTE has, in effect, become a telephone operating company with a position in defense and lighting products. GTE's other businesses are small in global terms. GTE has divested Sylvania TV and Telenet, put switching, transmission, and digital PABX into joint ventures, and closed down semiconductors. As a result, the international position of GTE has eroded. Non-U.S. revenue as a percent of total revenue dropped from 20% to 15% between 1980 and 1988.

NEC has emerged as the world leader in semiconductors and as a first-tier player in telecommunications products and computers. It has consolidated its position in mainframe computers. It has moved beyond public switching and transmission to include such lifestyle products as mobile telephones, facsimile machines, and laptop computers – bridging the gap between telecommunications and office automation. NEC is the only company in the world to be in the top five in revenue in telecommunications, semiconductors, and mainframes. Why did these two companies, starting with comparable business portfolios, perform so differently? Largely because NEC conceived of itself in terms of "core competencies," and GTE did not.

Rethinking the corporation

Once, the diversified corporation could simply point its business units at particular end product markets and admonish them to become world leaders. But with market boundaries changing ever more quickly, targets are elusive and capture is at best temporary. A few companies have proven themselves adept at inventing new markets, quickly entering emerging markets, and dramatically shifting patterns of customer choice in established markets. These are the ones to emulate. The critical task for management is to create an organization capable of infusing products with irresistible functionality or, better yet, creating products that customers need but have not yet even imagined.

This is a deceptively difficult task. Ultimately, it requires radical change in the management of major companies. It means, first of all, that top managements of Western companies must assume responsibility for competitive decline. Everyone knows about high interest rates, Japanese protectionism, outdated antitrust laws, obstreperous unions, and impatient investors. What is harder to see, or harder to acknowledge, is how little added momentum companies actually get from political or macroeconomic "relief." Both the theory and practice of Western management have created a drag on our forward motion. It is the principles of management that are in need of reform.

NEC versus GTE, again, is instructive and only one of many such comparative cases we analyzed to understand the changing basis for global leadership. Early in the 1970s, NEC articulated a strategic intent to exploit the convergence of computing and communications, what it called "C&C."[1] Success, top management reckoned, would hinge on acquiring *competencies*, particularly in semiconductors. Management adopted an appropriate "strategic architecture," summarized by C&C, and then communicated its intent to the whole organization and the outside world during the mid-1970s.

NEC constituted a "C&C Committee" of top managers to oversee the development of core products and core competencies. NEC put in place coordination groups and committees that cut across the interests of individual businesses. Consistent with its strategic architecture, NEC shifted enormous resources to strengthen its position in components and central processors. By using collaborative arrangements to multiply internal resources, NEC was able to accumulate a broad array of core competencies.

NEC carefully identified three interrelated streams of technological and market evolution. Top management determined that computing would evolve from large mainframes to distributed processing, components from simple ICs to VLSI, and communications from mechanical cross-bar exchange to complex digital systems we now call ISDN. As things evolved further, NEC reasoned, the computing, communications, and components businesses would so overlap that it would be very hard to distinguish among them, and that there would be enormous opportunities for any company that had built the competencies needed to serve all three markets.

Why did NEC enter myriad alliances between 1980 and 1988? To learn and absorb other companies' skills.

NEC top management determined that semiconductors would be the company's most important "core product." It entered into myriad strategic alliances – over 100 as of 1987 – aimed at building competencies rapidly and at low cost. In mainframe computers, its most noted relationship was with Honeywell and Bull. Almost all the collaborative arrangements in the semiconductor-component field were oriented toward technology access. As they entered collaborative arrangements, NEC's operating managers understood the rationale for these alliances and the goal of internalizing partner skills, NEC's director of research summed up its competence acquisition during the 1970s and 1980s this way: "From an investment standpoint, it was much quicker and cheaper to use foreign technology. There wasn't a need for us to develop new ideas."

No such clarity of strategic intent and strategic architecture appeared to exist at GTE. Although senior executives discussed the implications of the evolving information technology industry, no commonly accepted view of which competencies would be required to compete in that industry were communicated widely. While significant staff work was done to identify key technologies, senior line managers continued to act as if they were managing independent business units. Decentralization made it difficult to focus on core competencies. Instead, individual businesses became increasingly dependent on outsiders for critical skills, and collaboration became a route to staged exits. Today, with a new management team in place, GTE has repositioned itself to apply its competencies to emerging markets in telecommunications services.

The roots of competitive advantage

The distinction we observed in the way NEC and GTE conceived of themselves – a portfolio of competencies versus a portfolio of businesses – was repeated across many industries. From 1980 to 1988, Canon grew by 264%, Honda by 200%. Compare that with Xerox and Chrysler. And if Western managers were once anxious about the low cost and high quality of Japanese imports, they are now overwhelmed by the pace at which Japanese rivals are inventing new markets, creating new products, and enhancing them. Canon has given us personal copiers; Honda has moved from motorcycles to four-wheel off-road buggies. Sony developed the 8mm camcorder, Yamaha, the digital piano. Ko-matsu developed an underwater remote-controlled bulldozer, while Casio's latest gambit is a small-screen color LCD television. Who would have anticipated the evolution of these vanguard markets?

In more established markets, the Japanese challenge has been just as disquieting. Japanese companies are generating a blizzard of features and functional enhancements that bring technological sophistication to everyday products. Japanese car producers have been pioneering four-wheel steering, four-valve-per-cylinder engines, in-car navigation systems, and sophisticated

electronic engine-management systems. On the strength of its product features, Canon is now a player in facsimile transmission machines, desktop laser printers, even semiconductor manufacturing equipment.

In the short run, a company's competitiveness derives from the price/performance attributes of current products. But the survivors of the first wave of global competition, Western and Japanese alike, are all converging on similar and formidable standards for product cost and quality – minimum hurdles for continued competition, but less and less important as sources of differential advantage. In the long run, competitiveness derives from an ability to build, at lower cost and more speedily than competitors, the core competencies that spawn unanticipated products. The real sources of advantage are to be found in management's ability to consolidate corporatewide technologies and production skills into competencies that empower individual businesses to adapt quickly to changing opportunities.

Senior executives who claim that they cannot build core competencies either because they feel the autonomy of business units is sacrosanct or because their feet are held to the quarterly budget fire should think again. The problem in many Western companies is not that their senior executives are any less capable than those in Japan nor that Japanese companies possess greater technical capabilities. Instead, it is their adherence to a concept of the corporation that unnecessarily limits the ability of individual businesses to fully exploit the deep reservoir of technological capability that many American and European companies possess.

The diversified corporation is a large tree. The trunk and major limbs are core products, the smaller branches are business units; the leaves, flowers, and fruit are end products. The root system that provides nourishment, sustenance, and stability is the core competence. You can miss the strength of competitors by looking only at their end products, in the same way you miss the strength of a tree if you look only at its leaves. (See [Figure 1])

Core competencies are the collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies. Consider Sony's capacity to miniaturize or Philips's optical-media expertise. The theoretical knowledge to put a radio on a chip does not in itself assure a company the skill to produce a miniature radio no bigger than a business card. To bring off this feat, Casio must harmonize know-how in miniaturization, microprocessor design, material science, and ultrathin precision casing – the same skills it applies in its miniature card calculators, pocket TVs, and digital watches.

> Unlike physical assets, competencies do not deteriorate as they are applied and shared. They grow.

If core competence is about harmonizing streams of technology, it is also about the organization of work and the delivery of value. Among Sony's competencies is miniaturization. To bring miniaturization to its products, Sony must ensure that technologists, engineers, and marketers have a shared understanding of customer needs and of technological possibilities. The force

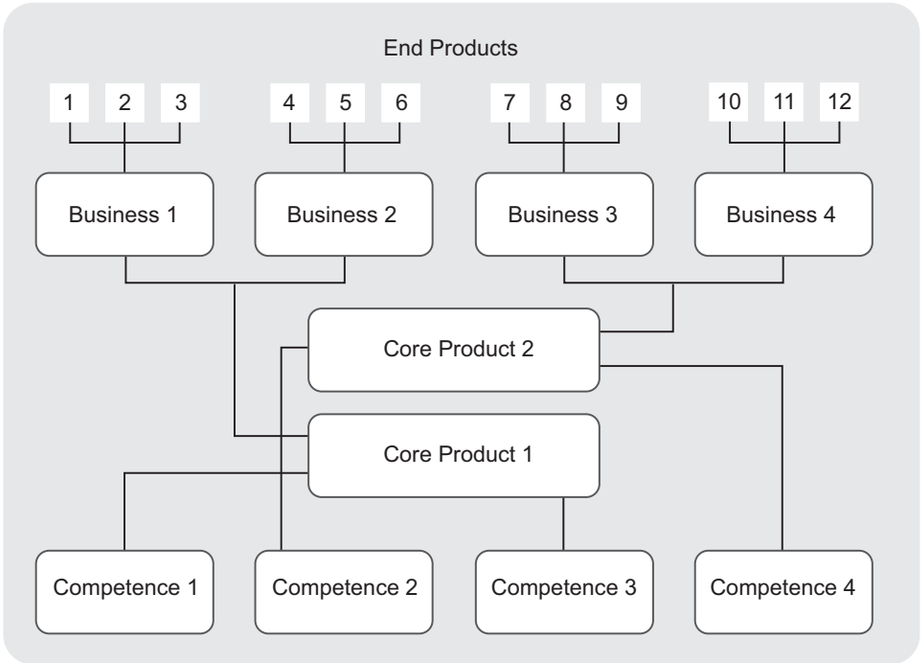

Figure 1: Competencies: the roots of competitive. The corporation, like a tree, grows from its roots. Core products are nourished by competencies and engender business units, whose fruit are end products.

of core competence is felt as decisively in services as in manufacturing. Citicorp was ahead of others investing in an operating system that allowed it to participate in world markets 24 hours a day. Its competence in systems has provided the company the means to differentiate itself from many financial service institutions.

Core competence is communication, involvement, and a deep commitment to working across organizational boundaries. It involves many levels of people and all functions. World-class research in, for example, lasers or ceramics can take place in corporate laboratories without having an impact on any of the businesses of the company. The skills that together constitute core competence must coalesce around individuals whose efforts are not so narrowly focused that they cannot recognize the opportunities for blending their functional expertise with those of others in new and interesting ways.

Core competence does not diminish with use. Unlike physical assets, which do deteriorate over time, competencies are enhanced as they are applied and shared. But competencies still need to be nurtured and protected; knowledge fades if it is not used. Competencies are the glue that binds existing businesses. They are also the engine for new business development. Patterns of diversification and market entry may be guided by them, not just by the attractiveness of markets.

Consider 3M's competence with sticky tape. In dreaming up businesses as diverse as "Post-it" notes, magnetic tape, photographic film, pressure-sensitive tapes, and coated abrasives, the company has brought to bear widely shared competencies in substrates, coatings, and adhesives and devised various ways to combine them. Indeed, 3M has invested consistently in them. What seems to be an extremely diversified portfolio of businesses belies a few shared core competencies.

In contrast, there are major companies that have had the potential to build core competencies but failed to do so because top management was unable to conceive of the company as anything other than a collection of discrete businesses. GE sold much of its consumer electronics business to Thomson of France, arguing that it was becoming increasingly difficult to maintain its competitiveness in this sector. That was undoubtedly so, but it is ironic that it sold several key businesses to competitors who were already competence leaders – Black & Decker in small electrical motors, and Thomson, which was eager to build its competence in microelectronics and had learned from the Japanese that a position in consumer electronics was vital to this challenge.

Management trapped in the strategic business unit (SBU) mind-set almost inevitably finds its individual businesses dependent on external sources for critical components, such as motors or compressors. But these are not just components. They are core products that contribute to the competitiveness of a wide range of end products. They are the physical embodiments of core competencies.

How not to think of competence

Since companies are in a race to build the competencies that determine global leadership, successful companies have stopped imagining themselves as bundles of businesses making products. Canon, Honda, Casio, or NEC may seem to preside over portfolios of businesses unrelated in terms of customers, distribution channels, and merchandising strategy. Indeed, they have portfolios that may seem idiosyncratic at times: NEC is the only global company to be among leaders in computing, telecommunications, and semiconductors *and to* have a thriving consumer electronics business.

> Cultivating core competence does not mean outspending rivals on R&D or getting businesses to become more vertically integrated.

But looks are deceiving. In NEC, digital technology, especially VLSI and systems integration skills, is fundamental. In the core competencies underlying them, disparate businesses become coherent. It is Honda's core competence in engines and power trains that gives it a distinctive advantage in car, motorcycle, lawn mower, and generator businesses. Canon's core competencies in optics, imaging, and microprocessor controls have enabled it to enter, even dominate, markets as seemingly diverse as copiers, laser printers, cameras, and image scanners. Philips worked for more than 15 years to perfect its optical-media (laser disc) competence, as did JVC in building a leading position in video recording, Other examples of core competencies might include mechantronics (the ability to marry mechanical and electronic engineering), video displays, bioengineering, and microelectronics. In the early stages of its competence building, Philips could not have imagined all the products that would be spawned by its optical-media competence, nor could JVC have anticipated miniature camcorders when it first began exploring videotape technologies.

Unlike the battle for global brand dominance, which is visible in the world's broadcast and print media and is aimed at building global "share of mind," the battle to build world-class competencies is invisible to people who aren't deliberately looking for it. Top management often tracks the cost and quality of competitors' products, yet how many managers untangle the web of alliances their Japanese competitors have constructed to acquire competencies at low cost? In how many Western boardrooms is there an explicit, shared understanding of the competencies the company must build for world leadership? Indeed, how many senior executives discuss the crucial distinction between competitive strategy at the level of a business and competitive strategy at the level of an entire company?

Let us be clear. Cultivating core competence does *not* mean outspending rivals on research and development. In 1983, when Canon surpassed Xerox in worldwide unit market share in the copier business, its R&D budget in reprographics was but a small fraction of Xerox's. Over the past 20 years, NEC has spent less on R&D as a percentage of sales than almost all of its American and European competitors.

Nor does core competence mean shared costs, as when two or more SBUs use a common facility – a plant, service facility, or sales force – or share a common component. The gains of sharing may be substantial, but the search for shared costs is typically a post hoc effort to rationalize production across existing businesses, not a premeditated effort to build the competencies out of which the businesses themselves grow.

Building core competencies is more ambitious and different than integrating vertically, moreover. Managers deciding whether to make or buy will start with end products and look upstream to the efficiencies of the supply chain and downstream toward distribution and customers. They do not take inventory of skills and look forward to applying them in nontraditional ways. (Of course, decisions about competencies *do* provide a logic for vertical integration. Canon is not particularly integrated in its copier business, except in those aspects of the vertical chain that support the competencies it regards as critical.)

Identifying core competencies – and losing them

At least three tests can be applied to identify core competencies in a company. First, a core competence provides potential access to a wide variety of markets. Competence in display systems, for example, enables a company to participate in such diverse businesses as calculators, miniature TV sets, monitors for laptop computers, and automotive dash-boards – which is why Casio's entry into the hand-held TV market was predictable. Second, a core competence should make a significant contribution to the perceived customer benefits of the end product. Clearly, Honda's engine expertise fills this bill.

Finally, a core competence should be difficult for competitors to imitate. And it *will* be difficult if it is a complex harmonization of individual technologies and production skills. A rival might acquire some of the technologies that comprise the core competence, but it will find it more difficult to duplicate the more or less comprehensive pattern of internal coordination and learning.

JVC's decision in the early 1960s to pursue the development of a videotape competence passed the three tests outlined here. RCA's decision in the late 1970s to develop a stylus-based video turntable system did not.

Few companies are likely to build world leadership in more than five or six fundamental competencies. A company that compiles a list of 20 to 30 capabilities has probably not produced a list of core competencies. Still, it is probably a good discipline to generate a list of this sort and to see aggregate capabilities as building blocks. This tends to prompt the search for licensing deals and alliances through which the company may acquire, at low cost, the missing pieces.

Most Western companies hardly think about competitiveness in these terms at all. It is time to take a tough-minded look at the risks they are running. Companies that judge competitiveness, their own and their competitors', primarily in terms of the price/performance of end products are courting the erosion of core competencies – or making too little effort to enhance them. The embedded skills that give rise to the next generation of competitive products cannot be "rented in" by outsourcing and OEM-supply relationships. In our view, too many companies have unwittingly surrendered core competencies when they cut internal investment in what they mistakenly thought were just "cost-centers" in favor of outside suppliers.

Unlike Chrysler, Honda would never yield manufacturing responsibility for its engines – much less design of them.

Consider Chrysler. Unlike Honda, it has tended to view engines and power trains as simply one more component. Chrysler is becoming increasingly dependent on Mitsubishi and Hyundai: between 1985 and 1987, the number of outsourced engines went from 252,000 to 382,000. It is difficult to imagine Honda yielding manufacturing responsibility, much less design, of so critical a part of a car's function to an outside company – which is why Honda has made such an enormous commitment to Formula One auto racing. Honda has been able to pool its engine-related technologies; it has parlayed these into a corporatewide competency from which it develops world-beating products, despite R&D budgets smaller than those of GM and Toyota.

Of course, it is perfectly possible for a company to have a competitive product line up but be a laggard in developing core competencies – at least for a while. If a company wanted to enter the copier business today, it would find a dozen Japanese companies more than willing to supply copiers on the basis of an OEM private label. But when fundamental technologies changed or if its supplier decided to enter the market directly and become a competitor, that company's product line, along with all of its investments in marketing and distribution, could be vulnerable. Outsourcing can provide a shortcut to a more competitive product, but it typically contributes little to building the people-embodied skills that are needed to sustain product leadership.

Nor is it possible for a company to have an intelligent alliance or sourcing strategy if it has not made a choice about where it will build competence leadership. Clearly, Japanese companies have benefited from alliances. They've used them to learn from Western partners who were not fully committed to preserving core competencies of their own. As we've argued in these pages before, learning within an alliance takes a positive commitment of resources – travel, a pool of dedicated people, test-bed facilities, time to internalize and test what has been learned.[2] A company may not make this effort if it doesn't have clear goals for competence building.

Another way of losing is forgoing opportunities to establish competencies that are evolving in existing businesses. In the 1970s and 1980s, many American and European companies – like GE, Motorola, GTE, Thorn, and GEC – chose to exit the color television business, which they regarded as mature. If by "mature" they meant that they had run out of new product ideas at precisely the moment global rivals had targeted the TV business for entry, then yes, the industry was mature. But it certainly wasn't mature in the sense that all opportunities to enhance and apply video-based competencies had been exhausted.

In ridding themselves of their television businesses, these companies failed to distinguish between divesting the business and destroying their video media-based competencies. They not only got out of the TV business but they also closed the door on a whole stream of future opportunities reliant on video-based competencies. The television industry, considered by many U.S. companies in the 1970s to be unattractive, is today the focus of a fierce public policy debate about the inability of U.S. corporations to benefit from the $20-billion-a-year opportunity that HDTV will represent in the mid- to late 1990s. Ironically, the U.S. government is being asked to fund a massive research project – in effect, to compensate U.S. companies for their failure to preserve critical core competencies when they had the chance.

In contrast, one can see a company like Sony reducing its emphasis on VCRs (where it has not been very successful and where Korean companies now threaten), without reducing its commitment to video-related competencies. Sony's Betamax led to a debacle. But it emerged with its videotape recording competencies intact and is currently challenging Matsushita in the 8mm camcorder market.

There are two clear lessons here. First, the costs of losing a core competence can be only partly calculated in advance. The baby may be thrown out with the bath water in divestment decisions. Second, since core competencies are built through a process of continuous improvement and enhancement that may span a decade or longer, a company that has failed to invest in core competence building will find it very difficult to enter an emerging market, unless, of course, it will be content simply to serve as a distribution channel.

American semiconductor companies like Motorola learned this painful lesson when they elected to forgo direct participation in the 256k generation of DRAM chips. Having skipped this round, Motorola, like most of its American competitors, needed a large infusion of technical help from Japanese partners to rejoin the battle in the 1-megabyte generation. When it comes to core competencies, it is difficult to get off the train, walk to the next station, and then reboard.

From core competencies to core products

The tangible link between identified core competencies and end products is what we call the core products – the physical embodiments of one or more core competencies, Honda's engines, for example, are core products, linchpins between design and development skills that ultimately lead to a proliferation of end products. Core products are the components or subassemblies that actually contribute to the value of the end products. Thinking in terms of core products forces a company to distinguish between the brand share it achieves in end product markets (for example, 40% of the U.S. refrigerator market) and the manufacturing share it achieves in any particular core product (for example, 5% of the world share of compressor output).

Canon is reputed to have an 84% world manufacturing share in desktop laser printer "engines," even though its brand share in the laser printer business is minuscule. Similarly, Matsushita has a world manufacturing share of about 45% in key VCR components, far in excess of its brand share (Panasonic, JVC, and others) of 20%. And Matsushita has a commanding core product share in compressors worldwide, estimated at 40%, even though its brand share in both the air-conditioning and refrigerator businesses is quite small.

> Maintain world manufacturing dominance in core products, and you reserve the power to shape the evolution of end products.

It is essential to make this distinction between core competencies, core products, and end products because global competition is played out by different rules and for different stakes at each level. To build or defend leadership over the long term, a corporation will probably be a winner at each level. At the level of core competence, the goal is to build world leadership in the design and development of a particular class of product functionality – be it compact data storage and retrieval, as with Philips's optical-media competence, or compactness and ease of use, as with Sony's micromotors and microprocessor controls.

To sustain leadership in their chosen core competence areas, these companies *seek to maximize their world manufacturing share in core products.* The manufacture of core products for a wide variety of external (and internal) customers yields the revenue and market feedback that, at least partly, determines the pace at which core competencies can be enhanced and extended. This thinking was behind JVC's decision in the mid-1970s to establish VCR supply relationships with leading national consumer electronics companies in Europe and the United States. In supplying Thomson, Thorn, and Telefunken (all independent companies at that time) as well as U.S. partners, JVC was able to gain the cash and the diversity of market experience that ultimately enabled it to outpace Philips and Sony. (Philips developed videotape competencies in parallel with JVC, but it failed to build a worldwide network of OEM relationships that would have allowed it to accelerate the refinement of its videotape competence through the sale of core products.)

JVC's success has not been lost on Korean companies like Goldstar, Sam Sung, Kia, and Daewoo, who are building core product leadership in areas as diverse as displays, semiconductors, and automotive engines through their OEM-supply contracts with Western companies. Their avowed goal is to capture investment initiative away from potential competitors, often U.S. companies. In doing so, they accelerate their competence-building efforts while "hollowing out" their competitors. By focusing on competence and embedding it in core products, Asian competitors have built up advantages in component markets first and have then leveraged off their superior products to move downstream to build brand share. And they are not likely to remain the low-cost suppliers forever. As their reputation for brand leadership is consolidated, they may well gain price leadership. Honda has proven this with its Acura line, and other Japanese car makers are following suit.

Control over core products is critical for other reasons. A dominant position in core products allows a company to shape the evolution of applications and end markets. Such compact audio disc-related core products as data drives and lasers have enabled Sony and Philips to influence the evolution of the computer-peripheral business in optical-media storage. As a company multiplies the number of application arenas for its core products, it can consistently reduce the cost, time, and risk in new product development. In short, well-targeted core products can lead to economies of scale *and* scope.

The tyranny of the SBU

The new terms of competitive engagement cannot be understood using analytical tools devised to manage the diversified corporation of 20 years ago, when competition was primarily domestic (GE versus Westinghouse, General Motors versus Ford) and all the key players were speaking the language of the same business schools and consultancies. Old prescriptions have potentially toxic side effects. The need for new principles is most obvious in companies organized exclusively according to the logic of SBUs. The implications of the two alternate concepts of the corporation are summarized in [Table 1].

Obviously, diversified corporations have a portfolio of products and a portfolio of businesses. But we believe in a view of the company as a portfolio of competencies as well. U.S. companies do not lack the technical resources to build competencies, but their top management often lacks the vision to build them and the administrative means for assembling resources spread across multiple businesses. A shift in commitment will inevitably influence patterns of diversification, skill deployment, resource allocation priorities, and approaches to alliances and outsourcing.

Table 1: Two concepts of the corporation: SBU or core competence

	SBU	Core Competence
Basis for competition	Competitiveness of today's products	Interfirm competition to build competencies
Corporate structure	Portfolio of businesses related in product market terms	Portfolio of competencies, core products, and businesses
Status of the business unit	Autonomy is sacrosanct; the SBU "owns" all resources other than cash	SBU is a potential reservoir of core competencies
Resource allocation	Discrete businesses are the unit of analysis; capital is allocated by business	Businesses and competencies are the unit of analysis; top management allocates capital and talent
Value added of top management	Optimising corporate returns through capital allocation trade-offs among businesses	Enunciating strategic architecture and building competencies to secure the future

We have described the three different planes on which battles for global leadership are waged: core competence, core products, and end products. A corporation has to know whether it is winning or losing on each plane. By sheer weight of investment, a company might be able to beat its rivals to blue-sky technologies yet still lose the race to build core competence leadership. If a company is winning the race to build core competencies (as opposed to building leadership in a few technologies), it will almost certainly outpace rivals in new business development. If a company is winning the race to capture world manufacturing share in core products, it will probably outpace rivals in improving product features and the price/performance ratio.

Determining whether one is winning or losing end product battles is more difficult because measures of product market share do not necessarily reflect various companies' underlying competitiveness. Indeed, companies that attempt to build market share by relying on the competitiveness of others, rather than investing in core competencies and world core-product leadership, may be treading on quicksand. In the race for global brand dominance, companies like 3M, Black & Decker, Canon, Honda, NEC, and Citicorp have built global brand umbrellas by proliferating products out of their core competencies. This has allowed their individual businesses to build image, customer loyalty, and access to distribution channels.

When you think about this reconceptualization of the corporation, the primacy of the SBU – an organizational dogma for a generation – is now clearly an anachronism. Where the SBU is an article of faith, resistance to the seductions of decentralization can seem heretical. In many companies, the SBU prism means that only one plane of the global competitive battle, the battle to put competitive products on the shelf *today*, is visible to top management. What are the costs of this distortion?

Underinvestment in Developing Core Competencies and Core Products. When the organization is conceived of as a multiplicity of SBUs, no single business may feel responsible for maintaining a viable position in core products nor be able to justify the investment required to build world leadership in some core competence. In the absence of a more

comprehensive view imposed by corporate management, SBU managers will tend to underinvest. Recently, companies such as Kodak and Philips have recognized this as a potential problem and have begun searching for new organizational forms that will allow them to develop and manufacture core products for both internal and external customers.

SBU managers have traditionally conceived of competitors in the same way they've seen themselves. On the whole, they've failed to note the emphasis Asian competitors were placing on building leadership in core products or to understand the critical linkage between world manufacturing leadership and the ability to sustain development pace in core competence. They've failed to pursue OEM-supply opportunities or to look across their various product divisions in an attempt to identify opportunities for coordinated initiatives.

Imprisoned Resources. As an SBU evolves, it often develops unique competencies. Typically, the people who embody this competence are seen as the sole property of the business in which they grew up. The manager of another SBU who asks to borrow talented people is likely to get a cold rebuff. SBU managers are not only unwilling to lend their competence carriers but they may actually hide talent to prevent its redeployment in the pursuit of new opportunities. This may be compared to residents of an underdeveloped country hiding most of their cash under their mattresses. The benefits of competencies, like the benefits of the money supply, depend on the velocity of their circulation as well as on the size of the stock the company holds.

> How strange that SBU managers should be made to compete for corporate cash but never for key people.

Western companies have traditionally had an advantage in the stock of skills they possess. But have they been able to reconfigure them quickly to respond to new opportunities? Canon, NEC, and Honda have had a lesser stock of the people and technologies that compose core competencies but could move them much quicker from one business unit to another. Corporate R&D spending at Canon is not fully indicative of the size of Canon's core competence stock and tells the casual observer nothing about the velocity with which Canon is able to move core competencies to exploit opportunities.

When competencies become imprisoned, the people who carry the competencies do not get assigned to the most exciting opportunities, and their skills begin to atrophy. Only by fully leveraging core competencies can small companies like Canon afford to compete with industry giants like Xerox. How strange that SBU managers, who are perfectly willing to compete for cash in the capital budgeting process, are unwilling to compete for people – the company's most precious asset, We find it ironic that top management devotes so much attention to the capital budgeting process yet typically has no comparable mechanism for allocating the human skills that embody core competencies. Top managers are seldom able to look four or five levels down into the organization, identify the people who embody critical competencies, and move them across organizational boundaries.

Bounded Innovation. If core competencies are not recognized, individual SBUs will pursue only those innovation opportunities that are close at hand – marginal product-line extensions or geographic expansions. Hybrid opportunities like fax machines, laptop computers, hand-held televisions, or portable music keyboards will emerge only when managers take off their SBU blinkers. Remember, Canon appeared to be in the camera business at the time it was preparing to become a world leader in copiers. Conceiving of the corporation in terms of core competencies widens the domain of innovation.

Developing strategic architecture

The fragmentation of core competencies becomes inevitable when a diversified company's information systems, patterns of communication, career paths, managerial rewards, and processes of strategy development do not transcend SBU lines. We believe that senior management should spend a significant amount of its time developing a corporatewide strategic architecture that establishes objectives for competence building. A strategic architecture is a road map of the future that identifies which core competencies to build and their constituent technologies.

By providing an impetus for learning from alliances and a focus for internal development efforts, a strategic architecture like NEC's C&C can dramatically reduce the investment needed to secure future market leadership. How can a company make partnerships intelligently without a clear understanding of the core competencies it is trying to build and those it is attempting to prevent from being unintentionally transferred?

Of course, all of this begs the question of what a strategic architecture should look like. The answer will be different for every company. But it is helpful to think again of that tree, of the corporation organized around core products and, ultimately, core competencies. To sink sufficiently strong roots, a company must answer some fundamental questions: How long could we preserve our competitiveness in this business if we did not control this particular core competence? How central is this core competence to perceived customer benefits? What future opportunities would be foreclosed if we were to lose this particular competence?

The architecture provides a logic for product and market diversification, moreover. An SBU manager would be asked: Does the new market opportunity add to the overall goal of becoming the best player in the world? Does it exploit or add to the core competence? At Vickers, for example, diversification options have been judged in the context of becoming the best power and motion control company in the world (see the insert [below]).

Vickers learns the value of strategic architecture

The idea that top management should develop a corporate strategy for acquiring and deploying core competencies is relatively new in most U.S. companies. There are a few exceptions. An early convert was Trinova (previously Libbey Owens Ford), a Toledo-based corporation,

which enjoys a worldwide position in power and motion controls and engineered plastics. One of its major divisions is Vickers, a premier supplier of hydraulics components like valves, pumps, actuators, and filtration devices to aerospace, marine, defense, automotive, earth-moving and industrial markets.

Vickers saw the potential for a transformation of its traditional business with the application of electronics disciplines in combination with its traditional technologies. The goal was "to ensure that change in technology does not displace Vickers from its customers." This, to be sure, was initially a defensive move: Vickers recognized that unless it acquired new skills, it could not protect existing markets or capitalize on new growth opportunities. Managers at Vickers attempted to conceptualize the likely evolution of (a) technologies relevant to the power and motion control business, (b) functionalities that would satisfy emerging customer needs, and (c) new competencies needed to creatively manage the marriage of technology and customer needs.

Despite pressure for short-term earnings, top management looked to a 10- to 15-year time horizon in developing a map of emerging customer needs, changing technologies, and the core competencies that would be necessary to bridge the gap between the two. Its slogan was "Into the 21st Century." (A simplified version of the overall architecture developed is shown here [Figure 2].)

Vickers is currently in fluid-power components. The architecture identifies two additional competencies, electric-power components and electronic controls. A systems integration capability that would unite hardware, software, and service was also targeted for development.

The strategic architecture, as illustrated by the Vickers example, is not a forecast of specific products or specific technologies but a broad map of the evolving linkages between customer functionality requirements, potential technologies, and core competencies. It assumes that products and systems cannot be defined with certainty for the future but that pre-empting competitors in the development of new markets requires an early start to building core competencies. The strategic architecture developed by Vickers, while describing the future in competence terms, also provides the basis for making "here and now" decisions about product priorities, acquisitions, alliances, and recruitment.

Since 1986, Vickers has made more than ten clearly targeted acquisitions, each one focused on a specific component or technology gap identified in the overall architecture. The architecture is also the basis for internal development of new competencies. Vickers has undertaken, in parallel, a reorganization to enable the integration of electronics and electrical capabilities with mechanical-based competencies. We believe that it will take another two to three years before Vickers reaps the total benefits from developing the strategic architecture, communicating it widely to all its employees, customers, and investors, and building administrative systems consistent with the architecture.

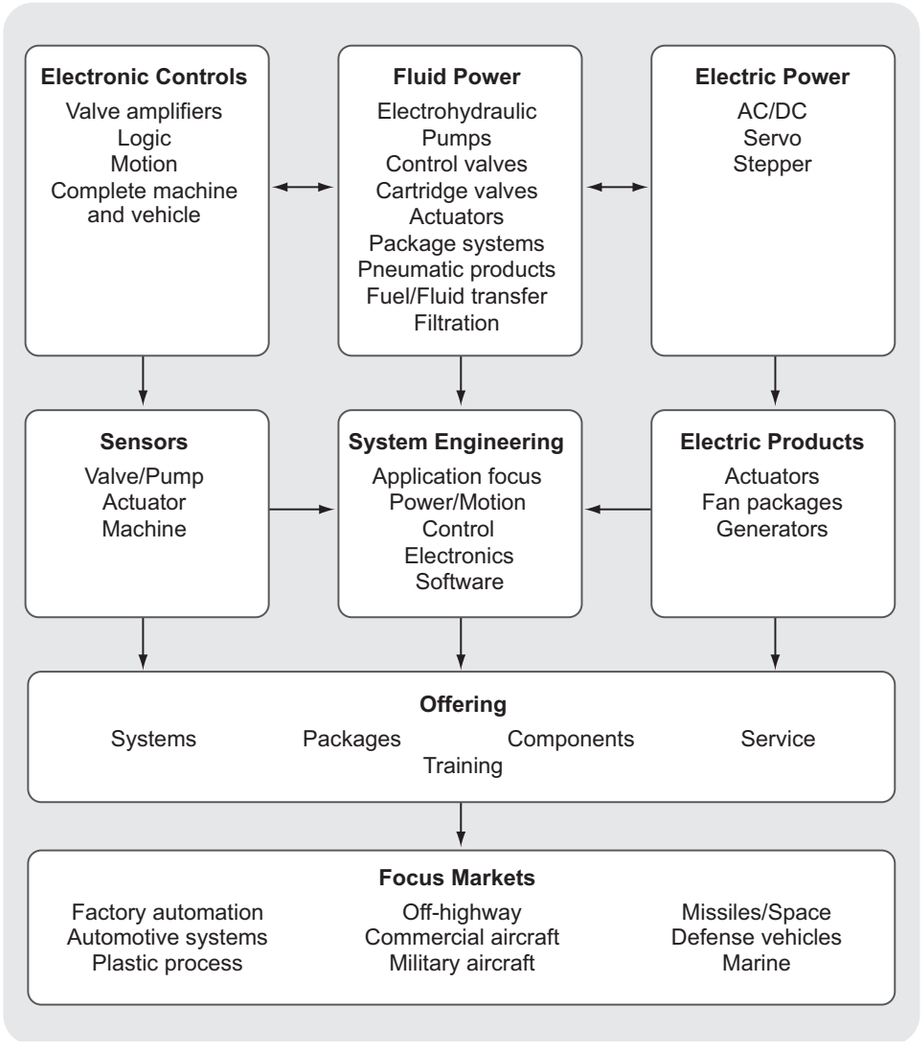

Figure 2: Vickers map of competencies

The strategic architecture should make resource allocation priorities transparent to the entire organization. It provides a template for allocation decisions by top management. It helps lower level managers understand the logic of allocation priorities and disciplines senior management to maintain consistency. In short, it yields a definition of the company and the markets it serves. 3M, Vickers, NEC, Canon, and Honda all qualify on this score: Honda *knew* it was exploiting what it had learned from motor-cycles – how to make high-revving, smooth-running, lightweight engines – when it entered the car business. The task of creating a strategic architecture forces the organization to identify and commit to the technical and production linkages across SBUs that will provide a distinct competitive advantage.

It is consistency of resource allocation and the development of an administrative infrastructure appropriate to it that breathes life into a strategic architecture and creates a managerial culture, teamwork, a capacity to change, and a willingness to share resources, to protect proprietary skills, and to think long term. That is also the reason the specific architecture cannot be copied easily or overnight by competitors. Strategic architecture is

a tool for communicating with customers and other external constituents. It reveals the broad direction without giving away every step.

Redeploying to exploit competencies

If the company's core competencies are its critical resource and if top management must ensure that competence carriers are not held hostage by some particular business, then it follows that SBUs should bid for core competencies in the same way they bid for capital. We've made this point glancingly. It is important enough to consider more deeply.

Once top management (with the help of divisional and SBU managers) has identified overarching competencies, it must ask businesses to identify the projects and people closely connected with them. Corporate officers should direct an audit of the location, number, and quality of the people who embody competence.

> Send a message to your middle managers: the people critical to core competencies are *corporate* assets to be deployed by corporate management.

This sends an important signal to middle managers: core competencies are *corporate* resources and may be reallocated by corporate management. An individual business doesn't own anybody. SBUs are entitled to the services of individual employees so long as SBU management can demonstrate that the opportunity it is pursuing yields the highest possible pay-off on the investment in their skills. This message is further underlined if each year in the strategic planning or budgeting process, unit managers must justify their hold on the people who carry the company's core competencies.

Elements of Canon's core competence in optics are spread across businesses as diverse as cameras, copiers, and semiconductor lithographic equipment and are shown in [Figure 3]. When Canon identified an opportunity in digital laser printers, it gave SBU managers the right to raid other SBUs to pull together the required pool of talent. When Canon's reprographics products division undertook to develop microprocessor-controlled copiers, it turned to the photo products group, which had developed the world's first microprocessor-controlled camera.

Also, reward systems that focus only on product-line results and career paths that seldom cross SBU boundaries engender patterns of behavior among unit managers that are destructively competitive. At NEC, divisional managers come together to identify next-generation competencies. Together they decide how much investment needs to be made to build up each future competency and the contribution in capital and staff support that each division will need to make. There is also a sense of equitable exchange. One division may make a disproportionate contribution or may benefit less from the progress made, but such short-term inequalities will balance out over the long term.

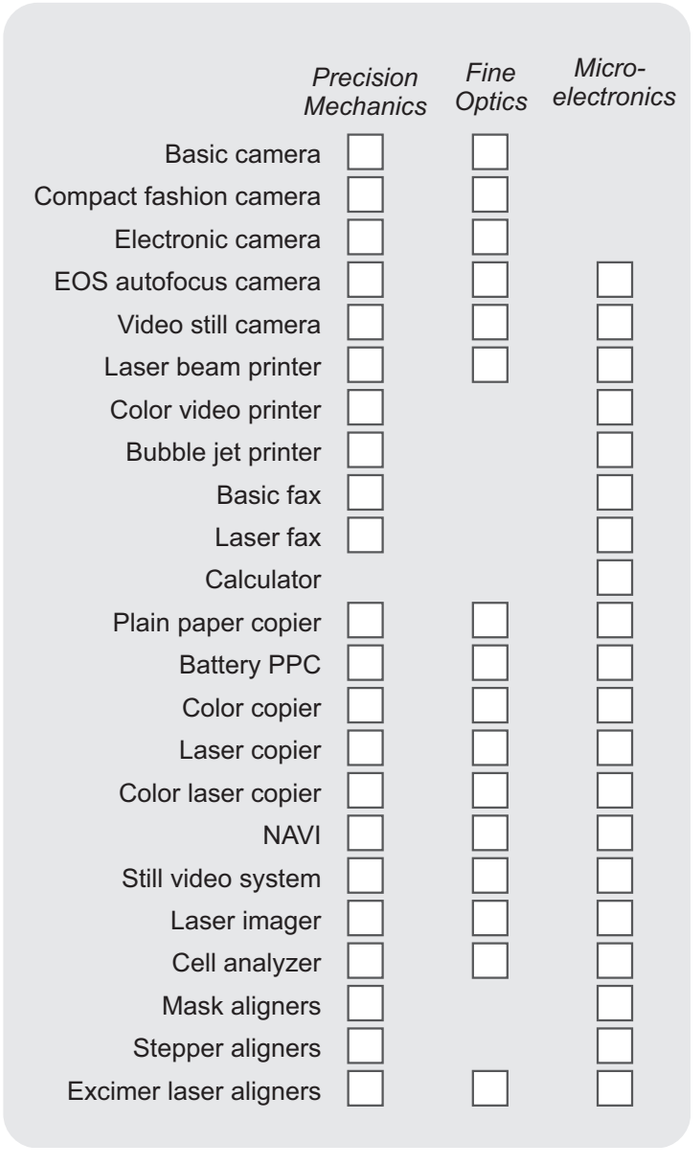

Figure 3: Core competencies at Canon. Every Canon product is the result of at least one core competency.

Incidentally, the positive contribution of the SBU manager should be made visible across the company. An SBU manager is unlikely to surrender key people if only the other business (or the general manager of that business who may be a competitor for promotion) is going to benefit from the redeployment. Cooperative SBU managers should be celebrated as team players. Where priorities are clear, transfers are less likely to be seen as idiosyncratic and politically motivated.

Transfers for the sake of building core competence must be recorded and appreciated in the corporate memory. It is reasonable to expect a business that has surrendered core skills on behalf of corporate opportunities in other areas to lose, for a time, some of its competitiveness. If these losses in performance bring immediate censure, SBUs will be unlikely to assent to skills transfers next time.

Top management's real responsibility is a strategic architecture that guides competence building.

Finally, there are ways to wean key employees off the idea that they belong in perpetuity to any particular business. Early in their careers, people may be exposed to a variety of businesses through a carefully planned rotation program. At Canon, critical people move regularly between the camera business and the copier business and between the copier business and the professional optical-products business. In mid-career, periodic assignments to cross-divisional project teams may be necessary, both for diffusing core competencies and for loosening the bonds that might tie an individual to one business even when brighter opportunities beckon elsewhere. Those who embody critical core competencies should know that their careers are tracked and guided by corporate human resource professionals. In the early 1980s at Canon, all engineers under 30 were invited to apply for membership on a seven-person committee that was to spend two years plotting Canon's future direction, including its strategic architecture.

Competence carriers should be regularly brought together from across the corporation to trade notes and ideas, The goal is to build a strong feeling of community among these people, To a great extent, their loyalty should be to the integrity of the core competence area they represent and not just to particular businesses. In traveling regularly, talking frequently to customers, and meeting with peers, competence carriers may be encouraged to discover new market opportunities.

Core competencies are the wellspring of new business development. They should constitute the focus for strategy at the corporate level. Managers have to win manufacturing leadership in core products and capture global share through brand-building programs aimed at exploiting economies of scope. Only if the company is conceived of as a hierarchy of core competencies, core products, and market-focused business units will it be fit to fight.

Nor can top management be just another layer of accounting consolidation, which it often is in a regime of radical decentralization. Top management must add value by enunciating the strategic architecture that guides the competence acquisition process. We believe an obsession with competence building will characterize the global winners of the 1990s. With the decade underway, the time for rethinking the concept of the corporation is already overdue.

Notes

1 For a fuller discussion, see our article, "Strategic Intent" HBR May–June 1989, p. 63.

2 "Collaborate with Your Competitors and Win," HBR January–February 1989, p. 133, with Yves L. Doz.

Reading 3: The resource-based theory of competitive advantage: implications for strategy formulation

Robert M. Grant

Grant, R. M. (1991) 'The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation', *California Management Review*, vol. 33, no. 3, Spring, pp. 114–135.

Strategy has been defined as "the match an organization makes between its internal resources and skills ... and the opportunities and risks created by its external environment."[1] *During the 1980s, the principal developments in strategy analysis focussed upon the link between strategy and* the external environment. Prominent examples of this focus are Michael Porter's analysis of industry structure and competitive positioning and the empirical studies undertaken by the PIMS project.[2] By contrast, the link between strategy and the firm's resources and skills has suffered comparative neglect. Most research into the strategic implications of the firm's internal environment has been concerned with issues of strategy implementation and analysis of the organizational processes through which strategies emerge.[3]

Recently there has been a resurgence of interest in the role of the firm's resources as the foundation for firm strategy. This interest reflects dissatisfaction with the static, equilibrium framework of industrial organization economics that has dominated much contemporary thinking about business strategy and has renewed interest in older theories of profit and competition associated with the writings of David Ricardo, Joseph Schumpeter, and Edith Penrose.[4] Advances have occurred on several fronts. At the corporate strategy level, theoretical interest in economies of scope and transaction costs have focussed attention on the role of corporate resources in determining the industrial and geographical boundaries of the firm's activities.[5] At the business strategy level, explorations of the relationships between resources, competition, and profitability include the analysis of competitive imitation,[6] the appropriability of returns to innovations,[7] the role of imperfect information in creating profitability differences between competing firms,[8] and the means by which the process of resource accumulation can sustain competitive advantage.[9]

Together, these contributions amount to what has been termed "the resource-based view of the firm." As yet, however, the implications of this "resource-based theory" for strategic management are unclear for two reasons. First, the various contributions lack a single integrating framework. Second, little effort has been made to develop the practical implications of this theory. The purpose of this article is to make progress on both these fronts by proposing a framework for a resource-based approach to strategy formulation which integrates a number of the key themes arising from this stream of literature. The organizing framework for the article is a five-stage procedure for

strategy formulation: analyzing the firm's resource base; appraising the firm's capabilities; analyzing the profit-earning potential of firm's resources and capabilities; selecting a strategy; and extending and upgrading the firm's pool of resources and capabilities. Figure 1 outlines this framework.

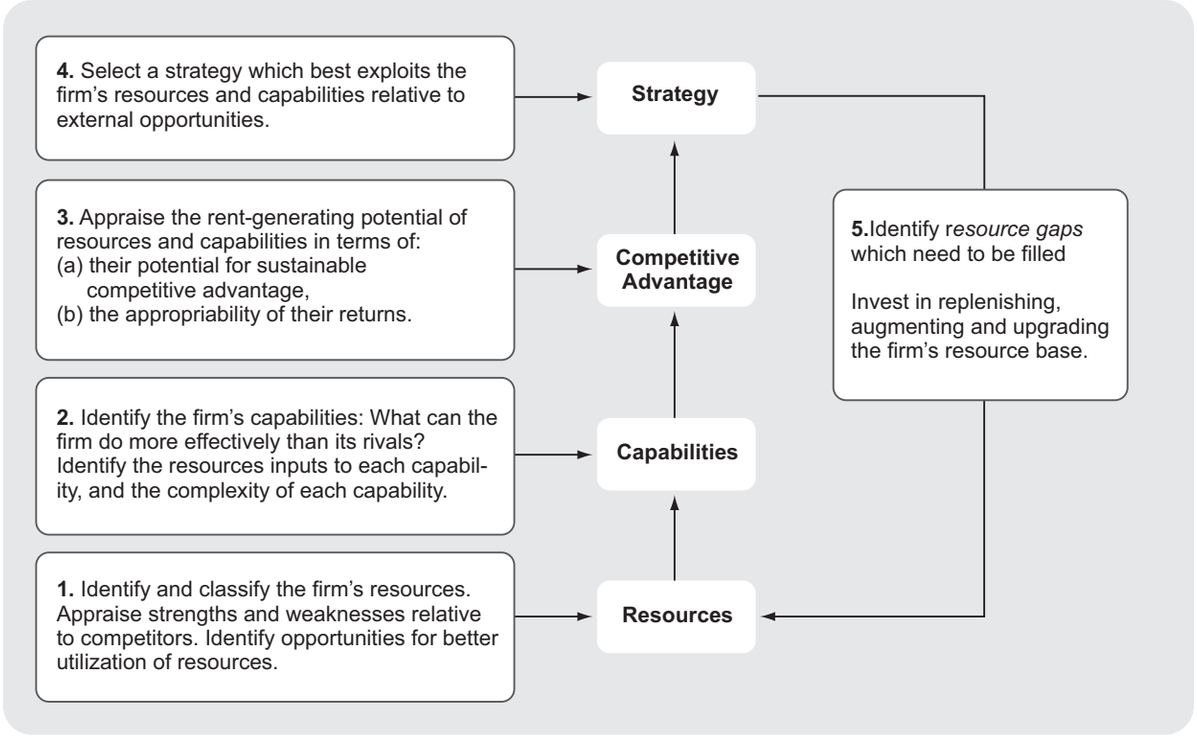

Figure 1: A resource-based approach to strategy analysis: a practical framework

Resources and capabilities as the foundation for strategy

The case for making the resources and capabilities of the firm the foundation for its long-term strategy rests upon two premises: first, internal resources and capabilities provide the basic direction for a firm's strategy, second, resources and capabilities are the primary source of profit for the firm.

Resources and Capabilities as a Source of Direction—The starting point for the formulation of strategy must be some statement of the firm's identity and purpose—conventionally this takes the form of a mission statement which answers the question: "What is our business?" Typically the definition of the business is in terms of the served market of the firm: e.g., "Who are our customers?" and "Which of their needs are we seeking to serve?" But in a world where customer preferences are volatile, the identity of customers is changing, and the technologies for serving customer requirements are continually evolving, an externally focussed orientation does not provide a secure foundation for formulating long-term strategy. When the external environment is in a state of flux, the firm's own resources and capabilities may be a much more stable basis on which to define its identity. Hence, a definition of a business in terms of what it is capable of doing may offer a

more durable basis for strategy than a definition based upon the needs which the business seeks to satisfy.

Theodore Levitt's solution to the problem of external change was that companies should define their served markets broadly rather than narrowly: railroads should have perceived themselves to be in the transportation business, not the railroad business. But such broadening of the target market is of little value if the company cannot easily develop the capabilities required for serving customer requirements across a wide front. Was it feasible for the railroads to have developed successful trucking, airline, and car rental businesses? Perhaps the resources and capabilities of the railroad companies were better suited to real estate development, or the building and managing of oil and gas pipelines. Evidence suggests that serving broadly defined customer needs is a difficult task. The attempts by Merrill Lynch, American Express, Sears, Citicorp, and, most recently, Prudential-Bache to "serve the full range of our customers' financial needs" created serious management problems. Allegis Corporation's goal of "serving the needs of the traveller" through combining United Airlines, Hertz car rental, and Westin Hotels was a costly failure. By contrast, several companies whose strategies have been based upon developing and exploiting clearly defined internal capabilities have been adept at adjusting to and exploiting external change. Honda's focus upon the technical excellence of 4-cycle engines carried it successfully from motorcycles to automobiles to a broad range of gasoline-engine products. 3M Corporation's expertise in applying adhesive and coating technologies to new product development has permitted profitable growth over an ever-widening product range.

Resources as the Basis for Corporate Profitability—A firm's ability to earn a rate of profit in excess of its cost of capital depends upon two factors: the attractiveness of the industry in which it is located, and its establishment of competitive advantage over rivals. Industrial organization economics emphasizes industry attractiveness as the primary basis for superior profitability, the implication being that strategic management is concerned primarily with seeking favorable industry environments, locating attractive segments and strategic groups within industries, and moderating competitive pressures by influencing industry structure and competitors' behavior. Yet empirical investigation has failed to support the link between industry structure and profitability. Most studies show that differences in profitability within industries are much more important than differences between industries.[10] The reasons are not difficult to find: international competition, technological change, and diversification by firms across industry boundaries have meant that industries which were once cozy havens for making easy profits are now subject to vigorous competition.

The finding that competitive advantage rather than external environments is the primary source of inter-firm profit differentials between firms focuses attention upon the sources of competitive advantage. Although the competitive strategy literature has tended to emphasize issues of strategic positioning in terms of the choice between cost and differentiation advantage, and between broad and narrow market scope, fundamental to these choices is the resource position of the firm. For example, the ability to establish a cost advantage requires possession of scale-efficient plants, superior process technology, ownership of low-cost sources of raw materials,

or access to low-wage labor. Similarly, differentiation advantage is conferred by brand reputation, proprietary technology, or an extensive sales and service network.

This may be summed up as follows: business strategy should be viewed less as a quest for monopoly rents (the returns to market power) and more as a quest for Ricardian rents (the returns to the resources which confer competitive advantage over and above the real costs of these resources). Once these resources depreciate, become obsolescent, or are replicated by other firms, so the rents they generate tend to disappear.[11]

We can go further. A closer look at market power and the monopoly rent it offers, suggests that it too has its basis in the resources of firms. The fundamental prerequisite for market power is the presence of barriers to entry.[12] Barriers to entry are based upon scale economies, patents, experience advantages, brand reputation, or some other resource which incumbent firms possess but which entrants can acquire only slowly or at disproportionate expense. Other structural sources of market power are similarly based upon firms' resources: monopolistic price-setting power depends upon market share which is a consequence of cost efficiency, financial strength, or some other resource. The resources which confer market power may be owned individually by firms, others may be owned jointly. An industry standard (which raises costs of entry), or a cartel, is a resource which is owned collectively by the industry members.[13] Figure 2 summarizes the relationships between resources and profitability.

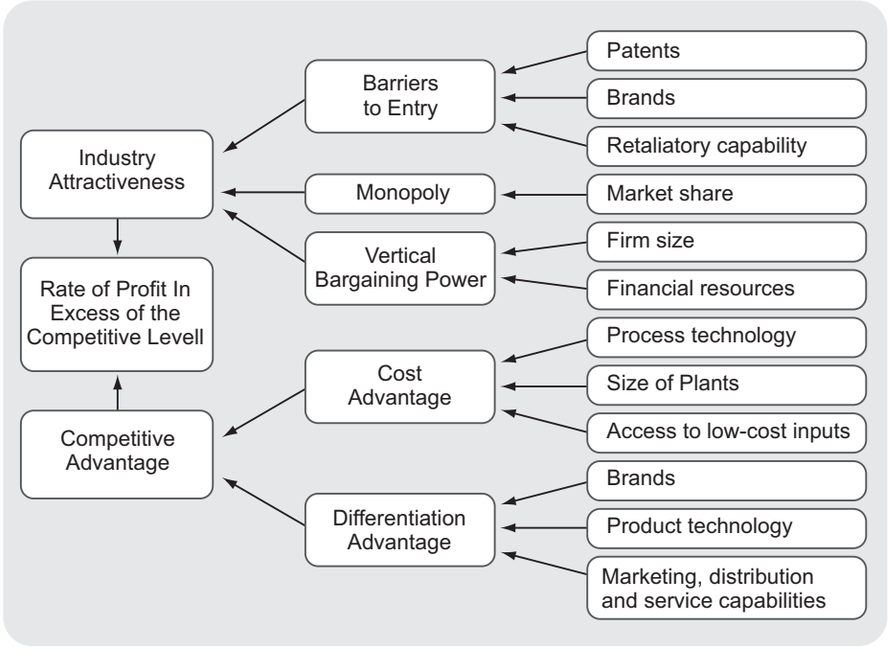

Figure 2: Resources as the basis for profitability

Taking stock of the firm's resources

There is a key distinction between resources and capabilities. Resources are inputs into the production process—they are the basic units of analysis. The

individual resources of the firm include items of capital equipment, skills of individual employees, patents, brand names, finance, and so on.

But, on their own, few resources are productive. Productive activity requires the cooperation and coordination of teams of resources. A capability is the capacity for a team of resources to perform some task or activity. While resources are the source of a firm's capabilities, capabilities are the main source of its competitive advantage.

Identifying Resources—A major handicap in identifying and appraising a firm's resources is that management information systems typically provide only a fragmented and incomplete picture of the firm's resource base. Financial balance sheets are notoriously inadequate because they disregard intangible resources and people-based skills—probably the most strategically important resources of the firm.[14] Classification can provide a useful starting point. Six major categories of resource have been suggested: financial resources, physical resources, human resources, technological resources, reputation, and organizational resources.[15] The reluctance of accountants to extend the boundaries of corporate balance sheets beyond tangible assets partly reflects difficulties of valuation. The heterogeneity and imperfect transferability of most intangible resources precludes the use of market prices. One approach to valuing intangible resources is to take the difference between the stock market value of the firm and the replacement value of its tangible assets.[16] On a similar basis, valuation ratios provide some indication of the importance of firms' intangible resources. Table I shows that the highest valuation ratios are found among companies with valuable patents and technology assets (notably drug companies) and brand-rich consumer-product companies.

The primary task of a resource-based approach to strategy formulation is maximizing rents over time. For this purpose we need to investigate the relationship between resources and organizational capabilities. However, there are also direct links between resources and profitability which raise issues for the strategic management of resources:

- *What opportunities exist for economizing on the use of resources?* The ability to maximize productivity is particularly important in the case of tangible resources such as plant and machinery, finance, and people. It may involve using fewer resources to support the same level of business, or using the existing resources to support a larger volume of business. The success of aggressive acquirors, such as ConAgra in the U.S. and Hanson in Britain, is based upon expertise in rigorously pruning the financial, physical, and human assets needed to support the volume of business in acquired companies.
- *What are the possibilities for using existing assets more intensely and in more profitable employment?* A large proportion of corporate acquisitions are motivated by the belief that the resources of the acquired company can be put to more profitable use. The returns from transferring existing assets into more productive employment can be substantial.

The remarkable turnaround in the performance of the Walt Disney Company between 1985 and 1987 owed much to the vigorous exploitation of Disney's considerable and unique assets: accelerated development of Disney's vast landholdings (for residential development as well as entertainment purposes);

exploitation of Disney's huge film library through cable TV, videos, and syndication; fuller utilization of Disney's studios through the formation of Touchstone Films; increased marketing to improve capacity utilization at Disney theme parks.

Identifying and appraising capabilities

The capabilities of a firm are what it can do as a result of teams of resources working together. A firm's capabilities can be identified and appraised using a standard functional classification of the firm's activities.

Table 1: Twenty companies among the U.S. top 100 companies with the highest ratios of stock price to book value on March 16, 1990

Company	Industry	Valuation Ratio
Coca Cola	Beverages	8.77
Microsoft	Computer software	8.67
Merck	Pharmaceuticals	8.39
American Home Products	Pharmaceuticals	8.00
Wal Mart Stores	Retailing	7.51
Limited	Retailing	6.65
Warner Lambert	Pharmaceuticals	6.34
Waste Management	Pollution control	6.18
Marrion Merrell Dow	Pharmaceuticals	6.10
McCaw Cellular Communications	Telecom equipment	5.90
Bristol Myers Squibb	Pharmaceuticals	5.48
Toys R Us	Retailing	5.27
Abbot Laboratories	Pharmaceuticals	5.26
Walt Disney	Entertainment	4.90
Johnson & Johnson	Health care products	4.85
MCI Communications	Telecommunications	4.80
Eli Lilly	Pharmaceuticals	4.70
Kellogg	Food products	4.58
H.J. Heinz	Food products	4.38
Pepsico	Beverages	4.33

Source: *The 1990 Business Week Top 1000*

For example, Snow and Hrebiniak examined capabilities (in their terminology, "distinctive competencies") in relation to ten functional areas.[17] For most firms, however, the most important capabilities are likely to be those which arise from an integration of individual functional capabilities. For example, McDonald's possesses outstanding functional capabilities within product development, market research, human resource management, financial control, and operations management. However, critical to McDonald's success is the integration of these functional capabilities to create McDonald's remarkable consistency of products and services in thousands of restaurants spread across most of the globe. Hamel and Prahalad use the term "core competencies" to describe these central, strategic capabilities. They are "the collective learning in the organization, especially

how to coordinate diverse production skills and integrate multiple streams of technology."[18] Examples of core competencies include:

- NEC's integration of computer and telecommunications technology
- Philips' optical-media expertise
- Casio's harmonization of know-how in miniaturization, microprocessor design, material science, and ultrathin precision casting
- Canon's integration of optical, microelectronic, and precision-mechanical technologies which forms the basis of its success in cameras, copiers, and facsimile machines
- Black and Decker's competence in the design and manufacture of small electric motors

A key problem in appraising capabilities is maintaining objectivity. Howard Stevenson observed a wide variation in senior managers' perceptions of their organizations' distinctive competencies.[19] Organizations frequently fall victim to past glories, hopes for the future, and wishful thinking. Among the failed industrial companies of both America and Britain are many which believed themselves world leaders with superior products and customer loyalty. During the 1960s, the CEOs of both Harley-Davidson and BSA-Triumph scorned the idea that Honda threatened their supremacy in the market for "serious motorcycles."[20] The failure of the U.S. steel companies to respond to increasing import competition during the 1970s was similarly founded upon misplaced confidence in their quality and technological leadership.[21]

The critical task is to assess capabilities relative to those of competitors. In the same way that national prosperity is enhanced through specialization on the basis of comparative advantages, so for the firm, a successful strategy is one which exploits relative strengths. Federal Express's primary capabilities are those which permit it to operate a national delivery system that can guarantee next day delivery; for the British retailer Marks and Spencer, it is the ability to manage supplier relations to ensure a high and consistent level of product quality; for General Electric, it is a system of spring corporate management that reconciles control, coordination, flexibility, and innovation in one of the world's largest and most diversified corporations. Conversely, failure is often due to strategies which extend the firm's activities beyond the scope of its capabilities.

Capabilities as Organizational Routines—Creating capabilities is not simply a matter of assembling a team of resources: capabilities involve complex patterns of coordination between people and between people and other resources. Perfecting such coordination requires learning through repetition. To understand the anatomy of a firm's capabilities, Nelson and Winter's concept of "organizational routine" is illuminating. Organizational routines are regular and predictable patterns of activity which are made up of a sequence of coordinated actions by individuals. A capability is, in essence, a routine, or a number of interacting routines. The organization itself is a huge network of routines. These include the sequence of routines which govern the passage of raw material and components through the production process, and top management routines which include routines for monitoring business unit performance, for capital budgeting, and for strategy formulation.

The concept of organizational routines offers illuminating insights into the relationships between resources, capabilities, and competitive advantage:

- *The relationship between resources and capabilities.* There is no predetermined functional relationship between the resources of a firm and its capabilities. The types, the amounts, and the qualities of the resources available to the firm have an important bearing on what the firm can do since they place constraints upon the range of organizational routines that can be performed and the standard to which they are performed. However, a key ingredient in the relationship between resources and capabilities is the ability of an organization to achieve cooperation and coordination within teams. This requires that an organization motivate and socialize its members in a manner conducive to the development of smooth-functioning routines. The organization's style, values, traditions, and leadership are critical encouragements to the cooperation and commitment of its members. These can be viewed as intangible resources which are common ingredients of the whole range of a corporation's organizational routines.
- *The trade-off between efficiency and flexibility.* Routines are to the organization what skills are to the individual. Just as the individual's skills are carried out semi-automatically, without conscious coordination, so organizational routines involve a large component of tacit knowledge, which implies limits on the extent to which the organization's capabilities can be articulated. Just as individual skills become rusty when not exercised, so it is difficult for organizations to retain coordinated responses to contingencies that arise only rarely. Hence there may be a trade-off between efficiency and flexibility. A limited repertoire of routines can be performed highly efficiently with near-perfect coordination—all in the absence of significant intervention by top management. The same organization may find it extremely difficult to respond to novel situations.
- *Economies of experience.* Just as individual skills are acquired through practice over time, so the skills of an organization are developed and sustained only through experience. The advantage of an established firm over a newcomer is primarily in the organizational routines that it has perfected over time. The Boston Consulting Group's "experience curve" represents a naive, yet valuable attempt to relate the experience of the firm to its performance. However, in industries where technological change is rapid, new firms may possess an advantage over established firms through their potential for faster learning of new routines because they are less committed to old routines.
- *The complexity of capabilities*. Organizational capabilities differ in their complexity. Some capabilities may derive from the contribution of a single resource. Du Pont's successful development of several cardiovascular drugs during the late 1980s owed much to the research leadership of its leading pharmacologist Pieter Timmermans.[22] Drexel Burnham Lambert's capability in junk bond underwriting during the 1980s resided almost entirely in the skills of Michael Millken. Other routines require highly complex interactions involving the cooperation of many different resources. Walt Disney's "imagineering" capability involves the integration of ideas, skills, and knowledge drawn from

movie making, engineering, psychology, and a wide variety of technical disciplines. As we shall see, complexity is particularly relevant to the sustainability of competitive advantage.

Evaluating the rent-earning potential: sustainability

The returns to a firm's resources and capabilities depend upon two key factors: first, the sustainability of the competitive advantage which resources and capabilities confer upon the firm; and, second, the ability of the firm to appropriate the rents earned from its resources and capabilities.

Over the long-term, competitive advantage and the returns associated with it are eroded both through the depreciation of the advantaged firm's resources and capabilities and through imitation by rivals. The speed of erosion depends critically upon the characteristics of the resources and capabilities. Consider markets where competitive advantage is unsustainable: in "efficient" markets (most closely approximated by the markets for securities, commodities, and foreign exchange) competitive advantage is absent; market prices reflect all available information, prices adjust instantaneously to new information, and traders can only expect normal returns.

The absence of competitive advantage is a consequence of the resources required to compete in these markets. To trade in financial markets, the basic requirements are finance and information. If both are available on equal terms to all participants, competitive advantage cannot exist. Even if privileged information is assumed to exist ("weakly efficient" markets), competitive advantage is not sustainable. Once a trader acts upon privileged information, transactions volume and price movements signal insider activity, and other traders are likely to rush in seeking a piece of the action.

The essential difference between industrial markets and financial markets lies in the resource requirements of each. In industrial markets, resources are specialized, immobile, and long-lasting. As a result, according to Richard Caves, a key feature of industrial markets is the existence of "committed competition—rivalrous moves among incumbent producers that involve resource commitments that are irrevocable for non-trivial periods of time."[23] The difficulties involved in acquiring the resources required to compete and the need to commit resources long before a competitive move can be initiated also implies that competitive advantage is much more sustainable than it is in financial markets. Resource-based approaches to the theory of competitive advantage point towards four characteristics of resources and capabilities which are likely to be particularly important determinants of the sustainability of competitive advantage: *durability*, *transparency*, *transferability*, *and replicability*.

Durability—In the absence of competition, the longevity of a firm's competitive advantage depends upon the rate at which the underlying resources and capabilities depreciate or become obsolete. The durability of resources varies considerably: the increasing pace of technological change is shortening the useful life-spans of most capital equipment and technological resources. On the other hand, reputation (both brand and corporate) appears to depreciate relatively slowly, and these assets can normally be maintained by modest rates of replacement investment. Many of the consumer brands

which command the strongest loyalties today (e.g., Heinz sauces, Kellogg's cereals, Campbell's soup. Hoover vacuum cleaners) have been market leaders for close to a century. Corporate reputation displays similar longevity: the reputations of GE, IBM, Du Pont, and Proctor and Gamble as well-managed, socially responsible, financially sound companies which produce reliable products and treat their employees well has been established over several decades. While increasing environmental turbulence shortens the life spans of many resources, it is possible that it may have the effect of bolstering brand and corporate reputations.

Firm capabilities have the potential to be more durable than the resources upon which they are based because of the firm's ability to maintain capabilities through replacing individual resources (including people) as they wear out or move on. Rolls Royce's capability in the craft-based manufacture of luxury cars and 3M's capability in new product introduction have been maintained over several generations of employees. Such longevity depends critically upon the management of these capabilities to ensure their maintenance and renewal. One of the most important roles that organizational culture plays in sustaining competitive advantage may be through its maintenance support for capabilities through the socialization of new employees.[24]

Transparency—The firm's ability to sustain its competitive advantage over time depends upon the speed with which other firms can imitate its strategy. Imitation requires that a competitor overcomes two problems. First is the information problem: What is the competitive advantage of the successful rival, and how is it being achieved? Second is the strategy duplication problem: How can the would-be competitor amass the resources and capabilities required to imitate the successful strategy of the rival? The information problem is a consequence of imperfect information on two sets of relationships. If a firm wishes to imitate the strategy of a rival, it must first establish the capabilities which underlie the rival's competitive advantage, and then it must determine what resources are required to replicate these capabilities. I refer to this as the "transparency" of competitive advantage. With regard to the first transparency problem, a competitive advantage which is the consequence of superior capability in relation to a single performance variable is more easy to identify and comprehend than a competitive advantage that involves multiple capabilities conferring superior performance across several variables. Cray Research's success in the computer industry rests primarily upon its technological capability in relation to large, ultra-powerful computers. IBM's superior performance is multidimensional and is more difficult to understand. It is extremely difficult to distinguish and appraise the relative contributions to IBM's success of research capability, scale economies in product development and manufacturing, self-sufficiency through backward integration, and superior customer service through excellence in sales, service, and technical support.

With regard to the second transparency problem, a capability which requires a complex pattern of coordination between large numbers of diverse resources is more difficult to comprehend than a capability which rests upon the exploitation of a single dominant resource. For example. Federal Express's next-day delivery capability requires close cooperation between

numerous employees, aircraft, delivery vans, computerized tracking facilities, and automated sorting equipment, all coordinated into a single system. By contrast, Atlantic Richfield's low-cost position in the supply of gasoline to the California market rests simply on its access to Alaskan crude oil. Imperfect transparency is the basis for Lippman and Rumelt's theory of "uncertain imitability": the greater the uncertainty within a market over how successful companies "do it," the more inhibited are potential entrants, and the higher the level of profit that established firms can maintain within that market.[25]

Transferability—Once the established firm or potential entrant has established the sources of the superior performance, imitation then requires amassing the resources and capabilities necessary for a competitive challenge. The primary source of resources and capabilities is likely to be the markets for these inputs. If firms can acquire (on similar terms) the resources required for imitating the competitive advantage of a successful rival, then that rival's competitive advantage will be short lived. As we have seen, in financial markets the easy access by traders to finance and information causes competitive advantage to be fleeting. However, most resources and capabilities are not freely transferable between firms; hence, would-be competitors are unable to acquire (on equal terms) the resources needed to replicate the competitive advantage of an incumbent firm. Imperfections in transferability arise from several sources:

- *Geographical immobility.* The costs of relocating large items of capital equipment and highly specialized employees puts firms which are acquiring these resources at a disadvantage to firms which already possess them.
- *Imperfect information*. Assessing the value of a resource is made difficult by the heterogeneity of resources (particularly human resources) and by imperfect knowledge of the potential productivity of individual resources.[26] The established firm's ability to build up information over time about the productivity of its resources gives it superior knowledge to that of any prospective purchaser of the resources in question.[27] The resulting imperfection of the markets for productive resources can then result in resources being either underpriced or overpriced, thus giving rise to differences in profitability between firms.[28]
- *Firm-specific resources*. Apart from the transactions costs arising from immobility and imperfect information, the value of a resource may fall on transfer due to a decline in its productivity. To the extent that brand reputation is associated with the company which created the brand reputation, a change in ownership of the brand name erodes its value. Once Rover, MG, Triumph, and Jaguar were merged into British Leyland, the values of these brands in differentiating automobiles declined substantially. Employees can suffer a similar decline in productivity in the process of inter-firm transfer. To the extent that an employee's productivity is influenced by situational and motivational factors, then it is unreasonable to expect that a highly successful employee in one company can replicate his/her performance when hired away by another company. Some resources may be almost entirely firm specific—corporate reputation can only be transferred by acquiring the

company as a whole, and even then the reputation of the acquired company normally depreciates during the change in ownership.[29]

- *The immobility of capabilities*. Capabilities, because they require interactive teams of resources, are far more immobile than individual resources—they require the transfer of the whole team. Such transfers can occur (e.g., the defection of 16 of First Boston's mergers and acquisitions staff to Wasserstein, Perella and Company).[30] However, even if the resources that constitute the team are transferred, the nature of organizational routines—in particular, the role of tacit knowledge and unconscious coordination—makes the recreation of capabilities within a new corporate environment uncertain.

Replicability—Imperfect transferability of resources and capabilities limits the ability of a firm to buy in the means to imitate success. The second route by which a firm can acquire a resource or capability is by internal investment. Some resources and capabilities can be easily imitated through replication. In retailing, competitive advantages which derive from electronic point-of-sale systems, retailer charge cards, and extended hours of opening can be copied fairly easily by competitors. In financial services, new product innovations (such as interest rate swaps, stripped bonds, money market accounts, and the like) are notorious for their easy imitation by competitors.

Much less easily replicable are capabilities based upon highly complex organizational routines. IBM's ability to motivate its people and Nucor's outstanding efficiency and flexibility in steel manufacture are combinations of complex routines that are based upon tacit rather than codified knowledge and are fused into the respective corporate cultures. Some capabilities appear simple but prove exceptionally difficult to replicate. Two of the simplest and best-known Japanese manufacturing practices are just-in-time scheduling and quality circles. Despite the fact that neither require sophisticated knowledge or complex operating systems, the cooperation and attitudinal changes required for their effective operation are such that few American and European firms have introduced either with the same degree of success as Japanese companies. If apparently simple practices such as these are deceptively difficult to imitate, it is easy to see how firms that develop highly complex capabilities can maintain their competitive advantage over very long periods of time. Xerox's commitment to customer service is a capability that is not located in any particular department, but it permeates the whole corporation and is built into the fabric and culture of the corporation.

Even where replication is possible, the dynamics of stock-flow relationships may still offer an advantage to incumbent firms. Competitive advantage depends upon the stock of resources and capabilities that a firm possesses. Dierickx and Cool show that firms which possess the initial stocks of the resources required for competitive advantage may be able to sustain their advantages over time.[31] Among the stock-flow relationships they identify as sustaining advantage are: "asset mass efficiencies"—the initial amount of the resource which the firm possesses influences the pace at which the resource can be accumulated; and "time compression diseconomies"— firms which rapidly accumulate a resource incur disproportionate costs ("crash programs"

of R&D and "blitz" advertising campaigns tend to be less productive than similar expenditures made over a longer period).

Evaluating rent-earning potential: appropriability

The returns to a firm from its resources and capabilities depend not only on sustaining its competitive position over time, but also on the firm's ability to appropriate these returns. The issue of appropriability concerns the allocation of rents where property rights are not fully defined. Once we go beyond the financial and physical assets valued in a company's balance sheet, ownership becomes ambiguous. The firm owns intangible assets such as patents, copyrights, brand names, and trade secrets, but the scope of property rights may lack precise definition. In the case of employee skills, two major problems arise: the lack of clear distinction between the technology of the firm and the human capital of the individual; and the limited control which employment contracts offer over the services provided by employees. Employee mobility means that it is risky for a firm's strategy to be dependent upon the specific skills of a few key employees. Also, such employees can bargain with the firm to appropriate the major part of their contribution to value added.

The degree of control exercised by a firm and the balance of power between the firm and an individual employee depends crucially on the relationship between the individual's skills and organizational routines. The more deeply embedded are organizational routines within groups of individuals and the more are they supported by the contributions of other resources, then the greater is the control that the firm's management can exercise. The ability of IBM to utilize its advanced semiconductor research as an instrument of competitive advantage depends, in part, upon the extent to which the research capability is a team asset rather than a reflection of the contribution of brilliant individuals. A firm's dependence upon skills possessed by highly trained and highly mobile key employees is particularly important in the case of professional service companies where employee skills are the overwhelmingly important resource.[32] Many of the problems that have arisen in acquisitions of human-capital-intensive companies arise from conflicts over property rights between the acquiring company and employees of the acquired company. An interesting example is the protracted dispute which followed the acquisition of the New York advertising agency Lord, Geller, Fredrico, Einstein by WPP Group in 1988. Most of the senior executives of the acquired company left to form a new advertising agency taking several former clients with them.[33] Similar conflicts have arisen over technology ownership in high-tech start-ups founded by former employees of established companies.[34]

Where ownership is ambiguous, relative bargaining power is the primary determinant of the allocation of the rents between the firm and its employees where. If the individual employee's contribution to productivity is clearly identifiable, if the employee is mobile, and the employee's skills offer similar productivity to other firms, then the employee is well placed to bargain for that contribution. If the increased gate receipts of the L.A. Kings ice hockey team can be attributed primarily to the presence of Wayne Gretzky on the team and if Gretzky can offer a similar performance

enhancement to other teams, then he is in a strong position to appropriate (as salary and bonuses) most of the increased contribution. The less identifiable is the individual's contribution, and the more firm-specific are the skills being applied, the greater is the proportion of the return which accrues to the firm. Declining profitability among investment banks encouraged several to reassert their bargaining power vis-à-vis their individual stars and in-house gums by engineering a transfer of reputation from these key employees to the company as a whole. At Citibank, Salomon Brothers, Merrill Lynch, and First Boston, this resulted in bitter conflicts between top management and some senior employees.[35]

Formulating strategy

Although the foregoing discussion of the links between resources, capabilities, and profitability has been strongly theoretical in nature, the implications for strategy formulation are straightforward. The analysis of the rent-generating potential of resources and capabilities concludes that the firm's most important resources and capabilities are those which are durable, difficult to identify and understand, imperfectly transferable, not easily replicated, and in which the firm possesses clear ownership and control. These are the firm's "crown jewels" and need to be protected; and they play a pivotal role in the competitive strategy which the firm pursues. The essence of strategy formulation, then, is to design a strategy that makes the most effective use of these core resources and capabilities. Consider, for example, the remarkable turnaround of Harley-Davidson between 1984 and 1988. Fundamental was top management's recognition that the company's sole durable, non-transferable, irreplicable asset was the Harley-Davidson image and the loyalty that accompanied that image. In virtually every other area of competitive performance—production costs, quality, product and process technology, and global market scope—Harley was greatly inferior to its Japanese rivals. Harley's only opportunity for survival was to pursue a strategy founded upon Harley's image advantage, while simultaneously minimizing Harley's disadvantages in other capabilities. Harley-Davidson's new models introduced during this period were all based around traditional design features, while Harley's marketing strategy involved extending the appeal of the Harley image of individuality and toughness from its traditional customer group to more affluent professional types. Protection of the Harley-Davidson name by means of tougher controls over dealers was matched by wider exploitation of the Harley name through extensive licensing. While radical improvements in manufacturing efficiency and quality were essential components of the turnaround strategy, it was the enhancing and broadening of Harley's market appeal which was the primary driver of Harley's rise from 27 to 44 percent of the U.S. heavyweight motorcycle market between 1984 and 1988, accompanied by an increase in net income from $6.5 million to $29.8 million.

Conversely, a failure to recognize and exploit the strategic importance of durable, untransferable, and irreplicable resources almost inevitably has dire consequences. The troubles of BankAmerica Corporation during the mid-1980s can be attributed to a strategy that became increasingly dissociated from the bank's most important assets: its reputation and market position in

retail banking in the Western United States. The disastrous outcome of U.S. Air Group's acquisition of the Californian carrier, PSA, is similarly attributable to U.S. Air's disregard for PSA's most important asset—its reputation in the Californian market for a friendly, laid-back style of service.

Designing strategy around the most critically important resources and capabilities may imply that the firm limits its strategic scope to those activities where it possesses a clear competitive advantage. The principal capabilities of Lotus, the specialist manufacturer of sports cars, are in design and engineering development; it lacked both the manufacturing capabilities or the sales volume to compete effectively in the world's auto market. Lotus's turnaround during the 1980s followed its decision to specialize upon design and development consulting for other auto manufacturers, and to limit its own manufacturing primarily to formula one racing cars.

The ability of a firm's resources and capabilities to support a sustainable competitive advantage is essential to the time frame of a firm's strategic planning process. If a company's resources and capabilities lack durability or are easily transferred or replicated, then the company must either adopt a strategy of short-term harvesting or it must invest in developing new sources of competitive advantage. These considerations are critical for small technological start-ups where the speed of technological change may mean that innovations offer only temporary competitive advantage. The company must seek either to exploit its initial innovation before it is challenged by stronger, established rivals or other start-ups, or it must establish the technological capability for a continuing stream of innovations. A fundamental flaw in EMI's exploitation of its invention of the CT scanner was a strategy that failed to exploit EMI's five-year technical lead in the development and marketing of the X-ray scanner and failed to establish the breadth of technological and manufacturing capability required to establish a fully fledged medical electronics business.

Where a company's resources and capabilities are easily transferable or replicable, sustaining a competitive advantage is only feasible if the company's market is unattractively small or if it can obscure the existence of its competitive advantage. Filofax, the long-established British manufacturer of personal organizers, was able to dominate the market for its products so long as that market remained small. The boom in demand for Filofaxes during the mid-1980s was, paradoxically, a disaster for the company. Filofax's product was easily imitated and yuppie-driven demand growth spawned a host of imitators. By 1989, the company was suffering falling sales and mounting losses.[36] In industries where competitive advantages based upon differentiation and innovation can be imitated (such as financial services, retailing, fashion clothing, and toys), firms have a brief window of opportunity during which to exploit their advantage before imitators erode it away. Under such circumstances, firms must be concerned not with sustaining the existing advantages, but with creating the fiexibility and responsiveness to that permits them to create new advantages at a faster rate than the old advantages are being eroded by competition.

Transferability and replicability of resources and capabilities is also a key issue in the strategic management of joint ventures. Studies of the international joint ventures point to the transferability of each party's

capabilities as a critical determinant of the allocation of benefits from the venture. For example, Western companies' strengths in distribution channels and product technology have been easily exploited by Japanese joint venture partners, while Japanese manufacturing excellence and new product development capabilities have proved exceptionally difficult for Western companies to learn.[37]

Identifying resource gaps and developing the resource base

The analysis so far has regarded the firm's resource base as predetermined, with the primary task of organizational strategy being the deployment of these resources so as to maximize rents over time. However, a resource-based approach to strategy is concerned not only with the deployment of existing resources, but also with the development of the firm's resource base. This includes replacement investment to maintain the firm's stock of resources and to augment resources in order to buttress and extend positions of competitive advantage as well as broaden the firm's strategic opportunity set. This task is known in the strategy literature as filling "resource gaps."[38]

Sustaining advantage in the face of competition and evolving customer requirements also requires that firms constantly develop their resources bases. Such "upgrading" of competitive advantage occupies a central position in Michael Porter's analysis of the competitive advantage of nations.[39] Porter's analysis of the ability of firms and nations to establish and maintain international competitive success depends critically upon the ability to continually innovate and to shift the basis of competitive advantage from "basic" to "advanced" factors of production. An important feature of these "advanced" factors of production is that they offer a more sustainable competitive advantage because they are more specialized (therefore less mobile through market transfer) and less easy to replicate.

Commitment to upgrading the firm's pool of resources and capabilities requires strategic direction in terms of the capabilities that will form the basis of the firm's future competitive advantage. Thus, Prahalad and Hamel's notion of "core competencies" is less an identification of a company's current capabilities than a commitment to a path of future development. For example, NEC's strategic focus on computing and communications in the mid-1970s was not so much a statement of the core strengths of the company as it was a long-term commitment to a particular path of technological development.

Harmonizing the exploitation of existing resources with the development of the resources and capabilities for competitive advantage in the future is a subtle task. To the extent that capabilities are learned and perfected through repetition, capabilities develop automatically through the pursuit of a particular strategy. The essential task, then, is to ensure that strategy constantly pushes slightly beyond the limits of the firms capabilities at any point of time. This ensures not only the perfection of capabilities required by the current strategy, but also the development of the capabilities required to meet the challenges of the future. The idea that, through pursuing its present

strategy, a firm develops the expertise required for its future strategy is referred to by Hiroyuki Itami as "dynamic resource fit":

> Effective strategy in the present builds invisible assets, and the expanded stock enables the firm to plan its future strategy to be carried out. And the future strategy must make effective use of the resources that have been amassed.[40]

Matsushita is a notable exponent of this principle of parallel and sequential development of strategy and capabilities. For example, in developing production in a foreign country, Matsushita typically began with the production of simple products, such as batteries, then moved on the production of products requiring greater manufacturing and marketing sophistication:

> In every country batteries are a necessity, so they sell well. As long as we bring a few advanced automated pieces of equipment for the processes vital to final product quality, even unskilled labor can produce good products. As they work on this rather simple product, the workers get trained, and this increased skill level then permits us to gradually expand production to items with increasingly higher technology level, first radios, then televisions.[41]

The development of capabilities which can then be used as the basis for broadening a firm's product range is a common feature of successful strategies of related diversification. Sequential product addition to accompany the development of technological, manufacturing, and marketing expertise was a feature of Honda's diversification from motorcycles to cars, generators, lawnmowers, and boat engines; and of 3M's expansion from abrasives to adhesives, video tape, and computer disks.

In order both to fully exploit a firm's existing stock of resources, and to develop competitive advantages for the future, the external acquisition of complementary resources may be necessary. Consider the Walt Disney Company's turnaround between 1984 and 1988. In order for the new management to exploit more effectively Disney's vast, under-utilized stock of unique resources, new resources were required. Achieving better utilization of Disney's film studios and expertise in animation required the acquisition of creative talent in the form of directors, actors, scriptwriters, and cartoonists. Putting Disney's vast real estate holdings to work was assisted by the acquisition of the property development expertise of the Arvida Corporation. Building a new marketing team was instrumental in increasing capacity utilization at Disneyland and Disney World.

Conclusion

The resources and capabilities of a firm are the central considerations in formulating its strategy: they are the primary constants upon which a firm can establish its identity and frame its strategy, and they are the primary sources of the firm's profitability. The key to a resource-based approach to strategy formulation is understanding the relationships between resources, capabilities, competitive advantage, and profitability—in particular, an

understanding of the mechanisms through which competitive advantage can be sustained over time. This requires the design of strategies which exploit to maximum effect each firm's unique characteristics.

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Reading 4: Knowledge management and the knowledge-based view of the firm

Robert M. Grant

Grant, R. M. (2008) 'Appendix: Knowledge Management and the Knowledge-based View of the Firm', *Contemporary Strategy Analysis* (6th edn), Blackwell Publishing.

During the past ten years our thinking about resources and capabilities and their management has been extended and reshaped by a surge of interest in knowledge management. Knowledge management refers to processes and practices through which organizations generate value from knowledge. Initially, knowledge management was primarily concerned with information technology – especially the use of intranets, groupware, and databases for storing, analyzing, and disseminating information. Subsequent developments in knowledge management have been concerned less with data and more with organizational learning – especially the transfer of best practices – and the management of intellectual property. The level of interest in knowledge management is indicated by the number of large corporations that have created the position of chief knowledge officer, the spawning of knowledge management practices by consulting firms, and a flood of books on the subject.

Academic interest in the role of knowledge within organizations represents the confluence of several research streams including resource-based theory, the economics of information, epistemology, evolutionary economics, and the management of technology. The outcome has been a *knowledge-based view of the firm* that considers the firm as a set of knowledge assets with the purpose of deploying these assets to create value.[1]

Is knowledge management a major breakthrough in management practice or mere fad? A growing body of evidence points to the ability of knowledge management to generate substantial gains in performance. At the same time many of its manifestations are highly dubious. *The Wall Street Journal* reports that Saatchi & Saatchi's director of knowledge management is "absorbing everything under the sun," including the implications of breakthrough products such as Japanese pantyhose "embedded with millions of microcapsules of vitamin C and seaweed extract that burst when worn to provide extra nourishment for the limbs."[2] Lucy Kellaway of the *Financial Times* observes that "The subject [of knowledge management] has attracted more needless obfuscation and wooly thinking by academics and consultants than any other."[3]

My approach, is to regard knowledge management and the knowledge-based view of the firm as important extensions of our analysis of resources and capabilities. In terms of resources, knowledge is acknowledged to be the overwhelmingly important productive resource; indeed, the value of people and machines lies primarily in the fact that they embody knowledge. From the strategic viewpoint, knowledge is a particularly interesting resource:

many types of knowledge are scarce, much of it is difficult to transfer, and complex forms of knowledge may be very difficult to replicate. Capabilities may be viewed as the manifestation of the knowledge of the organization. Knowledge management offers valuable tools for creating, developing, maintaining, and replicating organizational capabilities.

Types of knowledge

The single most useful contribution of knowledge management is the recognition that different types of knowledge have very different characteristics. A key distinction is between *knowing how* and *knowing about. Know-how* is primarily *tacit* in nature – it involves skills that are expressed through their performance (riding a bicycle, playing the piano). *Knowing about* is primarily *explicit* – it comprises facts, theories, and sets of instructions. The primary difference between tacit and explicit knowledge lies in their transferability. Explicit knowledge is revealed by its communication: it can be transferred across individuals, across space, and across time. This ease of communication means that explicit knowledge – information especially – has the characteristics of a *public good*: once created, it can be replicated among innumerable users at very low marginal cost (IT has driven these costs to near zero for most types of information). Tacit knowledge, on the other hand, cannot be codified; it can only be observed through its application and acquired through practice, hence its transfer between people is slow, costly, and uncertain.

This distinction has major implications for strategy. If explicit knowledge can be transferred so easily, it is seldom the foundation of sustainable competitive advantage. Because explicit knowledge leaks so quickly to competitors, it is only secure when it is protected, either by intellectual property rights (patents, copyrights, trade secrets) or by secrecy ("The formula for Coca-Cola will be kept in a safe in the vault of our Atlanta headquarters guarded by armed Coca-Cola executives".) The challenge of tacit knowledge is the opposite: if Ms. Jenkins is an incredibly successful salesperson, how can the skills embedded in her brain be transferred to the rest of the salesforce of Acme Delights? For consulting companies, the distinction between tacit ("personalized") and explicit ("systematized") knowledge defines their business model and is a central determinant of their strategy.[4]

The tacit/explicit distinction has important implications for the distribution of decision-making authority within the company. If the knowledge relevant to decisions is explicit, it can be easily transferred and assembled in one place, hence permitting centralized decision making (treasury activities within companies are typically centralized). If knowledge is primarily tacit, it cannot be transferred and decision making needs to be located among the people where the knowledge lies. If each salesperson's knowledge of how to make sales is based on their intuition and their understanding of their customers' idiosyncrasies, such knowledge cannot be easily transferred to their sales managers. It follows that decisions about their working hours and selling tactics should be made by them, not by the sales manager.

Types of knowledge process

A second component of knowledge management is understanding the processes through which knowledge is developed and applied. Two categories of knowledge processes can be identified: those that are concerned with increasing the stock of knowledge available to the organization, and those that are concerned with the application of the organization's knowledge. J.-C. Spender refers to the former as *knowledge generation* and the latter as *knowledge application.* James March's distinction between *exploration* and *exploitation* recognizes a similar dichotomy.[5] Within these two broad areas we can identify a number of different knowledge processes, each of which has been associated with particular techniques and approaches to knowledge management (see Figure 1).

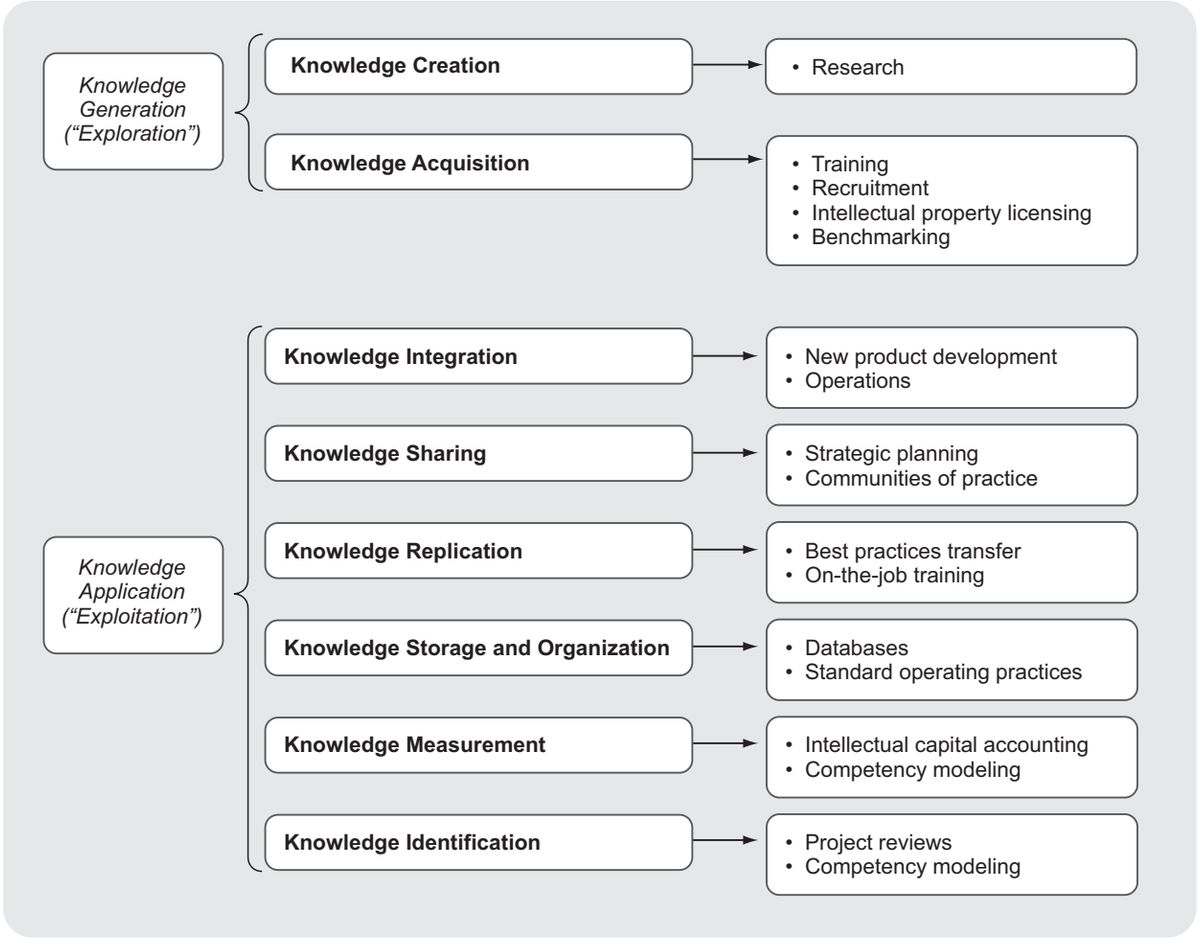

Figure 1: Knowledge processes within the organization

The best-developed and most widely applied techniques of knowledge management have focused on some of the most basic aspects of knowledge application and exploitation. For example:

- In the area of *knowledge identification*, companies are increasingly assembling and systematizing information on their knowledge assets. These include assessments and reviews of patent portfolios and providing personnel data that allows each employee to identify the skills and experience of other employees in the organization. A key aspect of such

knowledge identification is the recognition of knowledge that is being generated within the organization so that it can subsequently be stored for future use. Such knowledge identification is especially important in project-based organizations to ensure that knowledge developed in one project is not lost to the organization. Systematic post-project reviews are a central theme in the US Army's "lessons learned" procedure, which distils the results of practice maneuvers and simulated battles into tactical guidelines and recommended procedures. A process is applied to learning from actual operations. During the military intervention in Bosnia in 1995, the results of every operation were forwarded to the Center for Lessons Learned to be collected and codified. Resulting lessons learned were distributed to active units every 72 hours.[6] By the late 1990s, every major management consulting firm had introduced a system whereby learning from each consulting project was identified, written up, and submitted to a common database.

- *Knowledge measurement* involves measuring and valuing the organization's stock of knowledge and its utilization. Skandia, the Swedish insurance company, has pioneered knowledge metrics with its system of intellectual capital accounting.[7] Dow Chemical also uses intellectual capital management to link its intellectual property portfolio to shareholder value.
- For knowledge to be efficiently utilized within the organization, *knowledge storage and organization* are critical. The key contribution of information technology to knowledge management has been in creating databases for storing information, for organizing information, and for accessing and communicating information, to facilitate the transfer of and access to knowledge. The backbone of the Booz-Allen & Hamilton's "Knowledge-On-Line" system,[8] Accenture's "Knowledge Xchange," and AMS's "Knowledge Express"[9] is an IT system that comprises a database, groupware, dedicated search engine, and an intranet that permits employees to input and access information.
- *Knowledge sharing and replication* involves the transfer of knowledge from one part of the organization (or from one person) to be replicated in another part (or by another individual). A central function of IT-based knowledge management systems is to facilitate such transfer. However, tacit knowledge is not amenable to codification within an IT system. The traditional answer to the problem of replicating tacit knowledge is to use apprenticeships and other forms of on-the-job training. Recently, organizations have discovered the important role played by informal networks in transferring experiential knowledge. These self-organizing *communities of practice* are increasingly being deliberately established and managed as a means of facilitating knowledge sharing and group learning.[10] Replicating capabilities poses an even greater challenge. Transferring best practices within companies is not simply about creating appropriate incentives; complexity and credibility of the knowledge involved are key impediments.[11]
- *Knowledge integration* represents one of the greatest challenges to any company. Producing most goods and services requires bringing together the knowledge of multiple individuals. The essential task of almost all organizational processes is integrating individual knowledge in an effective and efficient manner. For example, a strategic planning system

may be seen as a vehicle for integrating the different knowledge bases of managers at different levels of the organization and from different functions in order to create the best strategy for the company. Similarly with new product development: the key is to integrate the knowledge of many technical experts and across a range of functions. A wide body of evidence points to the effectiveness of project teams in integrating knowledge.[12]

Within knowledge generation, it is possible to distinguish between the internal creation of knowledge (*knowledge creation*) and the search to identify and absorb existing knowledge from outside the organization (*knowledge acquisition*). The mechanisms through which knowledge is acquired from outside the organization are typically well known: hiring skilled employees, acquiring companies or their knowledge resources, benchmarking companies that are recognized as "best-in-class" for certain practices, and learning through alliances and joint ventures. Creativity remains a key challenge for most companies. While most studies of creativity emphasize the role of the individual and the types of environment conducive to individual creativity, Dorothy Leonard has explored the role of groups and group processes in stimulating innovation.[13] […]

Knowledge conversion

In practice, knowledge generation and application are not distinct. For example, the application of existing knowledge creates opportunities for learning that increase the stock of knowledge.[14] Nonaka's theory of knowledge creation identifies the processes of *knowledge conversion* – between tacit and explicit and between individual and organizational knowledge – as central to the organization's building of its knowledge base.[15] The conversion of knowledge between the different knowledge types (the "epistemological dimension") and knowledge levels (the "ontological dimension") forms a knowledge spiral in which the stock of knowledge broadens and deepens (see Figure 2). Thus, explicit knowledge is *internalized* into tacit knowledge in the form of intuition, know-how, and routines, while tacit knowledge is *externalized* into explicit knowledge through articulation and codification.

Converting tacit into explicit knowledge is critical to companies that wish to replicate their capabilities:

- Henry Ford's Model T was initially produced on a small scale by skilled metal workers one car at a time. Ford's assembly-line mass-production technology systematized that tacit knowledge, built it into machines and a business process, and replicated it in Ford plants throughout the world. With the knowledge built into the system, car workers no longer needed to be skilled craftsmen.
- When Ray Kroc discovered the McDonald brothers' hamburger stand in Riversdale, California, he quickly recognized the potential for systematizing and replicating their process through operating manuals, videos, and training programs. It allows thousands of McDonald's outlets

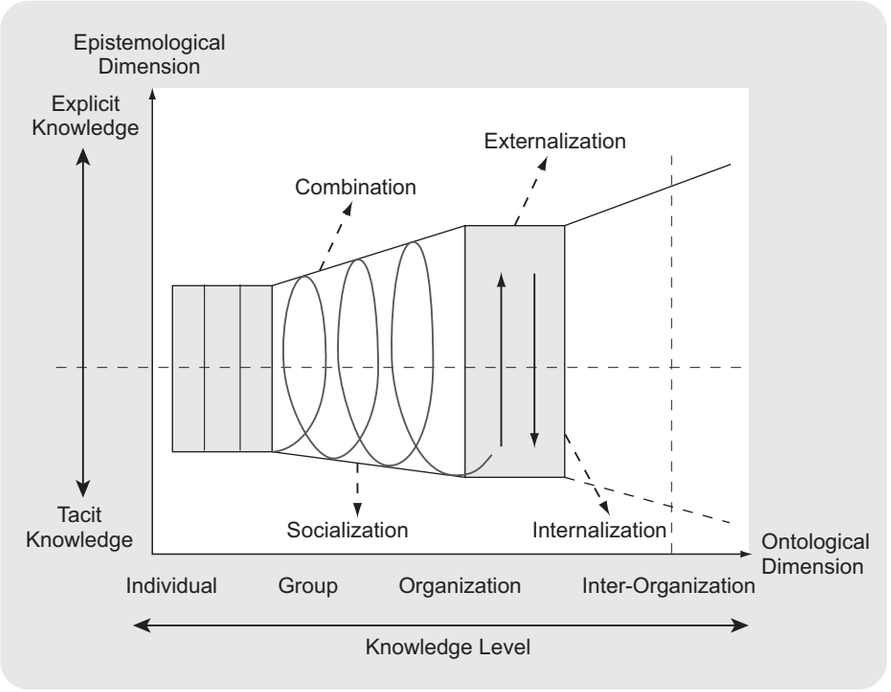

Figure 2: Nonaka's spiral of knowledge creation

Source: I. Nonaka, "On a knowledge creating organization," paper presented at AIF National Congress (Posma, October 1993).

worldwide to produce fast food to exacting standards by a labor force that, for the most part, possesses few culinary skills.

This shift in the knowledge base of the firm, from tacit knowledge located in individuals to explicit knowledge held by the organization, is fundamental to the transformation of craft enterprises into industrial enterprises. In addition to Ford and McDonald's, Marriott in hotels, Andersen Consulting (now Accenture) in IT consulting, and Starbucks in coffee shops have pioneered transformation through systematization (see Figure 3).

Conclusion

Analysis of the characteristics of knowledge and the processes through which it is created and deployed offers striking insights into the principles and practices of management – including the development of organizational capability.

Given the scope of knowledge management and the vast range of tools, techniques, and frameworks that have been developed, where does a company begin to incorporate knowledge management within its management systems? A useful starting point is to identify the linkage between knowledge and the basis on which the firm creates value. This can then highlight the key processes through which knowledge is generated and applied. Consider the following examples:

- For Dow Chemical, the core of its value creation is generating intellectual property in new chemical products and processes, and exploiting them through worldwide manufacturing, marketing, and sales.

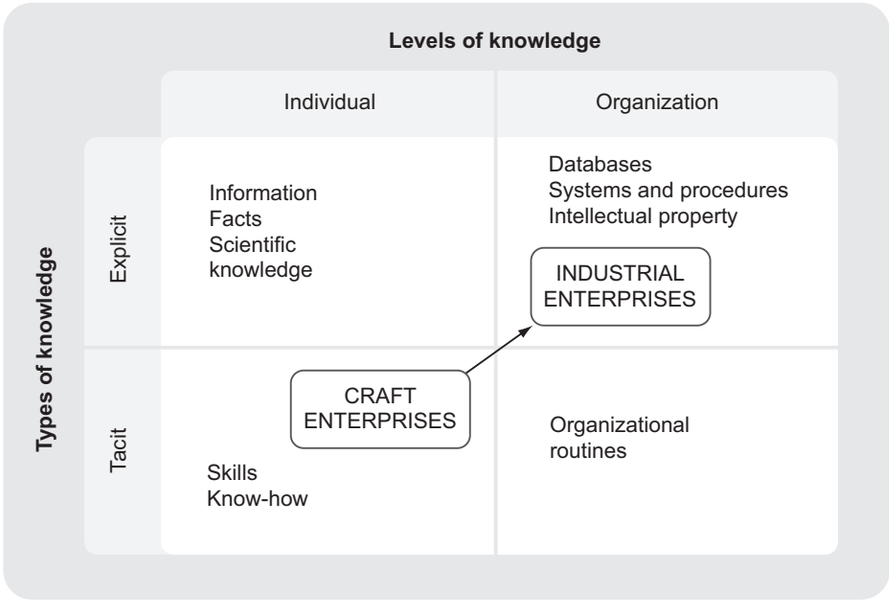

Figure 3: Knowledge types and the transformation from craft to industrial enterprises

Source: I. Nonaka, "On knowledge creating organization," paper presented at AIR National Congress (Posma, October 1993). © 1993 by I. Nonaka. Reprinted by permission of the author.

Dow's "Intellectual Capita Management" places its central emphasis on the company's patent portfolio and links its intellectual property to a broad range of intellectual capital variables and processes and ultimately to the company's total value.[16]

- For McKinsey & Co., creating value for clients requires continually building on the knowledge it generates from client assignments, and conceptualizing and sharing that knowledge base. This is achieved through a system that ensures the knowledge generated from each project is captured and made available for subsequent client projects; a matrix structure of industry and functional practices that permits specialized knowledge to be created and stored; and an R&D function in the form of the McKinsey Global Institute.[17]
- For McDonald's Corporation, knowledge management is primarily concerned with implementing the McDonald's system. This is a detailed set of operating practices that extend from the company's values down to the placing of a pickle on the bun of a Big Mac and the procedure for servicing a McDonald's milkshake machine. The essence of the McDonald's system is the systematization of knowledge into a detailed set of rules that are followed in every McDonald's outlet. These explicit operating practices are internalized within employees' cognition and behavior through rigorous attention to training, both in formal training programs at Hamburger University, and in training at individual restaurants.[18]

The design of every knowledge process must take account of the characteristics of the knowledge being deployed. The fundamental distinction here is between explicit and tacit knowledge. Take a simple example of the

transfer of best practice between the different fabrication plants of a multinational semiconductor plant. If the knowledge is explicit, then such knowledge can be disseminated in the form of reports, or directives requiring every plant to adopt a new standard operating procedure. If the knowledge is tacit – it is the result of the experience or intuition of a single plant manager – the task is more difficult. Transferring the best practice is likely to require either visits by other plant managers to the innovating plant, or for the innovating plant manager to adopt a consulting role and visit other plants in the group for the purpose of teaching employees there.

It is in the area of managing tacit knowledge (which includes, typically, the major part of the knowledge relevant to organizational capability) where the major challenges and opportunities in knowledge management lie. Information technology has made huge strides in the storage, analysis, and systematization of explicit knowledge. However, the greater part of organizational learning is experience based and intuitive. Identifying this knowledge, and transferring it to other parts of the organization in order to utilize it more effectively, remains a fundamental management challenge.

Notes

1 "The knowledge-based view" offers a rationale for the firm that is based on its effectiveness as an institution for creating, assembling, and transforming knowledge into goods and services. See: B. Kogut and U. Zander, "Knowledge of the Firm, Combinative Capabilities and the Replication of Technology, *Organization Science* 3 (1992): 387–99; R. M. Grant, "Toward a Knowledge based Theory of the Firm," *Strategic Management Journal* 17, Winter Special Issue (1996): 109–22.

2 "Saatchi's 'Manager of Knowledge' Keeps Track of What's Trendy," *Wall Street Journal* (February 28, 1997): B.16.

3 Lucy Kellaway column, *Financial Times* (June 23, 1999): 13.

4 M. Hansen, N. Nohria, and T. Tierney, "What's Your Strategy for Managing Knowledge?," *Harvard Business Review* (March 1999): 106–16.

5 J.C. Spender, "Limits to Learning from the West," *The International Executive* 34 (September/October 1992): 389–410; J. G. March, "Exploration and Exploitation in Organizational Learning," *Organization Science* 2 (1991): 71–87.

6 "Lessons Learned: Army Devises System to Decide What Does and What Does Not Work," *Wall Street Journal* (May 23, 1997): A1 and A10.

7 L. Edvinsson and S. Maline, *Intellectual Capital: Realizing Your Company's True Value by Finding its Hidden Brainpower* (New York: Harper Business, 1997); D. Marchand and J. Roos, *Skandia AFS: Measuring and Visualizing Intellectual Capital*, Case No. GM 624 (Lausanne: IMD, 1996).

8 *Cultivating Capabilities to Innovate: Booz-Allen & Hamilton*, Case No. 9-698-027 (Boston: Harvard Business School, 1997).

9 *American Management Systems: The Knowledge Centers*, Case No. 9-697-068 (Boston: Harvard Business School, 1997).

10 E. C. Wenger and W. M. Snyder, "Communities of Practice: The Organizational Frontier," *Harvard Business Review* (January–February 2000).

11 G. Szulanski, "Exploring Internal Stickiness: Impediments to the Transfer of Best Practices within the Firm," *Strategic Management Journal* 17, Winter Special Issue (1996): 27–44.

12 See, for example, K. B. Clark and T. Fujimoto, *Product Development Performance* (New York: Free Press, 1991); and K. Imai, I. Nonaka, and H. Takeuchi, "Managing the New Product Development Process: How Japanese Companies Learn and Unlearn," in K. Clark, R. Hayes, and C. Lorenz (eds), *The Uneasy Alliance* (Boston: Harvard Business School Press, 1985).

13 D. Leonard and S. Sensiper, "The Role of Tacit Knowledge in Group Innovation," *California Management Review* 40 (Spring 1998): 112–32; D. Leonard, *The Wellsprings of Knowledge* (Boston: Harvard Business School Press, 1996).

14 P. McNamara, "Managing the Tension Between Knowledge Exploration and Exploitation: The Case of UK Biotechnology," Ph.D. thesis (City University Business School, London, 2000).

15 I. Nonaka and H. Takeuchi, *The Knowledge-Creating Company* (Oxford: Oxford University Press, 1995).

16 G. Petrash, "Dow's Journey to a Knowledge Value Management Culture," *European Management Journal* 14 (August 1996): 365–73.

17 *McKinsey & Company: Managing Knowledge and Learning*, Case No. 9-396-357 (Boston: Harvard Business School, 1996).

18 As McDonald's has faced new challenges – internationalization and trends towards healthier eating – it has changed its systems for managing knowledge, emphasizing decentralized product development and internal knowledge sharing through Food Improvement Teams and corporate blogs.

Reading 5: Extract from 'Dynamic capabilities: what are they?'

Kathleen M. Eisenhardt and Jeffrey A. Martin

Eisenhardt, K. M. and Martin, J. A. (2000) 'Dynamic capabilities: what are they?', *Strategic Management Journal*, 21: 1105–1121.

The resource-based view of the firm (RBV) is an influential theoretical framework for understanding how competitive advantage within firms is achieved and how that advantage might be sustained over time (Barney, 1991; Nelson, 1991; Penrose, 1959; Peteraf, 1993; Prahalad and Hamel, 1990; Schumpeter, 1934; Teece, Pisano, and Shuen, 1997; Wernerfelt, 1984). This perspective focuses on the internal organization of firms, and so is a complement to the traditional emphasis of strategy on industry structure and strategic positioning within that structure as the determinants of competitive advantage (Henderson and Cockburn, 1994; Porter, 1979). In particular, RBV assumes that firms can be conceptualized as bundles of resources, that those resources are heterogeneously distributed across firms, and that resource differences persist over time (Amit and Schoemaker, 1993; Mahoney and Pandian, 1992; Penrose, 1959; Wernerfelt, 1984). Based on these assumptions, researchers have theorized that when firms have resources that are valuable, rare, inimitable, and nonsubstitutable (i.e., so-called VRIN attributes), they can achieve sustainable competitive advantage by implementing fresh value-creating strategies that cannot be easily duplicated by competing firms (Barney, 1991; Conner and Prahalad, 1996; Nelson, 1991; Peteraf, 1993; Wernerfelt, 1984, 1995). Finally, when these resources and their related activity systems have complementarities, their potential to create sustained competitive advantage is enhanced (Collis and Montgomery, 1995, 1998; Milgrom, Qian, and Roberts, 1991; Milgrom and Roberts, 1990; Porter, 1996).

Recently, scholars have extended RBV to dynamic markets (Teece *et al.*, 1997). The rationale is that RBV has not adequately explained how and why certain firms have competitive advantage in situations of rapid and unpredictable change. In these markets, where the competitive landscape is shifting, the dynamic capabilities by which firm managers 'integrate, build, and reconfigure internal and external competencies to address rapidly changing environments' (Teece *et al.*, 1997: 516) become the source of sustained competitive advantage. The manipulation of knowledge resources, in particular, is especially critical in such markets (Grant, 1996; Kogut, 1996).

Despite the significance of RBV, the perspective has not gone unchallenged. It has been called conceptually vague and tautological, with inattention to the mechanisms by which resources actually contribute to competitive advantage (e.g., Mosakowski and McKelvey, 1997; Priem and Butler, 2000; Williamson, 1999). It has also been criticized for lack of empirical grounding (e.g., Williamson, 1999; Priem and Butler, 2000). And,

particularly relevant here, sustained competitive advantage has been seen as unlikely in dynamic markets (e.g., D'Aveni, 1994).

The purpose of this paper is to extend our understanding of dynamic capabilities and in so doing enhance RBV. Since dynamic capabilities are processes embedded in firms, we assume an organizational and empirical lens, rather than an economic and formal modeling one (Barney, 1991; Peteraf, 1993). We examine the nature of dynamic capabilities, how those capabilities are influenced by market dynamism, and their evolution over time.

We have several observations. First, dynamic capabilities consist of specific strategic and organizational processes like product development, alliancing, and strategic decision making that create value for firms within dynamic markets by manipulating resources into new value-creating strategies. Dynamic capabilities are neither vague nor tautologically defined abstractions. Second, these capabilities, which often have extensive empirical research streams associated with them, exhibit commonalities across effective firms or what can be termed 'best practice.' Therefore, dynamic capabilities have greater equifinality, homogeneity, and substitutability across firms than traditional RBV thinking implies. Third, effective patterns of dynamic capabilities vary with market dynamism. When markets are moderately dynamic such that change occurs in the context of stable industry structure, dynamic capabilities resemble the traditional conception of routines (e.g., Cyert and March, 1963; Nelson and Winter, 1982). That is, they are complicated, detailed, analytic processes that rely extensively on existing knowledge and linear execution to produce predictable outcomes. In contrast, in high-velocity markets where industry structure is blurring, dynamic capabilities take on a different character. They are simple, experiential, unstable processes that rely on quickly created new knowledge and iterative execution to produce adaptive, but unpredictable outcomes. Finally, well-known learning mechanisms guide the evolution of dynamic capabilities and underlie path dependence.

Overall, our work attempts to contribute to RBV by explicating the nature of dynamic capabilities in a way that is realistic, empirically valid, and non-tautological. Our work also attempts to clarify RBV's logic of dynamic capabilities, resources, and competitive advantage. We argue that, since the functionality of dynamic capabilities can be duplicated across firms, their value for competitive advantage lies in the resource configurations that they create, not in the capabilities themselves. Dynamic capabilities are necessary, but not sufficient, conditions for competitive advantage. We also argue that dynamic capabilities can be used to enhance existing resource configurations in the pursuit of long-term competitive advantage (RBV's logic of leverage). They are, however, also very frequently used to build new resource configurations in the pursuit of temporary advantages (logic of opportunity). Most significant, we suggest a boundary condition. RBV breaks down in high-velocity markets, where the strategic challenge is maintaining competitive advantage when the duration of that advantage is inherently unpredictable, where time is an essential aspect of strategy, and the dynamic capabilities that drive competitive advantage are themselves unstable processes that are challenging to sustain.

Dynamic capabilities

Resources are at the heart of the resource-based view (RBV). They are those specific physical (e.g., specialized equipment, geographic location), human (e.g., expertise in chemistry), and organizational (e.g., superior sales force) assets that can be used to implement value-creating strategies (Barney, 1986; Wernerfelt, 1984, 1995). They include the local abilities or 'competencies' that are fundamental to the competitive advantage of a firm such as skills in molecular biology for biotech firms or in advertising for consumer products firms. As such, resources form the basis of unique value-creating strategies and their related activity systems that address specific markets and customers in distinctive ways, and so lead to competitive advantage (e.g., configurations, Collis and Montgomery, 1995, 1998; Porter, 1996; core competencies, Prahalad and Hamel, 1990; lean production, Womack, Jones, and Roos, 1991).

Dynamic capabilities are the antecedent organizational and strategic routines by which managers alter their resource base—acquire and shed resources, integrate them together, and recombine them—to generate new value-creating strategies (Grant, 1996; Pisano, 1994). As such, they are the drivers behind the creation, evolution, and recombination of other resources into new sources of competitive advantage (Henderson and Cockburn, 1994; Teece *et al.*, 1997). Similar to Teece and colleagues (1997), we define dynamic capabilities as:

> The firm's processes that use resources—specifically the processes to integrate, reconfigure, gain and release resources—to match and even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die.

This definition of dynamic capabilities is similar to the definitions given by other authors. For example, Kogut and Zander (1992) use the term 'combinative capabilities' to describe organizational processes by which firms synthesize and acquire knowledge resources, and generate new applications from those resources. Henderson and Cockburn (1994) similarly use the term 'architectural competence' while Amit and Schoemaker (1993) use 'capabilities.'

Dynamic capabilities as identifiable, specific processes

Dynamic capabilities are often described in vague terms such as 'routines to learn routines' that have been criticized as being tautological, endlessly recursive, and nonoperational (e.g., Mosakowski and McKelvey, 1997; Priem and Butler, 2000; Williamson, 1999). Yet, dynamic capabilities actually consist of identifiable and specific routines that often have been the subject of extensive empirical research in their own right outside of RBV.

Some dynamic capabilities integrate resources. For example, product development routines by which managers combine their varied skills and functional backgrounds to create revenue-producing products and services (e.g., Clark and Fujimoto, 1991; Dougherty, 1992; Helfat and Raubitschek, 2000) are such a dynamic capability. Toyota has, for example,

used its superior product development skills to achieve competitive advantage in the automotive industry (Clark and Fujimoto, 1991). Similarly, strategic decision making is a dynamic capability in which managers pool their various business, functional, and personal expertise to make the choices that shape the major strategic moves of the firm (e.g., Eisenhardt, 1989; Fredrickson, 1984; Judge and Miller, 1991).

Other dynamic capabilities focus on reconfiguration of resources within firms. Transfer processes including routines for replication and brokering (e.g., Hansen, 1999; Hargadon and Sutton, 1997; Szulanski, 1996) are used by managers to copy, transfer, and recombine resources, especially knowledge-based ones, within the firm. For example, at the premier product design firm, IDEO, managers routinely create new products by knowledge brokering from a variety of previous design projects in many industries and from many clients (Hargadon and Sutton, 1997). Resource allocation routines are used to distribute scarce resources such as capital and manufacturing assets from central points within the hierarchy (e.g., Burgelman, 1994). At a more strategic level, coevolving involves the routines by which managers reconnect webs of collaborations among various parts of the firm to generate new and synergistic resource combinations among businesses (e.g., Eisenhardt and Galunic, 2000). Disney, for example, has historically excelled at coevolving to create shifting synergies that drive superior performance (Wetlaufer, 2000). Patching is a strategic process that centers on routines to realign the match-up of businesses (i.e., add, combine, and split) and their related resources to changing market opportunities (Eisenhardt and Brown, 1999). Dell's constant segmentation of operating businesses to match shifting customer demands is an example of a superior patching process (Magretta, 1998).

Still other dynamic capabilities are related to the gain and release of resources. These include knowledge creation routines whereby managers and others build new thinking within the firm, a particularly crucial dynamic capability in industries like pharmaceuticals, optical disks, and oil where cutting-edge knowledge is essential for effective strategy and performance (e.g., Helfat, 1997; Henderson and Cockburn, 1994; Rosenkopf and Nerkar, 1999). They also include alliance and acquisition routines that bring new resources into the firm from external sources (e.g., Capron, Dussauge, and Mitchell, 1998; Gulati, 1999; Lane and Lubatkin, 1998; Powell, Koput, and Smith-Doerr, 1996; Ranft and Zeithaml, 1998; Zollo and Singh, 1998). Cisco Systems has, for example, a very effective acquisition process by which managers have assembled a changing array of products and engineering know-how that drive superior performance. Similarly, biotech firms with strong alliancing processes for accessing outside knowledge achieve superior performance (Powell *et al.*, 1996). Finally, although often neglected, exit routines that jettison resource combinations that no longer provide competitive advantage are also critical dynamic capabilities as markets undergo change (Sull, 1999a, 1999b).

The identification of particular processes as dynamic capabilities has several implications. For one, it opens up RBV thinking to a large, substantive body of empirical research that has often been neglected within the paradigm. This research on capabilities such as product development and alliance formation sheds light not only on these specific processes, but also on the generalized

nature of dynamic capabilities. So, contrary to the criticism that dynamic capabilities lack empirical grounding (Williamson, 1999), dynamic capabilities as specific processes often have extensive empirical research bases and management applicability.

More significant, the identification of specific routines in terms of their relationship to altering the resource base addresses the tautology which arises when the value of dynamic capabilities is defined in terms of their effects on performance (e.g., Priem and Butler, 2000; Williamson, 1999). That is, when the VRIN resources that drive competitive advantage are identified by observing superior performance and then attributing that performance to whatever unique resources the firm appears to possess, the theory becomes tautological. In contrast, by defining dynamic capabilities in terms of their functional relationship to resource manipulation, their value is defined independent of firm performance. This enables empirical falsification.

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Reading 6: Extract from 'The development of the resource-based view of the firm: a critical appraisal'

Andy Lockett, Steve Thompson and Uta Morgenstern

Lockett, A., Thompson, S. and Morgenstern, U. (2009) 'The development of the resource-based view of the firm: A critical appraisal', *International Journal of Management Reviews*, vol. 11, issue 1, pp. 9–28.

The resource-based view: methodological and practical difficulties

The RBV has developed as a series of related propositions that seek to explain the relationship between a firm's resource endowment and its performance and growth. However, it has not generated clear unambiguous hypotheses in the manner of more narrowly conceived theories of firm behaviour or even, transaction cost economics (TCE), an approach with which the RBV is frequently compared (e.g. by Newbert 2007). For example, TCE contends that transaction costs rise with certain (relatively) well-defined market attributes, especially asset specificity, and that vertical integration dominates outsourcing where transaction costs are sufficiently high. Together, these hypotheses have suggested a simple reduced form equation test: namely, that vertical integration will increase with asset specificity. Variants of such an equation have been estimated by many researchers. By contrast, the RBV has a number of methodological and practical difficulties that limit the generation and testing of direct hypotheses.

First, and perhaps most fundamental, is the issue of tautology. Perhaps unsurprisingly, for an approach that ultimately ascribes differences in firm performance to intrinsic differences in the firms themselves, the RBV is certainly prone to circular reasoning. Priem and Butler (2001a,b) in an exchange with Barney (2001), debate this point at length. Priem and Butler (2001a,b) reduce the RBV to the following statement: 'only valuable and rare resources can be a source of competitive advantage', where rarity and value in turn depend upon the use to which such resources may be put. More generally, they argue that the problem of tautology lies in the relationship between the general and the specific in the RBV. Competitive advantage is considered to be rooted in firm-specific circumstances that are themselves, at least in part, imperfectly observable.

Second, if one assumes (as does Barney 200l) that the RBV may be specified in a testable form, any empirical assessment of its predictions requires the identification and measurement of relevant resources. Unfortunately, this has often proved problematic, because the resources of central concern are often those associated with organizational learning etc. and are commonly unobservable (see Ambrosini and Bowman 2001; Godfrey and Hill 1995; Rouse and Daellenbach 1999). Resources which *can* easily be

identified and measured are unlikely to be of great interest to RBV researchers. Such resources, however, are commonly the focus of empirical studies largely because they can be measured, not because they are necessarily important. Consequently, a significant body of empirical research on the RBV has parallels with the proverbial drunk looking under the street light for his keys. When asked where he had lost his keys he responded, 'somewhere over there in the dark, but can't see a thing over there so I'm looking under the light instead.' A further consequence of the resource identification problem is that researchers have used an extremely varied set of proxies for key capabilities and resources, making systematic comparisons across the empirical literature more difficult.

Third, firm heterogeneity creates problems for researchers who are interested in generating a homogeneous sample of firms for testing specific RBV hypotheses. Recall that the central thrust of the RBV is that any firm's competitive advantage is rooted in its unique attribute set. If each firm is unique, any sample of firms is heterogeneous by definition. This clearly makes it difficult to derive meaningful inferences about the causes of competitive advantage across the sample. To reduce sample heterogeneity, some researchers have focused on single-industry studies, often-using exogenous changes in the industry environment, e.g. deregulation (see Ingham and Thompson 1995), as 'natural experiments'.

Fourth, identifying and explaining causal relationships in large firms is problematic. The sheer complexity of large organizations makes it very difficult to isolate the performance effects of specific resources. Birger Wernerfelt recently argued that, if you take a firm like Wal-Mart, there are probably 10,000 little ideas there that each might be worth $100,000 or less in annual profits. Therefore, the complexity of the organization means that a whole range of small initiatives may influence the performance of the firm, but each in a very small way (Lockett *et al.* 2008). Moreover, Barney's (1991) argument that causal ambiguity sustains competitive advantage by restricting rivals' ability to isolate and hence replicate rent-generating resources, itself suggests limited potential for empirical work. If rivals, i.e. competitors within the same strategic group, cannot fathom a firm's key resources it appears unlikely that models using externally measurable variables will achieve strong explanatory power, particularly since these are often estimated across broad industries to allow viable sample sizes.

Fifth, not merely is agreement on a working definition of 'competitive advantage' itself controversial (Foss and Knudsen 2003; Powell 2001), but such a concept is directly unobservable so that empirical tests normally involve seeking to explain inter-firm differences in performance (see Peteraf and Barney 2003) with respect to observable differences in the firms' identifiable resource endowments. Equating performance and competitive advantage in this way strictly tests the joint hypothesis that resources and not other factors (see Ray *et al.* 2003) generate a competitive advantage, and that the firm is effectively managed to harvest this competitive advantage.

Sixth, the logic of the RBV does not predict a universal relationship between firm performance and any particular resource. On the contrary, the value of a resource to the firm will depend upon the specifics of its use, including the deployment of co-specialized assets. Therefore, even at the industry level,

there may be no discernible relationship between firm performance and the possession of resource X. For example, within the airline industry, full service carriers and low-costs operate very different business models which presumably require differing resource bundles such that a performance-resource model indiscriminately estimated across airlines is unlikely to yield strong results.

Finally, best practice firm-level empirical work now generally uses first-differenced panel data sets, usually unbalanced to minimize selection/survivor biases. However, in empirical work on the RBV, it is the fixed effects, discarded in differencing, that contain most of the interest. It follows that much empirical work in the field still tends to use the (otherwise discredited) single equation, cross-sectional design. This raises inevitable problems of causality. For example, if a study of pharmaceutical companies reports a positive correlation between performance and R&D spend, the researcher cannot, without further tests, rule out the possibility that R&D depends upon performance rather than the reverse. Furthermore, multicollinearity of explanatory variables, often size related, is common in cross-sectional firm-level work. This reduces the efficiency of estimates, leading to what Swann (2006) terms the noise–signal ratio. Many cross-sectional studies do not address these difficulties.

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Reading 7: Extract from 'Toward a theory of stakeholder identification and salience'

Ronald K. Mitchell, Bradley R. Agle and Donna I. Wood

Mitchell, R. K., Agle, B. R. and Wood, D. I. (1997) 'Toward a theory of stakeholder identification and salience: defining the principle of who and what really counts', *Academy of Management Review*, Vol. 22, No. 4, 853–886.

What added value does a theory of stakeholder identification offer?

As we see from the preceding discussion of the stakeholder literature, one can extract just a few attributes to identify different classes of stakeholders that are salient to managers in certain respects. We also can see that stakeholder power and legitimacy of the claim frequently are treated as competing explanations of stakeholder status, when instead they are partially intersecting variables. Interestingly, this conceptual competition between power and legitimacy is reflected in virtually every major theory of the firm – particularly in agency, behavioral, institutional, population, ecology, resource dependence, and transaction cost theories. This state-of-the-field provides an opportunity for a theory of stakeholder identification to move us forward by showing how power and legitimacy interact and, when combined with urgency, create different types of stakeholders with different expected behavioral patterns regarding the firm.

Agency, resource dependence, and transaction cost theories are particularly helpful in explaining why power plays such an important role in the attention managers give to stakeholders. The central problem agency theory addresses is how principals can control the behavior of their agents to achieve their, rather than the agent's, interests. The power of agents to act in ways divergent from the interests of principals may be limited by use of incentives or monitoring (Jensen & Meckling, 1976), so that managers are expected to attend to those stakeholders having the power to reward and/or punish them. Resource dependence theory suggests that power accrues to those who control resources needed by the organization, creating power differentials among parties (Pfeffer, 1981), and it confirms that the possession of resource power makes a stake holder important to managers. Transaction cost theory proposes that the power accruing to economic actors with small numbers bargaining advantages will affect the nature of firm governance and structure (Williamson, 1975, 1985). That is, stakeholders outside the firm boundary who participate in a very small competitive set can increase transaction costs to levels that justify their absorption into the firm, where the costs of hierarchy are lower than the transaction costs of

market failure – a clear indication of their significance to managers (Jones & Hill, 1988).

These three organizational theories teach us why power is a crucial variable in a theory of stakeholder-manager relations. But, as previously noted, power alone does not help us to fully understand salience in the stakeholder-manager relationship. There remain stakeholders who do not have power, but who nevertheless matter to firms and managers. Other means to identify "Who or What Really Counts" are needed.

Organizational theories with an open-system orientation (Scott, 1987), including institutional and population ecology theories, help us to understand the crucial effects of the environment upon organizations, but they are less helpful when it comes to understanding power in stakeholder-manager relationships. In both theories organizational legitimacy is linked closely with survival (see Meyer & Rowan, 1977, and Carroll & Hannan, 1989, respectively). In the socially constructed world within which managers engage stakeholders, these two theories suggest that "legitimate" stakeholders are the ones who "really count." Under institutional theory, "illegitimacy" results in isomorphic pressures on organizations that operate outside of accepted norms (DiMaggio & Powell, 1983). Under population ecology theory, lack of legitimacy results in organizational mortality (Carroll & Hannan, 1989). According to these two theories, legitimacy figures heavily in helping us to identify stakeholders that merit managerial attention. However, emphasizing legitimacy and ignoring power leave major gaps in a stakeholder identification scheme, because some legitimate stakeholders have no influence.

A final attribute that profoundly influences managerial perception and attention, although not the primary feature of any particular organizational theory, is implicit in each. Agency theory treats this attribute in terms of its contribution to cost, as does transaction cost theory. Behavioral theory (Cyert & March, 1963) treats it as a consequence of unmet "aspirations." Institutional, resource dependence, and population ecology theories treat it in terms of outside pressures on the firm. This attribute is *urgency*, the degree to which stakeholder claims call for immediate attention. Whether dealing with the prevention of losses, the pursuit of goals, or selection pressures, one constant in the stakeholder-manager relationship is the attention-getting capacity of the urgent claim. Urgency, as we discuss below, adds a catalytic component to a theory of stakeholder identification, for urgency demands attention.

In summary, it is clear that no individual organizational theory offers systematic answers to questions about stakeholder identification and salience, although most such theories have much to tell us about the role of power or legitimacy (but not both) in stakeholder-manager relations. Urgency, in contrast, is not a main focus of any organizational theory, but it is critical nonetheless to any theory that purports to identify stakeholders and to explain the degree of attention paid to them by managers. Therefore, we suggest that to better understood "The Principle of Who and What Really Counts," we need to evaluate stakeholder-manager relationships systematically, both actual and potential, in terms of the relative absence or presence of all or some of the attributes: power, legitimacy, and/or urgency.

Defining stakeholder attributes

Power. Most current definitions of power derive, at least in part, from the early Weberian idea that power is "the probability that one actor within a social relationship would be in a position to carry out his own will despite resistance" (Weber, 1947). Pfeffer rephrases Dahl's (1957) definition of power as "a relationship among social actors in which one social actor, A, can get another social actor, B, to do something that B would not otherwise have done" (1981: 3). Like Pfeffer and Weber, we concur that "power may be tricky to define, but it is not that difficult to recognize: '[it is] the ability of those who possess power to bring about the outcomes they desire'" (Salancik & Pfeffer, 1974: 3). This leads to the following question: How is power exercised, or, alternatively, what are the bases of power?

French and Raven's (I960) typology of power bases is one framework commonly cited in the organizational literature in answer to this question, but from a sociological perspective it is messy, for there is not a sorting logic at work to create the mutually exclusive and exhaustive categories a true typology requires. Etzioni (1964) suggests a logic for the more precise categorization of power in the organizational setting, based on the type of resource used to exercise power: *coercive* power, based on the physical resources of force, violence, or restraint; *utilitarian* power, based on material or financial resources; and *normative* power, based on symbolic resources.[1]

Therefore, a party to a relationship has power, to the extent it has or can gain access to coercive, utilitarian, or normative means, to impose its will in the relationship. We note, however, that this access to means is a variable, not a steady state, which is one reason why power is transitory: it can be acquired as well as lost.

Legitimacy. It is apparent from our analysis in Table 1 that narrow-definition scholars, particularly those seeking a "normative core" for stakeholder theory, are focused almost exclusively on defining the basis of stakeholder legitimacy. Whether or not that core of legitimacy is to be found in something "at risk," or in property rights, in moral claims, or in some other construct, articulations of "The Principle of Who or What Really Counts" generally are legitimacy based.

Table 1: A sorting of rationales for stakeholder identification

A Relationship Exists
The firm and stakeholder are in relationship:
Thompson et al., 1991: 209 – in "relationship with an organization" Brenner, 1993: 205 – "having some legitimate, non-trivial relationship with an organization [such as] exchange transactions, action impacts, and moral responsibilities"
Freeman, 1994: 415 – participants in "the human process of joint value creation"
Wicks et al., 1994: 483 – "interact with and given meaning and definition to the corporation"
The stakeholder exercises voice with respect to the firm:
Starik, 1994: 90 – "can and are making their actual stakes known" – "are or might be influenced by, or are or potentially are influences of, some organization"
Power Dependence: Stakeholder Dominant
The firm is dependent on the stakeholder:
Stanford memo, 1963 – "those groups without whose support the organization would cease to exist" (cited in Freeman & Reed, 1983, and Freeman, 1984)
Freeman & Reed 1983: 91 – Narrow: "on which the organization is dependent for its continued survival"
Bowie, 1988: 112, n. 2 – "without whose support the organization would cease to exist"
Nast, 1995: 19 – "interact with the firm and thus make its operation possible"
The stakeholder has power over the firm:
Freeman, 1984: 46 – "can affect or is affected by the achievement of the organization's objectives"
Freeman & Gilbert, 1987: 397 – "can affect or is affected by a business"
Savage et al., 1991: 61 – "have an interest in the actions of an organization and … the ability to influence it"
Carroll; 1993: 60 – "asserts to have one or more of the kinds of stakes in business" – may be affected or affect . . .
Starik, 1994: 90 – "can and are making their actual stakes known" – "are or might be influenced by, or are or potentially are influencers of, some organization"
Brenner, 1995: 76. n. 1 – "are or which could impact or be impacted by the firm/organization"
Power Dependence: Firm Dominant
The stakeholder is dependent on the firm:
Langtry, 1994: 433 – the firm is significantly responsible for their well-being, or they hold a moral or legal claim on the firm
The firm has power over the stakeholder:
Freeman & Reed, 1983: 91 – Wide: "can affect the achievement of an organization's objectives or who is affected by the achievement of an organization's objectives"
Freeman, 1984: 46 – "can affect or is affected by the achievement of the organization's objectives"
Freeman & Gilbert, 1987: 397 – "can affect or is affected by a business"
Carroll, 1993: 60 – "asserts to have one or more of the kinds of stakes in business" – may be affected or affect . . .
Starik, 1994: 90 – "can and are making their actual stakes known" – "are or might be influenced by or are or potentially are influencers of, some organization"
Brenner, 1995: 76. n. 1 – "are or which could impact or be impacted by the firm/organization"
Mutual Power-Dependence Relationship
The firm and stakeholder are mutually dependent:
Rhenman, 1964 – "are depending on the firm in order to achieve their personal goals and on whom the firm is depending for its existence" (cited in Näsi, 1995)
Ahlsledt & Jahnukainen, 1971 – "driven by their own interests and goals are participants in a firm, and thus depending on it and whom for its sake the firm is depending" (cited in Näsi, 1995)
Basis for Legitimacy of Relationship
The firm and stakeholder are in contractual relationship:
Cornell & Shapiro, 1987: 5 – "claimants" who have "contracts"
Carroll, 1989: 57 – "asserts to have one or more of these kinds of stakes" – "ranging from an interest to a right (legal or moral) to ownership or legal title to the company's assets or property"

Freeman & Evan, 1990 – contract holders

Hill & Jones, 1992: 133 – "constituents who have a legitimate claim on the firm . . . established through the existence of an exchange relationship" who supply "the firm with critical resources (contributions) and in exchange each expects its interests to be satisfied (by inducements)"

The stakeholder has a claim on the firm:

Evan & Freeman, 1988: 75–76 – "have a stake in or claim on the firm"

Alkhafaji, 1989: 36 – "groups to whom the corporation is responsible"

Carroll, 1989: 57 – "asserts to have or more of these kinds of stakes" – "ranging from an interest to a right (legal or moral) to ownership or legal title to the company's assets or property"

Hill & Jones, 1992: 133 – "constituents who have a legitimate claim on the firm . . . established through the existence of an exchange relationship" who supply "the firm with critical resources (contributions) and in exchange each expects its interests to be satisfied (by inducements)"

Langtry, 1994: 433 – the firm is significantly responsible for their well-being, or they hold a moral or legal claim on the firm

Clarkson 1995: 106 – "have, or claim, ownership, rights, or interests in a corporation and its activities"

The stakeholder has something at risk:

Clarkson, 1994: 5 – "bear some form of risk as a result of having invested some form of capital, human or financial, something of value, in a firm" or "are placed at risk as a result of a firm's activities"

The stakeholder has a moral claim on the firm:

Evan & Freeman, 1988: 79 – "benefit from or are harmed by, and whose rights are violated or respected by, corporate actions"

Carroll, 1989: 57 – "asserts to have one or more of these kinds of stakes" – "ranging from an interest to a right (legal or moral) to ownership or legal title to the company's assets or property"

Langtry, 1994: 433 – the firm is significantly responsible for their well-being, or they hold a moral or legal claim on the firm

Clarkson, 1995: 106 – "have, or claim, ownership, rights, or interests in a corporation and its activities"

Donaldson & Preston, 1995: 85 – "identified through the actual or potential harms and benefits that they experience or anticipate experiencing as a result of the firm's actions or inactions"

Stakeholder Interests – Legitimacy Not Implied

The stakeholder has an interest in the firm:

Carroll, 1989: 57 – "asserts to have one or more of these kinds of stakes" – "ranging from an interest to a right (legal or moral) to ownership or legal title to the company's assets or property"

Savage et al., 1991: 61 – "have an interest in the actions of an organization and … have the ability to influence it"

Carroll, 1993: 60 – "asserts to have one or more of the kinds of stakes in business" – may be affected or affect . . .

Clarkson, 1995: 106 – "have, or claim, ownership, rights, or interests in a corporation and its activities"

However, the notion of "legitimacy," loosely referring to socially accepted and expected structures or behaviors, often is coupled implicitly with that of power when people attempt to evaluate the nature of relationships in society. Davis, for example, distinguishes legitimate from illegitimate use of power by declaring, "In the long run, those who do not use power in a manner which society considers responsible will tend to lose it" (1973: 314). Many scholars seeking to define a firm's stakeholders narrowly also make an implicit assumption that legitimate stakeholders are necessarily powerful, when this is not always the case (e.g., minority stockholders in a closely held company), and that powerful stakeholders are necessarily legitimate (e.g., corporate raiders in the eyes of current managers).

Despite this common linkage, we accept Weber's (1947) proposal that legitimacy and power are distinct attributes that can combine to create *authority* (defined by Weber as the legitimate use of power) but that can exist independently as well. An entity may have legitimate standing in society, or it may have a legitimate claim on the firm, but unless it has either

power to enforce its will in the relationship or a perception that its claim is urgent, it will not achieve salience for the firm's managers. For this reason we argue that a comprehensive theory of stakeholder salience requires that separate attention be paid to legitimacy as an attribute of stakeholder-manager relations.

Recently, Suchman (1995) has worked to strengthen the conceptual moorings of the notion of legitimacy, building upon Weber's functionalism (1947), Parsons' structural-functional theory (I960), "open systems" theory (Scott, 1987), and institutional theory (DiMaggio & Powell, 1983). The definition that Suchman suggests is broad based and recognizes the evaluative, cognitive, and socially constructed nature of legitimacy. He defines legitimacy as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (1995: 574).

Although this definition is imprecise and difficult to operationalize, it is representative of sociologically based definitions of legitimacy and contains several descriptions that are useful in our approach to stakeholder identification. Therefore, we accept and utilize Suchman's definition of legitimacy, recognizing that the social system within which legitimacy is attained is a system with multiple levels of analysis, the most common of which are the individual, organizational, and societal (Wood, 1991). This definition implies that legitimacy is a desirable social good, that it is something larger and more shared than a mere self-perception, and that it may be defined and negotiated differently at various levels of social organization.

Urgency. Viewing power and legitimacy as independent variables in stakeholder-manager relationships takes us some distance toward a theory of stakeholder identification and salience, but it does not capture the dynamics of stakeholder-manager interactions. We propose that adding the stakeholder attribute of urgency helps move the model from static to dynamic. "Urgency" is defined by the Merriam-Webster Dictionary as "calling for immediate attention" or "pressing." We believe that urgency, with synonyms including "compelling," "driving," and "imperative," exists only when two conditions are met: (1) when a relationship or claim is of a time-sensitive nature and (2) when that relationship or claim is important or critical to the stakeholder. Thus, similar to Jones' (1993) description of moral intensity as a multidimensional construct, we argue that urgency is based on the following two attributes: (1) time sensitivity – the degree to which managerial delay in attending to the claim or relationship is unacceptable to the stakeholder, and (2) criticality – the importance of the claim or the relationship to the stakeholder. We define urgency as the degree to which stakeholder claims call for immediate attention.

Although it was virtually ignored until now in any explicit sense in the stakeholder literature, the idea of paying attention to various stakeholder relationships in a timely fashion has been a focus of issues management (Wartick & Mahon, 1994) and crisis management scholars for decades. Eyestone (1978) highlighted the speed with which an issue can become salient to a firm and Cobb and Elder discussed the important role symbols play in creating time urgency: "Symbols such as 'Freedom Now' have an

advantage because they connote a specific time commitment to action. If one is attempting to mobilize a public against some outside threat, one must emphasize the rapidity with which the opponent is gaining strength" (1972: 139).

However, although time sensitivity is necessary, it is not sufficient to identify a stakeholder's claim or "manager relationship" as urgent. In addition, the stakeholder must view its claim on the firm or its relationship with the firm as critical or highly important. Some examples of why a stakeholder would view its relationship with the firm as critical include the following:

- ownership – the stakeholder's possession of firm-specific assets, or those assets tied to a firm that cannot be used in a different way without loss of value (Hill & Jones, 1992; Williamson, 1985), making it very costly for the stakeholder to exit the relationship;
- sentiment – as in the case of easily traded stock that is held by generations of owners within a family, regardless of the stock's performance;
- expectation – the stakeholder's anticipation that the firm will continue providing it with something of great value (e.g., compensation and benefits in the case of employees); or
- exposure – the importance the stakeholder attaches to that which is at risk in the relationship with the firm (Clarkson, 1994).

Our theory does not specify why stakeholders assess their relationships with firms as critical. Furthermore, our theory does not attempt to predict the circumstances under which "time will be of the essence." Rather, when both factors are present, our theory captures the resulting multidimensional attribute as *urgency*, juxtaposes it with the attributes of power and legitimacy, and proposes dynamism in the systematic identification of stakeholders.

Additional features of stakeholder attributes

Table 2 summarizes the constructs, definitions, and origins of the concepts discussed thus far in the article. To support a dynamic theory of stakeholder identification and salience, however, we need to consider several additional implications of power, legitimacy, and urgency. First, each attribute is a variable, not a steady state, and can change for any particular entity or stakeholder-manager relationship. Second, the existence (or degree present) of each attribute is a matter of multiple perceptions and is a constructed reality rather than an "objective" one. Third, an individual or entity may not be "conscious" of possessing the attribute or, if conscious of possession, may not choose to enact any implied behaviors. These features of stakeholder attributes, summarized below, are important to the theory's dynamism; that is, they provide a preliminary framework for understanding how stakeholders can gain or lose salience to a firm's managers.

Table 2: Key constructs in the theory of stakeholder identification and salience

Construct	Definition	Sources
Stakeholder	Any group or individual who can affect or is affected by the achievement of the organization's objectives	Freeman, 1984; Jones, 1995; Kreiner & Bhambri, 1988
Power	A relationship among social actors in which one social actor, A, can get another social actor, B, to do something that B would not have otherwise done	Dahl, 1957; Pfeffer, 1981; Weber, 1947
Bases	Coercive—force/threat Utilitarian—material/incentives Normative—symbolic influences	Etzioni. 1964
Legitimacy	A generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, definitions	Suchman, 1995; Weber, 1947
Bases	Individual Organizational Societal	Wood, 1991
Urgency	The degree to which stakeholder claims call for immediate attention	Original – builds on the definition from the Merriam-Webster Dictionary
Bases	Time sensitivity – the degree to which managerial delay in attending to the claim or relationship is unacceptable to the stakeholder	Eyestone, 1978; Wartick & Mahon, 1994
	Criticality – the importance of the claim or the relationship to the stakeholder	Original – asset specificity from Hill & Jones, 1992; Williamson, 1985
Salience	The degree to which managers give priority to competing stakeholder claims	Original – builds on the definition from the Merriam-Webster Dictionary

[…]

1 Stakeholder attributes are variable, not steady state.

2 Stakeholder attributes are socially constructed not objective, reality.

3 Consciousness and wilful exercise may or may not be present.

Thus, with respect to power, for example, access to the means of influencing another entity's behavior is a variable, with both discrete and continuous features. As we argued earlier, power may be coercive, utilitarian, or normative – qualitatively different types that may exist independently or in combination. Each type of power may range from nonexistent to complete. Power is transitory – it can be acquired as well as lost. Further, possession of power does not necessarily imply its actual or intended use, nor does possession of power imply consciousness of such possession by the possessor or "correct" perception of objective reality by the perceivers. An entity may possess power to impose its will upon a firm, but unless it is aware of its power and willing to exercise it on the firm, it is not a stakeholder with high salience for managers. Rather, latent power exists in stakeholder relationships, and the exercise of stakeholder power is triggered by conditions that are manifest in the other two attributes of the relationship: legitimacy and urgency. That is, power by itself does not guarantee high salience in a stakeholder-manager relationship. Power gains authority through legitimacy, and it gains exercise through urgency.

Legitimacy, like power, is a variable rather than a steady state – a dynamic attribute of the stakeholder-manager relationship. It may be present or absent. If it is present, it is based upon a generalized virtue that is perceived for or attributed to a stakeholder at one or more social levels of analysis. Claimants may or may not correctly perceive the legitimacy of their claims; likewise, managers may have perceptions of stakeholder legitimacy that are at variance with the stakeholder's own perception. Also, like the power attribute, legitimacy's contribution to stakeholder salience depends upon interaction with the other two attributes: power and urgency. Legitimacy gains rights through power and voice through urgency.

Finally, urgency is not a steady-state attribute but can vary across stakeholder-manager relationships or within a single relationship across time. As is true of power and legitimacy, urgency is a socially constructed perceptual phenomenon and may be perceived correctly or falsely by the stakeholder, the managers, or others in the firm's environment. For example, neighbors of a nuclear power plant that is about to melt down have a serious claim on that plant, but they may not be aware of the time pressure and criticality and, thus, may not act on their claim. Urgency by itself is not sufficient to guarantee high salience in the stakeholder-manager relationship. However, when it is combined with at least one of the other attributes, urgency will change the relationship and cause it to increase in salience to the firm's managers. Specifically, in combination with legitimacy, urgency promotes access to decision-making channels, and in combination with power, it encourages one-sided stakeholder action. In combination with both, urgency triggers reciprocal acknowledgment and action between stakeholders and managers.

These three features of stakeholder attributes – variable status, perceptual quality, and variable consciousness – will lay the groundwork for a future analysis of the dynamic nature of stakeholder-manager relations. The common "bicycle-wheel" model of a firm's stakeholder environment does not begin to capture the ebb and flow of changes in stakeholder-manager relations or the fact that these relations are multilateral and often coalitional, not bilateral and independent. We explore the dynamic possibilities of the theory of stakeholder salience briefly in the concluding section, but it seems clear that a great deal more paradigmatic development is now possible because of our ability to recognize theoretically that stakeholder-manager relations are not static but, rather, are in constant flux.

Managers' role in the theory

Cyert & March (1963) contributed to the management literature the notion of organizations as coalitions of individuals and organized "sub coalitions" (1963: 27), with "disparate demands, changing foci of attention, and limited ability to attend to all problems simultaneously" (1963: 43), which, under uncertainty, must seek feedback from the environment (1963: 12). Pfeffer & Salancik (1978) picked up the idea of organizations as coalitions of varying interests and contributed the notion that organizations are "other directed" (1978: 257), being influenced by actors that control critical resources and have the attention of managers (1978: 259–260). In developing their stakeholder-agency model, Hill and Jones (1992) employed the agency

theory view of the firm as a nexus of contracts between stakeholders and managers at a central node, where managers have the responsibility to reconcile divergent interests by making strategic decisions and allocating strategic resources in a manner that is most consistent with the claims of the other stakeholder groups (1992: 134). They write:

> Whatever the magnitude of their stake, each stakeholder is a part of the nexus of implicit and explicit contracts that constitutes the firm. However, as a group, managers are unique in this respect because of their position at the centre of the nexus of contracts. Managers are the only group of stakeholders who enter into a contractual relationship with all other stakeholders. Managers are also the only group of stakeholders with *direct* control over the decision-making apparatus of the firm. (Hill & Jones, 1992: 134; emphasis in original)

The idea that the organization is an environmentally dependent coalition of divergent interests, which depends upon gaining the attention of (making claims upon) managers at the center of the nexus to effect reconciliations among stakeholders, suggests that the perspective of managers might be vital. We propose that, although groups can be identified reliably as stakeholders based on their possession of power, legitimacy, and urgency in relationship to the firm, it is the firm's managers who determine which stakeholders are *salient* and therefore will receive management attention. In short, one can identify a firm's stakeholders based on attributes, but managers may or may not perceive the stakeholder field correctly. The stakeholders winning management's attention will be only those the managers perceive to be highly salient.[2]

Therefore, if managers are central to this theory, what role do their own characteristics play? The propositions we present later suggest that the manager's *perception* of a stakeholder's attributes is critical to the manager's view of stakeholder salience. Therefore, we suggest, although space constraints prohibit systematic development here, that managerial characteristics are a moderator of the relationships presented in this article. For example, managers vary greatly in their environmental scanning practices (Daft, Sormunen, & Parks, 1988) and in their values (Hambrick & Mason, 1984). Differences in managerial values are illustrative of the moderating effects of management characteristics (Frederick, 1995). Greer and Downey (1982) have found that managers' values relative to social regulation have a strong effect on how they react to stakeholders covered by these statutes. Another value theorists suggest as important in this relationship is management's sense of self-interest or self-sacrifice. Although some theorists have suggested that all behavior ultimately is self-interested (Dawkins, 1976; Wilson, 1974), several social scientists have questioned the common assumption of self-interest and have suggested that people often act in ways that benefit others, even to their own detriment (see Etzioni, 1988; Granovetter, 1985; Perrow, 1986). Like Perrow (1986) and Brenner and Cochran (1991), we treat managerial characteristics as a variable and suggest that it will be an important moderator of the stakeholder-manager relationship.

Stakeholder classes

Up to this point in the article, we have argued that a definition of "The Principle of Who or What Really Counts" rests upon the assumptions, first, that managers who want to achieve certain ends pay particular kinds of attention to various classes of stakeholders; second, that managers' perceptions dictate stakeholder salience; and third, that the various classes of stakeholders might be identified based upon the possession, or the attributed possession, of one, two, or all three of the attributes: power, legitimacy, and urgency. We now proceed to our analysis of the stakeholder classes that result from the various combinations of these attributes, as shown in Figure 1.

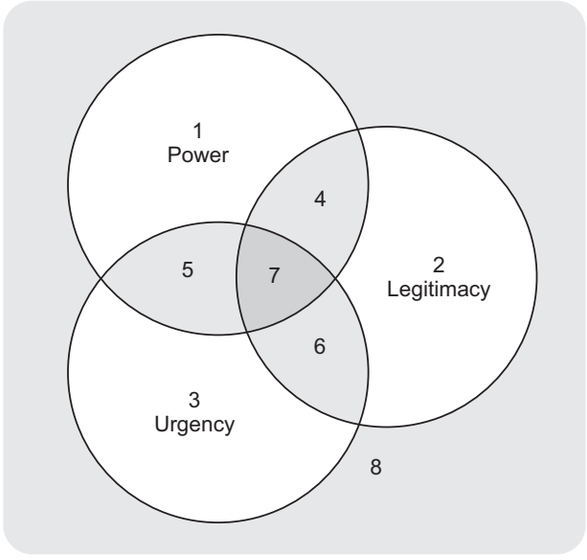

Figure 1: Qualitative classes of stakeholder

We first lay out the stakeholder types that emerge from various combinations of the attributes: power, legitimacy, and urgency. Logically and conceptually, seven types are examined – three possessing only one attribute, three possessing two attributes, and one possessing all three attributes. We propose that stakeholders' possession of these attributes, upon further methodological and empirical work, can be measured reliably. This analysis allows and justifies identification of entities that should be considered stakeholders of the firm, and it also constitutes the set from which managers select those entities they perceive as salient. According to this model, then, entities with no power, legitimacy, or urgency in relation to the firm are not stakeholders and will be perceived as having no salience by the firm's managers.

In conjunction with the analysis of stakeholder types, and based on the assumption that managers' perceptions of stakeholders form the crucial variable in determining organizational resource allocation in response to stakeholder claims, we also present several propositions leading to a theory of stakeholder salience.

Therefore:

> *Proposition 1: Stakeholder salience will be positively related to the cumulative number of stakeholder attributes – power, legitimacy, and urgency – perceived by managers to be present.*

The low salience classes (areas 1, 2, and 3), which we term "latent" stakeholders, are identified by their possession or attributed possession of only one of the attributes. The moderately salient stakeholders (areas 4, 5, and 6) are identified by their possession or attributed possession of two of the attributes, and because they are stakeholders who "expect something," we call them "expectant" stakeholders. The combination of all three attributes (including the dynamic relations among them) is the defining feature of highly salient stakeholders (area 7).

In this section we present our analysis of the stakeholder classes that the theory identifies, paying special attention to the managerial implications of the existence of each stakeholder class. We have given each class a descriptive name to facilitate discussion, recognizing that the names are less important than the theoretical types they represent. We invite the indulgence of the reader as we alliterate these descriptive names as a mnemonic device to promote recall and as a further means to suggest a starting point for future dialogue.

As Figure 2 illustrates, latent stakeholders are those possessing only one of the three attributes, and include dormant, discretionary, and demanding stakeholders. Expectant stakeholders are those possessing two attributes, and include dominant, dependent, and dangerous stakeholders. Definitive stakeholders are those possessing all three attributes. Finally, individuals or entities possessing none of the attributes are non-stakeholders or potential stakeholders.

Latent stakeholders

With limited time, energy, and other resources to track stakeholder behavior and to manage relationships, managers may well do nothing about stakeholders they believe possess only one of the identifying attributes, and managers may not even go so far as to recognize those stakeholders' existence. Similarly, latent stakeholders are not likely to give any attention or acknowledgment to the firm. Hence:

> *Proposition la: Stakeholder salience will be low where only one of the stakeholder attributes – power, legitimacy, and urgency – is perceived by managers to be present.*

In the next few paragraphs we discuss the reasoning behind this expectation as it applies to each class of latent stakeholder, and we also discuss the implications for managers.

Dormant stakeholders. The relevant attribute of a dormant stakeholder is power. Dormant stakeholders possess power to impose their will on a firm, but by not having a legitimate relationship or an urgent claim, their power remains unused. Examples of dormant stakeholders are plentiful. For

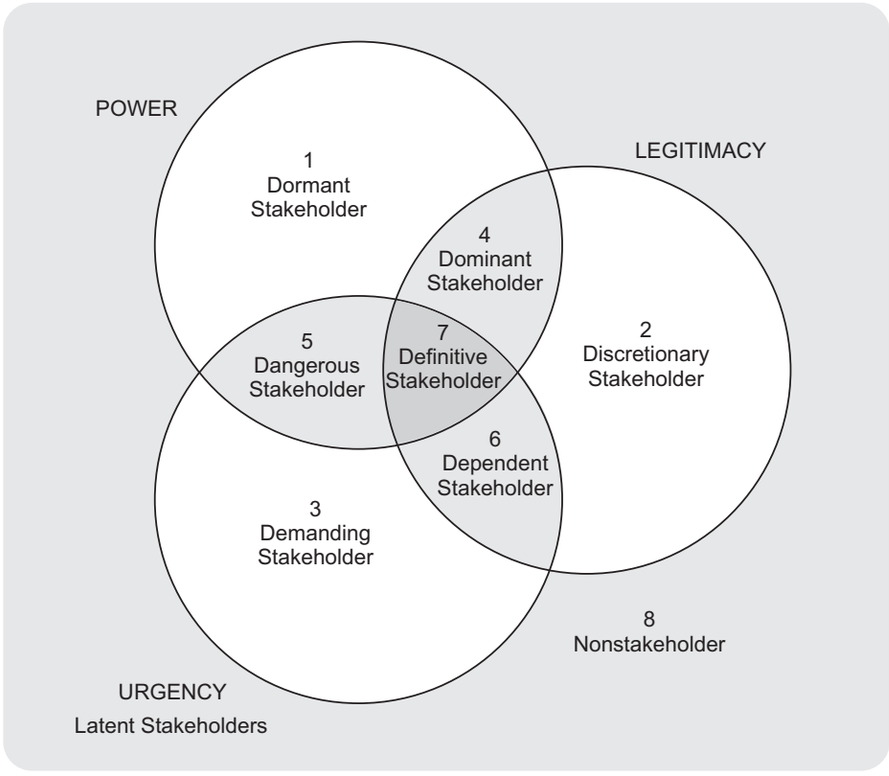

Figure 2: Stakeholder typology: one, two or three attributes present

instance, power is held by those who have a loaded gun (coercive), those who can spend a lot of money (utilitarian), or those who can command the attention of the news media (symbolic). Dormant stakeholders have little or no interaction with the firm. However, because of their potential to acquire a second attribute, management should remain cognizant of such stakeholders, for the dynamic nature of the stakeholder-manager relationship suggests that dormant stakeholders will become more salient to managers if they acquire either urgency or legitimacy.

Although difficult, it is oftentimes possible to predict which dormant stakeholders may become salient. For example, while employees who have been fired or laid off from an organization could be considered by the firm to be dormant stakeholders, experience suggests that these stakeholders can seek to exercise their latent power. The multiple shootings at postal facilities by ex-U.S. mail employees (coercive), the filing of wrongful dismissal suits in the court system (utilitarian), and the increase in "speaking out" on talk radio (symbolic) all are evidence of such combinations.

Discretionary stakeholders. Discretionary stakeholders possess the attribute of legitimacy, but they have no power to influence the firm and no urgent claims. Discretionary stakeholders are a particularly interesting group for scholars of corporate social responsibility and performance (see Wood, 1991), for they are most likely to be recipients of what. Carroll (1979) calls discretionary corporate social, responsibility, which he later redefined as corporate philanthropy (Carroll, 1991). The key point regarding discretionary stakeholders is that, absent power and urgent claims, there is absolutely no pressure on managers to engage in an active relationship with such a stakeholder, although managers can choose to do so.

Not all recipients of corporate philanthropy are discretionary stakeholders – only those with neither power over nor urgent claims on the firm. Examples of discretionary stakeholders include beneficiaries of the Take-A-Taxi program in the Twin Cities, in which the Fingerhut company picks up the tab for anyone who feels they have consumed too much alcohol to drive, and nonprofit organizations, such as schools, soup kitchens, and hospitals, who receive donations and volunteer labor from such companies as Rhino Records, Timberland, Honeywell, JustDesserts, and Levi-Strauss.

Demanding stakeholders. Where the sole relevant attribute of the stakeholder-manager relationship is urgency, the stakeholder is described as "demanding." Demanding stakeholders, those with urgent claims but having neither power nor legitimacy, are the "mosquitoes buzzing in the ears" of managers: irksome but not dangerous, bothersome but not warranting more than passing management attention, if any at all. Where stakeholders are unable or unwilling to acquire either the power or the legitimacy necessary to move their claim into a more salient status, the "noise" of urgency is insufficient to project a stakeholder claim beyond latency. For example, a lone millenarian picketer who marches outside the headquarters with a sign that says, "The end of the world is coming! Acme chemical is the cause!" might be extremely irritating to Acme's managers, but the claims of the picketer remain largely unconsidered.

Expectant stakeholders

As we consider the potential relationship between managers and the group of stakeholders with two of the three identifying stakeholder attributes, we observe a qualitatively different zone of salience. In analyzing the situations in which any two of the three attributes – power, legitimacy, and urgency – are present, we cannot help but notice the change in momentum that characterizes this condition. Whereas one-attribute low-salience stakeholders are anticipated to have a latent relationship with managers, two-attribute moderate-salience stakeholders are seen as "expecting something," because the combination of two attributes leads the stakeholder to an active versus a passive stance, with a corresponding increase in firm responsiveness to the stakeholder's interests. Thus, the level of engagement between managers and these expectant stakeholders is likely to be higher. Accordingly:

> *Proposition lb: Stakeholder salience will be moderate where two of the stakeholder attributes – power, legitimacy, and urgency – are perceived by managers to be present.*

We describe the three expectant stakeholder classes (dominant, dependent, and dangerous) in the following paragraphs.

Dominant stakeholders. In the situation where stakebolders are both powerful and legitimate, their influence in the firm is assured, since by possessing power with legitimacy, they form the "'dominant coalition" in the enterprise (Cyert & March, 1963). We characterize these stakeholders as "dominant," in deference to the legitimate claims they have upon the firm and their ability to act on these claims (rather than as a forecast of their intentions with respect to the firm – they may or may not ever choose to act

on these claims). It seems clear to us, at least, that the expectations of any stakeholders perceived by managers to have power and legitimacy will "matter" to managers.

Thus, we might expect that dominant stakeholders will have some formal mechanism in place that acknowledges the importance of their relationship with the firm. For example, corporate boards of directors generally include representatives of owners, significant creditors, and community leaders, and there is normally an investor relations office to handle ongoing relationships with investors. Most corporations have a human resources department that acknowledges the importance of the firm-employee relationship. Public affairs offices are common in firms that depend on maintaining good relationships with government. In addition, corporations produce reports lo legitimate, powerful stakeholders, including annual reports, proxy statements, and, increasingly, environmental and social responsibility reports. Dominant stakeholders, in fact, are those stakeholders that so many scholars are trying to establish as the *only* stakeholders of the firm. In our typology dominant stakeholders expect and receive much of managers' attention, but they are by no means the full set of stakeholders to whom managers should or do relate.

Dependent stakeholders. We characterize stakeholders who lack power but who have urgent legitimate claims as "dependent," because these stakeholders depend upon others (other stakeholders or the firm's managers) for the power necessary to carry out their will. Because power in this relationship is not reciprocal, its exercise is governed either through the advocacy or guardianship of other stakeholders, or through the guidance of internal management values.

Using the case of the giant oil spill from the Exxon Valdez in Prince William Sound as an example, we can show that several stakeholder groups had urgent and legitimate claims, but they had little or no power to enforce their will in the relationship. To satisfy their claims these stakeholders had to rely on the advocacy of other, powerful stakeholders or on the benevolence and voluntarism of the firm's management. Included in this category were local residents, marine mammals and birds, and even the natural environment itself (Starik, 1993). For the claims of these dependent stakeholders to be satisfied, it was necessary for dominant stakeholders – the Alaska state government and the court system – to provide guardianship of the region's citizens, animals, and ecosystems. Here a dependent stakeholder moved into the most salient stakeholder class by having its urgent claims adopted by dominant stakeholders, illustrating the dynamism that can be modeled effectively using the theory and principles of stakeholder identification and salience suggested here.

Dangerous stakeholders. We suggest that where urgency and power characterize a stakeholder who lacks legitimacy, that stakeholder will be coercive and possibly violent, making the stakeholder "dangerous," literally, to the firm. "Coercion" is suggested as a descriptor because the use of coercive power often accompanies illegitimate status.

Examples of unlawful, yet common, attempts at using coercive means to advance stakeholder claims (which may or may not be legitimate) include wildcat strikes, employee sabotage, and terrorism. For example, in the 1970s General Motors' employees in Lordstown, Ohio, welded pop cans to engine

blocks to protest certain company policies. Other examples of stakeholders using coercive tactics include environmentalists spiking trees in areas to be logged and religious or political terrorists using bombings, shootings, or kidnappings to call attention to their claims. The actions of these stakeholders not only are outside the bounds of legitimacy but are dangerous, both to the stakeholder-manager relationship and to the individuals and entities involved.

It is important for us to note that we, along with other responsible individuals, are very uncomfortable with the notion that those whose actions are dangerous, both to stakeholder-manager relationships as well as to life and well-being, might be accorded some measure of legitimacy by virtue of the typology proposed in this analysis. Notwithstanding our discomfort, however, we are even more concerned that failure to identify dangerous stakeholders would result in missed opportunities for mitigating the dangers and in lower levels of preparedness, where no accommodation is possible. Further, to maintain the integrity of our approach to better define stakeholders, we feel bound to "identify" dangerous stakeholders without "acknowledging" them, for, like most of our colleagues, we abhor their practices. We are fully aware that society's "refusal, to acknowledge" after identification of a dangerous stakeholder, by counteracting terror in all its forms, is an effective counteragent in the battle to maintain civility and civilization. The identification of this class of stakeholder is undertaken with the support of this tactic in mind.

Definitive stakeholders

Previously, we defined "salience" as the degree to which managers give priority to competing stakeholder claims. Thus:

> *Proposition Ic: Stakeholder salience will be high where all three of the stakeholder attributes – power, legitimacy, and urgency – are perceived by managers to be present.*

By definition, a stakeholder exhibiting both power and legitimacy already will be a member of a firm's dominant coalition. When such a stakeholder's claim is urgent, managers have a clear and immediate mandate to attend to and give priority to that stakeholder's claim. The most common occurrence is likely to be the movement of a dominant stakeholder into the "definitive" category.

For example, in 1993 stockholders (dominant stakeholders) of IBM, General Motors, Kodak, Westinghouse, and American Express became active when they felt that their legitimate interests were not being served by the managers of these companies. A sense of urgency was engendered when these powerful, legitimate stakeholders saw their stock values plummet. Because top managers did not respond sufficiently or appropriately to these definitive stakeholders, they were removed, thus demonstrating in a general way the importance of an accurate perception of power, legitimacy, and urgency; the necessity of acknowledgment and action that salience implies; and, more specifically, the consequences of the misperception of or inattention to the claims of definitive stakeholders.

Any expectant stakeholder can become a definitive stakeholder by acquiring the missing attribute. As we saw earlier, dependent Alaskan citizens became definitive stakeholders of Exxon by acquiring a powerful ally in government. Likewise, the "dangerous" African National Congress became a definitive stakeholder of South African companies when it acquired legitimacy by winning free national elections.

Notes

1 Etzioni explains these types of power as follows:

> The use of a gun, a whip, or a lock is physical since it affects the body; the threat to use physical sanctions is viewed as physical because the effect on the subject is similar in kind, though not in intensity, to the actual use. Control based on application of physical means is ascribed as *coercive power*.
>
> Material rewards consist of goods and services. The granting of symbols (e.g. money) which allow one to acquire goods and services is classified as material because the effect on the recipient is similar to that of material means. The use of material means for control purposes constitutes *utilitarian power*.
>
> Pure symbols are those whose use does not constitute a physical threat or a claim on material rewards. These include normative symbols, those of prestige and esteem; and social symbols, those of love and acceptance. When physical contact is used to symbolize love, or material objects to symbolize prestige, such contacts or objects are viewed as symbols because their effect on the recipient is similar to that of "pure" symbols. The use of symbols for control purposes is referred to as *normative*, *normative-social*, or *social power*.
>
> (1964: 59)

2 We note, however, that Freeman and Evan view the firm "as a series of multilateral contracts among stakeholders" (1990: 342), with no central role for managers. This implies a network theory solution to the problem of systematic description, in comparison with the cognitive approach that we take. We make no representations abut a fully networked, nonnexus approach. We merely suggest the sociology-organization theory approach as a logically developed "sorting system" for improving the descriptive capability of the stakeholder approach.

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Reading 8: Extract from 'Commentary on "Corporate strategies and environmental regulations: an organizing framework"'

John McGee

McGee, J. (1998) 'Commentary on 'Corporate Strategies and Environmental Regulations: An Organizing Framework' by A. M. Rugman and A. Verbeke', *Strategic Management Journal*, Vol. 19, 377–387.

Defining corporate social responsibility

The first problem with social responsibility is the ambiguity of the concept. For example the classical definition of Davis and Blomstrom (1975: 6), states: 'Social responsibility is the managerial obligation to take action to protect and improve both the welfare of society as a whole and the interest of organizations.' The main concepts of *obligation*, *welfare*, and *self-interest of obligations* in this definition are very broad and are open to a range of interpretations. For example, the concept of *welfare of society* could cover social or economic welfare or both. As it stands it is not clear what one should be considering. However, in this review, a selection of definitions is highlighted, ranging from the purely economic to more proactive approaches with a 'social' dimension.

Starting with a purely economic focus on *profit making* only, Friedman (1970) sees the social responsibility of companies as making as much money for their shareholders as possible. In short, the proponents of economic responsibility contend that improving profitability is the only social responsibility of business (Wartick and Cochran, 1985). Backman (1975) takes a primarily economic view, but one which is tempered with a 'view of the firm's social responsibility.' He incorporates actions taken for reasons at least partially beyond the firm's direct economic or technical interest.

Moving away from the economic end of the continuum, McGuire (1963) and other authors, such as Davis (1973), Stone (1975), Carroll (1979), and Frederick (1987), include not only economic and legal obligations, but also certain responsibilities to society which extend beyond these. Thus, 'The firm's consideration of, and response to, issues beyond the narrow economic, technical, and legal requirements of the firm … to accomplish social benefits along with the traditional economic gains which the firm seeks' (Davis, 1973: 313).

Manne and Wallich (1972) take the definition further by suggesting that the behavior of the firm must be voluntary. Jones's (1980) definition develops the notion that corporations have an obligation to constituent groups in society other than shareholders and beyond that prescribed by law or union

contract. Two facets of this definition are critical: first, the obligation must be voluntarily adopted; second, the obligation is a broad one, extending beyond the traditional duty to shareholders to other societal groups such as customers, employees, suppliers, and the community.

The notion of *public responsibility* was introduced by Preston and Post (1975) and Buchholz (1977), when they said that the social impact of the business firm should be guided and appraised within the context of external public policy. These advocates of public responsibility focus more on the social contract side of business and less on the question of morality.

Most notable of other research in this vein are Dalton and Cosier's (1982) four faces of social responsibility. This conceptualization of corporate social responsibility addresses a major criticism of social responsibility by integrating the narrow definition of public policy with a broad construct of social policy. Dalton and Cosier's framework is based on four types of corporate activities: (1) illegal and irresponsible acts, (2) illegal but responsible acts, (3) legal but irresponsible acts, and (4) legal and responsible acts. The narrow notion of the social responsibility concept exists in the legal/illegal dimension of the framework. The broader definition exists in the linkage between the legal/illegal dimension and the responsible/irresponsible dimension.

Strand's concept (1983) of social responsibility describes four concerns: (1) the cultural and economic environment, (2) material, social, and psychological experience of constituents, (3) social demands and exceptions placed on organizations, and (4) the environmental texture of organizations. In Strand's model public responsibility is implicit in his category of social demands and expectations placed on organizations. Strand equates these demands and expectations to legal, economic, and social pressures.

However, other writers offer an ethical perspective in defining social responsibility (Hay, Gray, and Gates, 1976; Zenisek, 1979), conceptualizing it as the degree of *fit* between society's expectations of the business community and the ethics of business. Carroll (1979), on the other hand, has brought together four aspects of social responsibility, namely the economic, legal, ethical, and discretionary categories of business performance. Similarly Steiner's (1975) concept of social responsibility is presented as a continuum of responsibilities ranging from 'traditional economic production' to 'government dictated,' to a 'voluntary area,' and lastly to 'expectations beyond reality.'

Proactive types of definitions elaborated by Sethi (1979) as well as Ackerman and Bauer (1976) are still current today. Rather than providing a focus on social responsibility which assumes an obligation and emphasis on motivation rather than performance, their definition brings in a concept of 'social responsiveness' which suggests that what is important is not how a corporation should respond to social pressures, but what their long-term role in a dynamic social system should be. The idea is that the orientation of business in any social dimension must be anticipatory and preventive. This understanding of social responsiveness has been incorporated into the definition of 'corporate social performance' as a critical link between social responsibility and responses to social issues.

Although both the concepts of social responsiveness and corporate social performance are seen as the evolution of the concept of social responsibility, Clarkson argues that the difficulties encountered in defining corporate social responsibility, corporate social responsiveness, and corporate social performance can be attributed in part to the broad and inclusive meaning of the word *social*. He states: 'The connotation of social is society, a level of analysis that is both more inclusive, more ambiguous, and further up the ladder of abstraction than a corporation itself' (1995: 102).

In short, social responsibility has been defined or conceptualized in a number of different ways which, while often ambiguous, can be presented in a simple two-dimensional perspective. At one end of this, corporate social responsibility is defined in purely economic *profit making* terms; at the other end, it is defined as socially orientated in a *proactive social responsiveness view*. The points in between those two poles encompass legal obligations, voluntary perspectives, ethical concerns, public responsibilities, or a combination of some of these aspects.

However, when considering the context of a particular business sector in a specific country, it is common to observe that the most appropriate definition of social responsibility is one which encompasses only legal obligations. The strong argument that corporate social responsibility should extend beyond mere legal obligations has been made by Davis (1973), Stone (1975), Carroll (1979), and Frederick (1987) and was recently clearly stated by Thompson, Wartick, and Smith (1991: 41): 'Although compliance with the law is certainly one attribute of corporate social responsibility, legally supportive behaviour is an expectation placed on all business. Therefore, measuring a company's compliance with the law may not truly capture corporate social responsibility behaviour'.

[…]

Implications of corporate social responsibility for corporate governance and strategic management

[…]

Social responsibility and its implications for strategic management

The focus of strategy has become vastly broader than the traditional product/market approach of Adam Smith's day. It now engages managers in considering a complex array of factors of which the social context in which the company operates is an integral part. And it requires the value-generating function of the company to be thought of as constituting a set of relationships—with employees, customers, suppliers, and community interests as well as shareholders—which can add or subtract value and from which the company derives its ability to go on creating value.

Related to this is the ability of shareholders and other stakeholders to appropriate the value they have created. Kay (1993) argues:

> Who benefits from the firm's success in adding value depends partly on the decisions of the firm, partly on the structure of the markets which it faces, and partly on the sources of the value added itself … it is generally necessary to share at least part of the returns among all the stakeholders in the business and to achieve their agreement, or at least acquiescence, in that distribution.

Kay identifies three ways in which corporate social responsibility is linked to strategy and strategic management:

1 corporate social responsibility is an input to strategy: a source of information and understanding about key elements in the business environment, and a source of strategic choice and actions to go into the strategic plan;
2 corporate social responsibility as a support activity: part of the infrastructure that supports the value chain;
3 corporate social responsibility as a mainstream management task; that is, an activity which as much as any other must be managed well.

Corporate social responsibility as an input has received quite a lot of attention. Carroll and Hoy (1984) emphasize the importance of social policy and value creation so that social responsibility should not appear as a residual factor in the environment. Aram (1989) applied game theory to explore the implications for public policy making. Atkinson, Waterhouse and Wells (1997) redefine strategic planning in terms of *primary objectives*, which are defined by the organizations' owners, and *secondary objectives* which are what the company expects from and gives to each stakeholder group in order to achieve its primary objectives. They distinguish between two groups of stakeholders. The *environmental stakeholders* are customers, owners, and the community. This group defines the companies' external environment that, in turn, defines the critical elements of its competitive strategy. The *process stakeholders* are the employees and suppliers.

Corporate social responsibility as a supportive activity has been analyzed by Preece, Fleisher, and Toccacelli (1995). They use value chain ideas for exploring corporate social responsibility within a supportive context. Litz (1996) uses a resource-based model to incorporate social responsibility issues. Research from Owen and Scherer (1993) shows that managers do believe that socially responsible corporate actions have an effect on market share and therefore an effect on competitive advantage.

There is less research which sets out how social responsibility becomes a mainstream management task, but see Polonsky (1995) on the design of environmental marketing strategy and Murray and Montanari (1986) on its integration into management and marketing theory. Burke and Logsdon (1996) suggest that win–win strategies are available and therefore social responsibility can be seen as long-term investment decisions. The relationship between public affairs management structure and social performance was studied in contrasting industries by Bhambri and Sonnenfeld (1988). In general, stakeholders rated firms with balanced

strength in their public affairs structure as more socially responsive. In terms of receptivity to public affairs information, depth of involvement was more consistently associated with high social performance than was breadth of contracts. Ackerman (1973) observed and explored three generic steps in the management of social responsibility: (1) allocation of responsibility, (2) executive performance evaluation, and (3) management through systems.

In summary, social responsibility programs create challenges for companies in five major areas:

1 they need to be thought through in relation to strategic goals;
2 they need to be incorporated into the strategic management process;
3 they should have a clear business rationale;
4 they should be aligned with the culture of the company and its structures and processes;
5 they need to be managed efficiently and effectively.

A particular challenge for research is to understand what links might exist between corporate social responsibility and competitive advantage. For example, Kay (1993) argues that outstanding companies worldwide are consistently found to have built into their corporate strategies a strong social orientation which they have combined successfully with high returns to shareholders. To sustain and confirm this argument one has to explore the nature of corporate value and how value is created, and how added-value can be measured. Furthermore, it is important to search for the underlying mechanisms which link corporate social responsibility to competitive advantage. Knowing this we can begin to observe how trade-offs occur and can be managed and in what circumstances 'win–win relationships' can be developed. More particularly, we can begin to challenge conventional thinking that sees corporate social responsibility as something that sits outside the core business, an activity that is separated from and unrelated to the company's operations and undertaken as acts of charity or philanthropy. The paper by Rugman and Verbeke explores these ideas in the context of environmental regulations. In this paper the authors explore the nature of private value and social value, the interactions and linkages between them and the implications for the strategic management process. The particular context is environmental regulations and the strategies of multinational firms. We therefore have a clear contrast between win–win and trade-off ideas in a complex institutional setting.

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Reading 9: Six cases of corporate strategic responses to environmental regulation

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Introduction

The 'five forces model' for industry analysis (Porter, 1980) is now a standard tool used both by academics and practitioners when conducting strategic management studies. In the past decade, this competitive positioning approach has been augmented by the resource-based perspective, which has focused on the accumulation of valuable, knowledge-based assets by individual firms. An integrative synthesis of this work has recently been developed by Teece *et al*. (1997); Teece and Pisano (1998). They have proposed a 'dynamic capabilities' approach as the key to strategy development for the modern business firm.

Such an approach focuses on the specific ways in which capabilities are renewed as a response to shifts in the environment relevant to the firm. This new perspective raises two important questions. First, does the standard five forces model adequately include the various actors in the firm's environment to which it must respond, given the complexities of modern business, especially the tendency toward globalisation? Second, given the relevant external forces to be included in a strategic positioning analysis, do changes in specific external forces require specific types of shifts in the development and use of dynamic capabilities?

In the next sections, a simple conceptual framework is developed that suggests an answer to the above two questions. The relevance of the framework is verified through the analysis of six high profile case studies of corporate strategic responses to environmental regulation, namely the cases of Du Pont, Laidlaw, Allied Signal, Honeywell, McDonald's and Xerox. Environmental regulation demonstrates the necessity to extend the five forces model into at least a six forces model, in which government regulation is included. The six cases were selected as interesting and relevant examples of the need for a shift in firm-level strategy in response to changes arising from specific forces driving industry competition. They also all bring an international dimension to the issue of corporate strategy and environmental regulation.

Relevant theories: strategic positioning and dynamic capabilities

Porter's (1980) strategic positioning model builds upon the assumption that five forces determine industry attractiveness, i.e. the potential to earn rents. Three forces represent the 'horizontal' competitive relationships, namely the rivalry among competing firms, the threat of new entrants and the threat of substitutes. Two other forces reflect the firm's 'vertical' linkages with external actors, namely buyer and supplier power. An interesting characteristic of the five forces model is that industry structure, at least when used for strategy prescription at the firm level, is viewed as partly endogenous. This means that there is a reciprocal relationship between industry structure and firm behaviour. Entry barriers do not just result from a given industry structure but may be induced or challenged by firms. In this context, the five forces could be seen as the 'opportunities – threats' component in a conventional SWOT-analysis (strengths, weaknesses, opportunities and threats).

In contrast, the resource-based view focuses on the 'strengths – weaknesses' component of SWOT analysis. It does this by identifying valuable (as perceived by customers), non-substitutable, non-imitatable, firm-level competences as the basis of superior performance, Penrose (1959); Rumelt (1984); Barney (1991); Conner (1991). A resource-based perspective has sometimes also been adopted for purposes of industry-analysis. Industry capabilities are defined as resources that are shared by incumbents but are not available to outsiders. These include trust relations, and specific ways of diffusing and sharing technological knowledge, Foss (1997). An integrative perspective has recently been introduced, Foss and Eriksen (1995), Teece *et al.* (1997); Teece and Pisano (1998). In this, dynamic capabilities (at least implicitly) reflect the firm's ability to respond effectively, on the basis of its internal strengths/weaknesses, to external opportunities/threats. These dynamic capabilities include special company strengths to cope with the shifting character of the environment. More specifically, this approach focuses on the key role of strategic management in appropriately adapting, integrating and re-configuring company strengths towards changing environments, Teece and Pisano (1998, p. 193).

Such a Schumpeter-type perspective focuses explicitly on the renewal of competencies and, implicitly, on the achievement of first mover advantages, because the time dimension is critical.[1] Difficult replication by other firms permits a stream of rents to be sustained for a longer time.

It is important to recognise that specific, firm-level responses to external changes are influenced by path dependencies (e.g. long-term, quasi-irreversible resource commitments). The development of a dynamic capability by a firm therefore needs to build incrementally upon existing internal processes. Here, external forces must be taken into account, but these result themselves from paths along which the firm has travelled in the past. Bearing this in mind, it would appear that Porter's original five forces model can, at best, be only a partial analytical tool to aid in strategy development at the firm level.

In addition, it is sometimes argued that Porter's industry-level analysis may need to be supplemented with a macro-environmental one. A variety of 'intermediate' parameters (in the realm of the social, macro-economic, political and technological environments) can then be analysed, and their implications for the firm determined through their impact on the five forces driving industry competition. However, in some cases, macro-environmental changes can have an immediate impact on the firm, irrespective of their intermediate significance for the five external forces. This holds especially for government regulations. This has already been demonstrated by Rugman and Verbeke (1990, 1998a, b), in areas such as trade and investment decisions and firm-level responses to environmental regulation. This analysis is especially relevant for multinational enterprises (MNEs) because their institutional status is defined by the crossing of geographic borders. From a conceptual perspective, the single most important change at the firm level, when establishing foreign operations is being faced with a second sovereign government.[2]

The basic definition of an MNE, as a firm that performs value added operations in at least two countries, requires an MNE to deal with two or more governments. From an institutional perspective, government regulation has immediate implications for the boundaries of the firm, just as buyer power and supplier power influence the vertical boundaries of the firm and rival companies, potential entrants and substitutes have an effect on its horizontal boundaries. Geographic borders controlled by sovereign governments fundamentally determine the domestic or multinational nature of the firm's value chain. These borders not only affect the actors in the market environment relevant to the firm's horizontal and vertical boundaries. Government regulation also directly constrains the range of feasible strategic options open to the firm and provides incentives (e.g. through taxation rules) favouring specific types of strategy development. In terms of developing a winning capability, it can thus be concluded that at least six forces rather than five directly affect firms. Each of these forces may require a shift in strategy formulation by the firm, as well as the use, or development, of dynamic green capabilities in order to achieve the effective implementation of this shift.

A new model of environmental regulations and firm strategy

Using the above reasoning, we will develop a three part analysis of environmental regulations and corporate strategy. Environmental regulations were chosen because they reflect one of the most rapidly growing fields of government intervention. The framework will then be applied to six MNEs. We discuss the three parts in sequence. First, if government regulation is perceived as having a major impact on the functioning of an industry, then the use of the conventional five forces model would translate this impact into relevant effects on the firm through some or all of the five forces. From a normative perspective, the predicted effects could then lead to a change in firm behaviour if such a change were viewed as beneficial to the firm. The predicted effects would not be viewed as exogenously determined constraints on firm behaviour but as outcomes which, at least in terms of significance to

the firm, could be altered by a shift in firm strategy. In the present paper, however, we suggest that government regulation may have an impact in its own right, irrespective of its possible influence through the five conventional forces driving industry competition. This also implies that a change in regulation may not only call for a change in the firm's strategy vis-à-vis these conventional market forces, but also a change in strategy toward government itself.

The above analysis is described in Figure 1 on government regulations, in this case environmental regulations, and shifts in firm strategy. Here, it is suggested that a change in environmental regulations may, through its impact on the five conventional market forces, lead to a firm-level, indirect shift in strategy. However, it may also lead to a direct shift in strategy, irrespective of its impact on the five market forces.

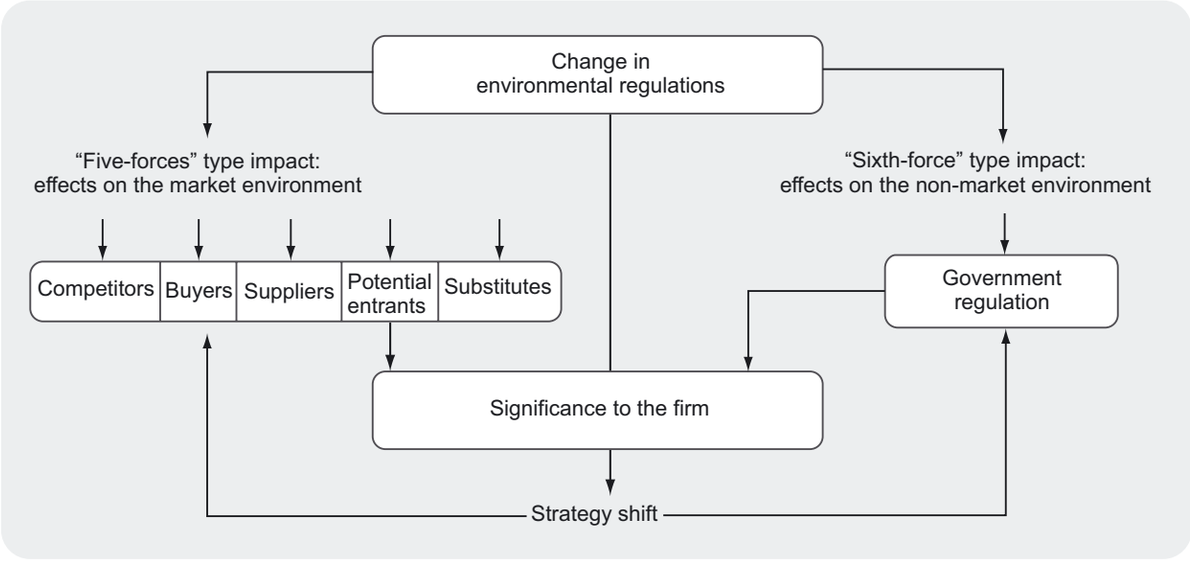

Figure 1: The impact of changes in environmental regulations on corporate strategy

Second, the dynamic capabilities issue is captured in Figure 2, where an effective first mover response is viewed as a proxy for a green capability to deal with changes in government regulations.[3] Here, the effective first mover response, may again be geared toward the five forces (horizontal axis, weak or strong) or more directly, toward government itself (vertical axis, weak or strong).

Third, from the perspective of the MNE, the key question is whether a green capability related to government regulation, if it is present at the firm level, is 'localised' or 'internationally transferable'. A localised dynamic capability reflects the company's absorption capacity in dealing with external change with the potential to obtain competitive advantage only in a limited geographical area, e.g. a single country. In contrast, an internationally transferable dynamic capability can be deployed across borders without losing its potential to generate competitive advantage. This distinction was first developed by Rugman and Verbeke (1992, 1993) within the context of the theory of the multinational enterprise. It reflects a resource-based re-interpretation of the national responsiveness–integration framework developed by Bartlett and Ghoshal (1989). This distinction is crucial from an

Figure 2: Effective first mover response to environmental regulations

international business perspective, because it specifies the geographical boundaries within which dynamic capabilities may lead to competitive advantage. The above analysis is represented in Figure 3. The horizontal axis reflects the firm's ability to create a localised capability (weak or strong) whereas the vertical axis describes the creation of an internationally transferable capability (weak or strong).

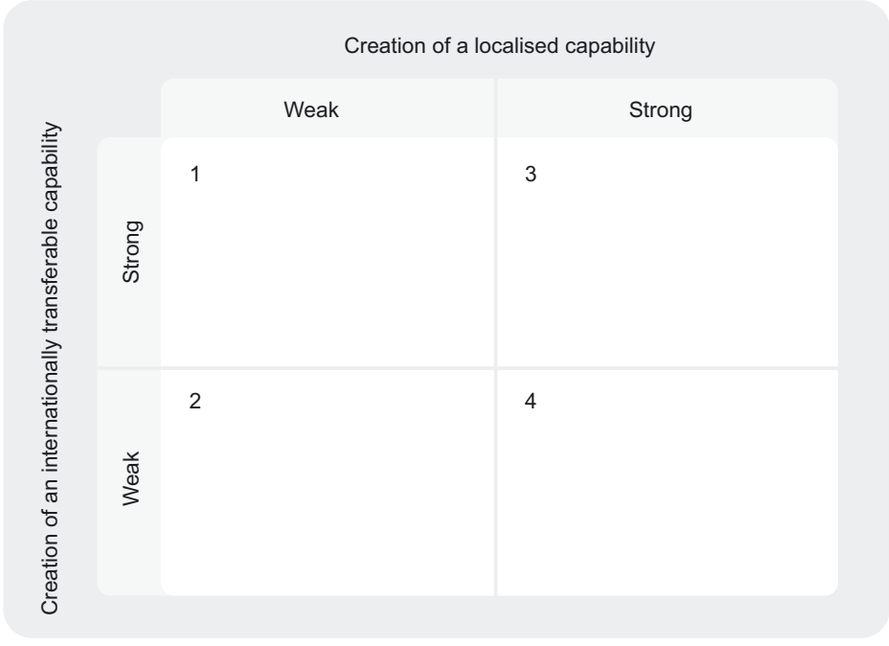

Figure 3: Dynamic green capabilities in MNEs

In the next section, it is argued that the international business literature already largely incorporates government as a sixth force relevant to strategy formulation. In the last section, the conceptual framework described above is

applied to one specific area of government regulation, namely environmental regulation. This area is especially relevant because of its increasing importance to international business and the prevailing perception in a large body of literature that it may induce firms to develop green capabilities (Rugman and Verbeke, 1998a).

Government regulation as the sixth force in strategy formulation

Boddewyn and Brewer (1994) have argued that country borders contain resources and institutions which are nation specific, such as national and human factor endowments, market potentials, value systems, etc. Most of these elements can easily be translated into industry- and firm-level impacts through the use of the five forces model. Levitt's observations on the globalization of markets (Levitt, 1983) and Ohmae's views on the 'borderless' world (Ohmae, 1990) suggest, from a normative perspective, that firms should attempt to bridge and even eliminate such differentials among nations. However, the concept of 'State', with a focus on political sovereignty, implies that 'generic' models such as the five forces model to guide strategy cannot be merely extended to the international business context (Boddewyn and Brewer, 1994).

Indeed, it is interesting to observe that Porter (1980) himself, when discussing the concept of generic strategies in the context of global industries explicitly unbundled the 'focus' strategy into three sub-strategies: global segmentation, national responsiveness and protected markets (Rugman and Verbeke, 1993). The last strategy, especially, builds upon the assumption that government intervention has both an indirect impact on the firm, through the five forces *and* a direct impact. For example, sheltering a domestic industry from international competitors implies that the number of rivals is *de facto* reduced and the protected firm thereby obtains valuable 'breathing space'. The five forces model is adequate as a tool to analyse the firm level impact of government shelter. However, the creation of shelter may also lead a foreign firm to shift entry modes, e.g. from exports to FDI, irrespective of the shelter's impact on the MNE's market environment. As suggested by Yarborough and Yarborough (1990), government, through defining and enforcing property rights and the rules of competition, substantially affects the functioning of industry and the relationships among market forces. However, it may also have an immediate impact at the firm level, irrespective of what it does at the industry level. Here, the 'enacted environment'-concept (Weick, 1979) prevails.

Boddewyn (1988) has enriched the now dominating paradigm in the field of international business, namely Dunning's eclectic paradigm (Dunning, 1981, 1988), by adding a political dimension. He demonstrates the relevance of government both as a key driver of industry competition and as a force to be managed appropriately at the firm level in order to gain competitive advantage. Rugman and Verbeke (1990), following Boddewyn (1988), have used the term 'fourth generic' strategy to describe specific types of firm behaviour aimed at influencing government regulation.

In fact, various strands of international business research demonstrate the need to include government regulation as a separate force driving industry competition, including the dependency models, neo mercantillist models and bargaining models (Brewer, 1992). In particular bargaining models figure prominently in the literature (Encarnation and Wells, 1985). Several authors, including Kobrin (1980); Poynter (1985); Yoffie (1993) have described the differential impact of government regulation among industries.

In addition, Salorio (1993) has analysed the diverging strategies of firms *vis-à-vis* government regulations in terms of the international configuration of their value added activities. Hence, both from a descriptive perspective at the industry level and from a more normative perspective at the firm level, government significantly affects what constitutes an effective strategy.

More fundamentally, as already mentioned in the previous section, Rugman and Verbeke (1990), Rugman and Verbeke (1991) and Rugman and Verbeke (1992) have demonstrated that capabilities can be developed in areas dominated or largely influenced by government regulation such as trade and industrial policy, environmental policy, etc. This thinking was extended in Rugman and Verbeke (1998a, b). Even if it is assumed that government serves national interests and the public good, (a view that has often been challenged in the international business literature), firms may still perceive government regulation as an intermediate good (or 'resource') that can be influenced or used in the pursuit of strategic objectives, conditional upon the presence of firm-level dynamic capabilities.[4]

Six cases of dynamic green capabilities and environmental regulation

In this section, six well known case studies on corporate responses by MNEs to environmental regulation are discussed. Each case demonstrates the relevance of adopting a six forces model rather than a five forces one when responding at the firm level to external changes. In addition, dynamic capabilities in responding to environmental regulation, as measured by effective first mover response, appear to be critical to achieve competitive advantage. The six cases discussed below are Du Pont, Laidlaw, Allied Signal, Honeywell, McDonald and Xerox.[5]

Du Pont

In 1987, the Montreal protocol was signed, an international accord designed to reduce the production of CFCs (chlorofluorocarbons), considered to contribute substantially to ozone depletion. At this point in time, Du Pont was the world's largest producer of CFCs with 1987 revenues of $600 million from this business. CFCs were manufactured by Du Pont in each of the Triad blocks (North America, Europe and Japan). Even before the Montreal Protocol, the US Environmental Protection Agency (EPA) with other governmental departments had already obtained a ban on specific 'non-essential' uses of CFCs in 1978 (e.g. on aerosol propellants except for specific medical and military uses) and further restrictions were contemplated.

After initial attempts to oppose CFC regulations until the early eighties ('citing the uncertainty of the science'), Du Pont engaged in a dual strategy oriented toward both market forces and government regulation simultaneously. Given the ban on a number of uses, it pursued a low cost strategy to retain price sensitive customers of CFCs, hoping that they would remain loyal once Du Pont would demonstrate a leadership role in providing substitutes (left-hand side in Figure 1). As regards the non-market forces, Du Pont was instrumental in setting up the Alliance for Responsible CFC policy, consisting of both CFC producers and consumers to lobby Congress and the EPA (right-hand side in Figure 1).

In terms of effective first mover behaviour it is interesting to observe that Du Pont clearly developed a dynamic capability, namely the '*wolf in sheep's clothing*' capability (ability to portray private interests as instrumental to the public good) to cope with governmental regulation and led industry opposition to further CFC controls. In fact, it had already taken a lead role in research and research scanning regarding ozone depletion in 1972, so as to pre-empt government initiatives that would harm the industry, while being based on incomplete scientific evidence. In contrast, until 1986 it did not consistently attempt to gain a first mover advantage vis-à-vis market forces through developing substitutes as it spent little on substitute development because of their expense.

Du Pont was therefore positioned in quadrant 1 of Figure 2. It was, paradoxically, only at the time of the Montreal Protocol negotiations that Du Pont adopted a quadrant 3 of Figure 2 strategy, whereby the new regulatory context was viewed as a market opportunity and a technological trajectory was pursued in the area of substitutes, building upon the concept of time compression diseconomies that would be faced by rivals.

Finally, as regards the international context, Du Pont clearly pursued a strategy driven primarily by US regulations. Its focus was on developing localised capabilities to adequately deal with US regulation, in spite of being the most global CFC producer (in terms of geographical presence). It pushed for international environmental regulations, because foreigners were not subject to a ban as early as in the United States, thus giving them an 'unfair' advantage. Here, Du Pont could be positioned in quadrant 4 of Figure 3.

Laidlaw

The Laidlaw case discusses the 1992 North American restructuring of this Canadian-based service firm, active in areas such as transport, environmental services and waste systems. The case's focus is on the hazardous waste division. Its main strategic challenge is typical for most Canadian MNEs, namely the choice between a country based strategy and North American integration in a context whereby 70 per cent of revenues come from the United States. This firm, which was the result of acquisitions (354 between 1959 and 1990), had maintained a geographical divisional structure in Canada (each facility handled only the waste generated in the province where it was located) and a more functional network structure (disregarding state boundaries) in the United States. In Canada, Laidlaw's environmental services had a dominant market position, whereas in the United States their position was built on cost and customer service

advantages arising from niching and flexibility (use of transfer stations to store and then pool small quantities of waste, thus reducing disposal costs). In the United States, one firm was substantially larger than Laidlaw in the area of hazardous waste, namely Chemical Waste Management Inc. This latter firm's main competitive advantage resulted from seven fully permitted landfills, leading to scale economies and tied up business for many US (waste) generators. Laidlaw had only three such landfills.

In terms of the conceptual framework developed in this paper, Laidlaw's restructuring efforts represented a response restricted to the left-hand side of Figure 1. The regulatory regimes in the United States and provinces such as Ontario and Quebec were very similar and cross border transport of hazardous waste was permitted, the extension of the network approach to Canada was expected to reduce costs and increase flexibility, especially given that most Canadian facilities were located close to the US border. However, this border was also viewed by management as an 'iron curtain'. The import into Canada of US waste was subject to voluntary import restraints. It is interesting to observe that Laidlaw clearly possessed two dynamic capabilities which, when environmental regulation became stricter, gave a first mover response *vis-à-vis* the market forces. First, its experience in absorbing acquisitions made it convenient to purchase additional companies and thereby additional permits for waste disposal. Second, its service orientation in the United States made the firm eager to test new strategic service options such as mini-centres (transfer stations with a sales capability, full environmental service provision). No dynamic capabilities were developed directly in the area of US government regulation, where the firm adopted a primarily reactive approach (quadrant 4 in Figure 2).

As regards its international strategy, the 1992 situation would position the firm clearly as building almost exclusively on localised capabilities (trying to move from quadrant 2 to quadrant 4 in Figure 3) but with an intent to develop internationally transferable strengths that would span the whole of North America. Here, it is paradoxical, however, that gaining internationally transferable network capabilities in the market area (e.g. scale economies as a result of increased Canadian imports of hazardous waste generated in the United States) could lead to a disruption of localised strengths *vis-à-vis* regulators especially in Canada, who would undoubtedly be sensitive to a public outcry on the disposal in Canada of US hazardous waste.

Allied Signal

The Allied Signal case focuses on the challenge of diffusing US environmental practices to Europe, in the early 1990s. It is driven by the possible EU adoption of US type environmental liability regulations, more specifically the Comprehensive Environmental Response, Compensation and Liability Act of 1980, also known as the Superfund-regulations. The Superfund philosophy is that both hazardous waste generators and all actors involved in subsequent waste handling become permanently liable for this waste.[6]

The main problem facing this diversified chemical corporation was its administrative heritage of dispersed decision-making on regulatory compliance. Its main weakness was the lack of economically justifiable on-

site hazardous waste treatment facilities (small waste volumes) and the resulting dependence on off-site commercial disposal facilities. Although a special department had been set up to handle environmental affairs after the establishment of the US Environmental Protection Agency (EPA) in 1970, (right-hand side of Figure 1) no effective dynamic capability was developed for a first mover advantage, whether through influencing the five conventional forces driving competition or government regulation. The case data suggest, in spite of a number of successes and environmental management improvements over time, a largely reactive approach, a lack of commitment to waste reduction in the individual plants and a relatively ineffective implementation of corporate policies in this area. Hence, in terms of our conceptual framework, Allied is positioned in quadrant 2 of Figure 2, lacking both a market-oriented and regulator-oriented first mover response.

In terms of international strategy, the interesting insight arising from this case is that in 1992, when environmental performance levels in the United States were viewed as satisfactory by management, no real dynamic capability existed, certainly not an internationally transferable one, but not even a localised one that could be of use for diffusion purposes worldwide, in this case to Europe. Hence, the challenge was not to transform a localised capability into an internationally transferable one (shift from quadrant 4 to quadrant 3 in Figure 3) but to actually build a dynamic capability (shift out of quadrant 2).

Honeywell

Honeywell is the world's premier manufacturer of industrial, commercial and residential control systems. The case describes Honeywell's penetration of the former Soviet Union markets in the early 1990s in the area of energy conservation controls. It faced high exogenous uncertainty over the evolution of both market forces and regulatory institutions. The firm was driven towards becoming the 'co-creator' itself of a new market system but faced the challenge of deciding how far it should engage itself on such a path. Honeywell had to balance the benefits for selling energy conservation and process controls into the emerging economies against the political risks and economic costs of operating there, while simultaneously taking into account the strategies of its main rivals.

The interesting feature of this case is that market forces and regulatory forces in Russia largely coincide so that Honeywell needed to pursue a strategy whereby changes in government policy had to be taken into account as the single most important external parameter (right-hand side of Figure 1). In this context, obtaining a first mover advantage against rivals by developing a dynamic capability in coping with government regulations in fact equaled a dynamic capability *vis-à-vis* market forces (quadrant 3 in Figure 2). This dynamic capability in the form of privileged linkages with government and related institutions was expressed through establishing pre-emptive joint venture structures to implement high visibility pilot projects supported by government.

Finally, Honeywell viewed itself as an MNE with globally attractive products and efficient manufacturing systems. In the former Soviet Union, however, it needed to complement this perspective with a localised dynamic capability

that would cope with both changes in the non-market environment and institutional uncertainty (quadrant 4 in Figure 3). However, the development of such a capability required substantial firm-level resource commitments, with a very uncertain return, so that Honeywell used the 'wait and see' option rather than actually making use of its dynamic capabilities.

McDonald's

McDonald's is the world's largest fast food provider. The case analyses this firm's collaboration with the Environmental Defense Fund (EDF) in the early nineties. EDF was one of the US' most respected and effective public interest organisations working to protect the environment. It had a strong reputation for its legal work and law suits against firms and government, as well as its successful lobbying for environmental regulation.

McDonald's traditional strengths had been two-fold. First, its supplier linkages were critical. McDonald's acted in a flagship capacity for a large network of providers of intermediate outputs. Second, McDonald's had achieved 'consistency' in its delivery system, which was critical to consumer loyalty in this service business.

In spite of its poor environmental image, McDonald's viewed the environmental challenge as an opportunity to develop a responsible environmental strategy. The aim of McDonald's was to develop a dynamic capability that would make environmental action an ongoing concern in the firm that would cover all the firm's activities. The interesting feature of this case is that McDonald wanted to change its conventional linkages with the market by introducing environmental concerns into the entire value chain but thought it could only do this through a new linkage with the non-market environment (EDF) (right-hand side of Figure 1) which did not even want to be financially rewarded for its support to this strategy. McDonald's viewed the use of the non-market primarily as a tool to improve the image and quality of its delivery system. For example, it greatly increased the recycled content of the boxes provided by suppliers and it created a market for the recycled material generated by its own outlets. Its aim was therefore to create a first mover advantage *vis-à-vis* rivals as a result of a privileged linkage with non-market forces (quadrant 4 in Figure 2). More specifically, McDonald's new dynamic capability in dealing with environmental issues had a three-fold basis inspired by EDF: environmental issues had to be viewed as relevant in all of McDonald's value chain activities; all solutions to perceived problems had to be incremental and complementary to other measures; environmental action had to become an ongoing concern on a par with more conventional business conduct.

Finally, as regards its international strategy, the environmental management initiative was U.S. driven (quadrant 4 in Figure 3) but the ultimate goal was to augment this localised capability so that it would become globally useful (quadrant 3 in Figure 3).

Xerox

Xerox, a global company in office equipment and an industry leader in design for the environment, faces the challenge of designing a global

environmental strategy in 1990. Its key tool is 'asset management': 'the management of products and inventory to minimize their environmental impact at all stages of the product life cycle, particularly at the end of life'.

Xerox's actions were focused primarily on the market (left-hand side of Figure 1). It attempted to develop market driving dynamic capabilities which would allow it not to have to worry directly about compliance because the firm would meet any standards imposed by government anyway. However, such an approach required 'anticipatory' behaviour, placing Xerox in reality on both the left and right in Figure 1. As regards the development of dynamic capabilities, Xerox's approach was one of 'institutionalisation', i.e. pushing both market forces (especially suppliers but also customers) and even government (which should 'serve as a model customer') to adopt its own firm-level standards. Here, it was positioned in quadrant 3 of Figure 2. It adopted a benchmarking-approach, comparing itself even with firms from other industries, to continuously monitor its own environmental performance. It also pushed for 'sensible legislation' relying upon a voluntary adaptation process. In fact, its key dynamic capability was its 'environmental leadership' philosophy adopted by top management and aimed at systematically improving industrial and environmental performance simultaneously.

As regards the firm's international strategy, Xerox's focus was dual with a view to developing both localised and internationally transferable green capabilities, i.e. in quadrant 3 of Figure 3. For the former, it was viewed as critical to be nationally responsive to environmental legislation in each host country. In terms of the latter, information on green consumer behaviour in Europe was used to change managerial behaviour and practices in the United States.

Conclusion

We have demonstrated, using examples of firm-level responses to environmental regulation, that government intervention (and in a broader sense, the non-market environment) constitutes the 'sixth force' driving industry competition and guiding strategic management change. Not all firm-level responses to environmental regulations can be simply interpreted in terms of a required change *vis-à-vis* the five conventional forces driving industry competition. In a number of cases, firm behaviour is geared directly toward the non-market environment itself. This is especially important for multinational enterprises faced with regulatory systems imposed by at least two sovereign governments.

The main implication of a 'six forces' approach is that firms may attempt to develop a dynamic green capability, allowing not only an effective first mover response to environmental regulation indirectly *vis-à-vis* the five forces, but also directly *vis-à-vis* government itself. The case studies helped us to identify a dynamic capability in dealing with government for Du Pont ('wolf in sheep's clothing' capability), Honeywell (privileged linkages with government and related institutions), McDonald's (privileged relationship with non-market forces) and Xerox ('environmental leadership' philosophy). Laidlaw has only built a localised dynamic capability while Allied Signal

has failed to develop any dynamic capabilities in dealing with government environmental regulations.

Finally, the distinction between a localised green capability as compared to an internationally transferable one is significant, because only the latter can be diffused across borders. The joint development of both localised and internationally transferable green capabilities undoubtedly represents one of the main challenges facing multinational enterprises today.

Notes

1 It is possible that strong capabilities would precisely lead to exercising the 'wait-option' in cases of high exogenous uncertainty, a high delayability and low reversibility of resource allocations at the firm level, see Rugman and Verbeke (1998a). However, the focus of the present paper is on changes in the forces driving industry competition that require dynamic capabilities to 'absorb' these changes at the firm level.

2 In addition, Stopford and Strange (1991); Rugman (1995); Ostry (1997), have argued that, in this international context, other forces, such as environmental NGOs, play an increasingly important role.

3 Such an effective first-mover response, to gain competitive advantage, can result from firm-specific routines within the company (e.g. processes characterised by causal ambiguity and tacitness), positions (e.g. specific assets, asset mass efficiencies) and paths (e.g. importance of learning curve effects, time compression diseconomies faced by rivals, time based tasks, preemption of scarce resources), see Reed and DeFillippi (1990); Dierickx and Cool (1989); Nehrt (1998); Dixit (1980); Ghemawat (1986); Lieberman (1989); Kerin *et al.* (1992).

4 Firms may also use government as a tool to obtain shelter, especially when they lack capabilities to compete efficiently in the market place, but this issue is dealt with in other work, see Rugman and Verbeke (1990).

5 Harvard Case Studies: DuPont Freon® Products Division (A), HBS Case 389-111; Laidlaw Environmental Services, HBS Case 794-016; Allied Signal: Managing the Hazardous Waste Liability Risk; HBS Case 793-044; Honeywell's Tushino Project, HBS Case 794-064; McDonald Corporation 1992: Operations, Flexibility and the Environment HBS Case 693-028; Xerox: Design for the Environment, HBS Case 794-022.

6 For a detailed analysis of the Superfund regulations, see Note on the US Hazardous Waste Management Industry, Harvard Business School case no 9-792-067, 1992.

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Reading 10: Extract from 'Navigating in the new competitive landscape'

Michael A. Hitt, Barbara W. Keats and Samuel M. DeMarie

Hitt, M. A., Keats, B. W. and DeMarie, S. M. (1998) 'Navigating in the new competitive landscape: Building strategic flexibility and competitive advantage in the 21st century', *Academy of Management Executive*, vol. 12, no. 4.

The new competitive landscape

The new competitive landscape, driven by the technological revolution and significant globalization, is moving towards hypercompetition (rapidly escalating competition and strategic maneuvering), extreme emphases on price, quality and satisfaction of customer needs, and an increasing focus on innovation (both in technology and new products/services). Furthermore, the time frames of all strategic actions are being reduced. In this new competitive landscape, firms exist in highly turbulent and chaotic environments that produce disorder, disequilibrium and substantive uncertainty.[1]

Technological revolution

The new information highway (i.e.. Internet) supplies information in a manipulable form and makes it available almost instantaneously.[2] It has become a symbolic and substantive engine driving the technological revolution. Significant technological trends and characteristics of this revolution include (1) the increasing rate of technological change and diffusion; (2) the information age; (3) increasing knowledge intensity (escalating importance of and emphasis on knowledge for competitive advantage); and (4) the emergence of positive feedback industries (where returns continue to increase often by building knowledge). The processing and communication of information, of course, have facilitated the rapid diffusion of technology as well as produced an information rich, computational rich and communications rich organizational environment. These changes have shortened product life cycles, made patents less effective in protecting new technology and thus less useful, and reduced the time required to develop and bring new products to the market. Furthermore, new technology is allowing firms to customize products to each customer more quickly and economically.[3]

The widespread diffusion of technology is expected to continue. Within the next 15 years, the number of computers and communication satellites is projected to double while the number of wireless communication networks will rise from 34 million to 1.3 billion. The number of Internet users will grow from 70 million in 1997 to 700 million by 2000. These developments

will increase the knowledge intensity within firms and create extreme cases of information overload for many managers.

These conditions call for firms to develop radically enhanced techniques for processing and integrating information and also provide a catalyst for further technological development. They also place critical importance on organizational learning for the firm to gain and/or maintain a competitive advantage.[4] All of these technological developments are occurring within a new global marketplace.

Increasing globalization

Globalization and the development of cross-border relationships transcend the existence of multinational (or transnational) firms, and affect local businesses in domestic markets, as well. Operation in international markets is no longer reserved solely for large multibusiness corporations. New technology has allowed small organizations to become players in global markets through the creation of web pages for marketing and teleconferencing, for example.

Globalization has largely been due to worldwide economic development and the opening of domestic markets to foreign firms. In fact, economic change often leads political change. Economic development that creates needs and desires for business products forces politicians to agree on new rules to encourage further economic development and growth. One example of these new rules is the development of free-trade agreements (e.g., GATT and NAFTA). Currently, economic concerns are driving major political changes in Eastern Europe, Russia and China. The end of the cold war has opened Eastern Europe and Russia to new economies and developing market places. Additionally, China has been targeted for new investment capital by businesses in other Asian countries, North America and Europe. These changes are having immense effects. For example, China's gross domestic product recently surpassed that of Germany and is rapidly approaching that of Japan, leading some to predict that it will become a global economic superpower.[5]

New economic development and changes in political rules (e.g., free-trade agreements), make it easier for firms to enter international markets, oftentimes through strategic alliances with or acquisitions of firms currently operating in these domestic markets. Moving into new markets provides many opportunities but also multiple challenges. For example, moving into global markets increases incentives for innovation and improved opportunities to earn returns on innovation because of the expanded marketplace.[6] However, international expansion also greatly complicates operating environments. To take advantage of the opportunities for economies of geographic scope, firms must learn effective ways of coordinating operations across country borders, oftentimes in many different countries. This often requires complex structural arrangements. Furthermore, globalization creates a greater number of stakeholders and contingencies with which managers must deal and it also complicates incentive systems for managers and evaluation of the performance of a firm's various subunits. In short, increasing globalization is reshaping the competitive landscape and will continue to do so for the foreseeable future.

The new competitive landscape resulting from the technological revolution and increasing globalization is described in the following section and depicted in Figure 1.

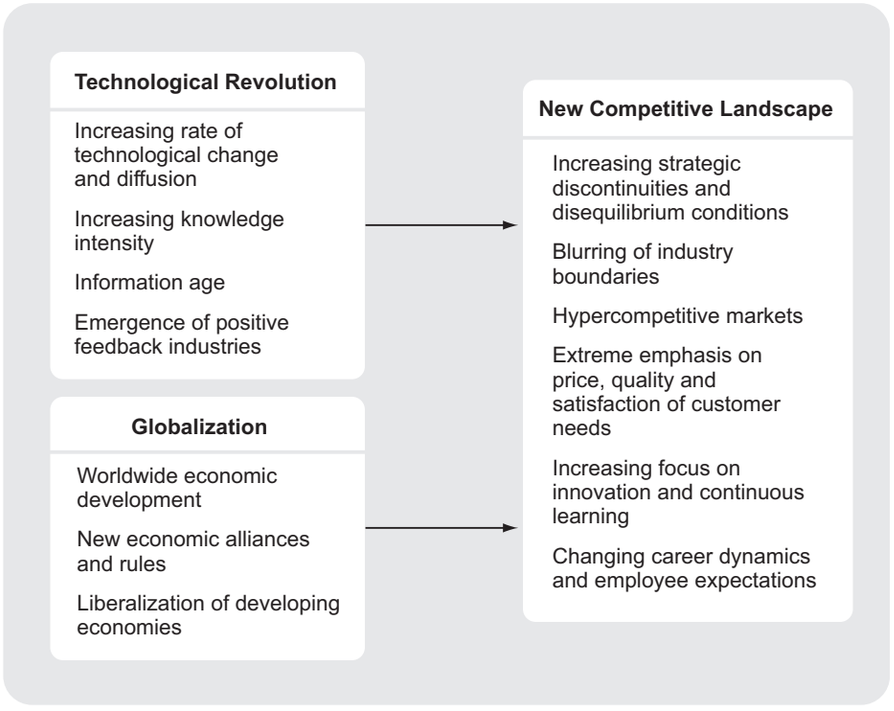

Figure 1: The new competitive landscape

The new competitive landscape

The development of information and communication technologies and the globalization of industries have produced a blurring of industry boundaries that amounts to a massive reordering of business. As such, it becomes even more difficult to identify competitors, much less fully analyze them. For example, new communication technologies are forcing television, telecommunications and utility companies to compete and may eventually blend these formally distinct businesses into one mega-industry. Further evidence of this trend can be seen in that software manufacturers now provide financial services, airlines sell mutual funds, automakers sell insurance and provide financing, and telecommunication companies compete with broadcasters.

As a result, in the new competitive landscape, firms face significant uncertainty, ambiguity and an increasing number of strategic discontinuities. This highly volatile environment produces almost perpetual disequilibrium in the firm. In fact, the new competitive landscape may be closer to purely competitive markets (or at least hypercompetitive markets) than those experienced in the past. Firms have to create innovative products and services of high quality and at low prices to satisfy increasingly informed customers with distinct needs. Thus, managers are motivated to reduce the uncertainty by identifying new sources of competitive advantage.

Managers now face the task of creating a balance between the stability necessary to allow development of strategic planning and decision processes and instability that allows continuous change and adaptation to a dynamic environment. Additionally, managers must recognize and cope with multiple states of coexisting stability and instability and the fact that most of these states are only temporary. Some argue that instability is largely generated by random events, but there may be underlying order to those events and the changes they cause.[7] Thus, while random events cannot be forecasted and the depth of disequilibrium caused can only be managed at the time it occurs, top managers may use vision and foresight (proaction) during periods of destabilization to transform the organization into a new state of equilibrium (albeit temporary). These conditions require flexibility that allows firms to reduce periods of instability by making rapid and effective changes.

An example of a strategic discontinuity is the significant change in Japan's economy and financial landscape. In the 1980s, Japan's economy was red hot and its firms and financial system were considered some of the best in the world. More recently, however, a number of Japanese firms have experienced significant performance problems and Japanese commercial banks have suffered as well. For example, none of the Japanese commercial banks currently retain their Triple-A status that was evident prior to the downturn in the economy. An additional shock was sent through the Japanese economy by the collapse of the major Japanese real estate company, Sanwa Tatemono, in the Spring of 1994. This event provided a final blow for the Nippon Trust Bank that was already experiencing significant problems from excessive property loans which had gone bad. At least some of the problems experienced by Japanese banks such as Nippon Trust can be traced to globalization, particularly loans on real estate deals in North America. One-third of the estimated $600 billion in bad loans from Japanese banks are secured by U.S. properties.[9]

In the new competitive landscape, businesses can no longer expect to be stable and long lived. This fact is reflected in the extensive restructuring in the late 1980s and early 1990s and the continued changes in structure and in the way firms are managed. A useful example of this instability can be seen in the recently announced changes at AT&T. Into the early 1990s, AT&T was acquiring firms with the goal of becoming a vertically integrated telecommunications business. However, it later reversed this goal, announcing a restructuring into three separate businesses, each more focused. This move was required to allow the businesses to be more responsive to their changing competitive environments. AT&T has completed the trivestiture. The intent is to allow the three major businesses, AT&T Services (long distance, wireless and universal card), Lucent Technologies, and NCR, to focus on their primary businesses and markets without the distraction of attempting to achieve synergies among them. There is a strong question regarding the long-term viability of NCR but the other two businesses are expected to improve their performance by operating independently.[9]

Joseph Gorman, CEO of TRW, Inc., summarizes the new environment: "There's no question in my mind that a great transformational change is occurring ... there's a breaking of the mold economically. The old paradigms are no longer very helpful, very useful."[10] Thus, the new competitive

landscape is more complex and dynamic than previous competitive landscapes. The dynamic and complex nature of this environment requires flexibility, speed and innovation. Firms must be flexible to manage discontinuities and unpredictable change in their environments. The enhanced competition and increasing demands from consumers require that firms act rapidly in response to competitors or to proact by beating competitors to the market (or even by redefining market parameters). Bringing new products and services to the market is a necessity in global markets because of the large number of competitors and increasing emphasis on innovation in these markets.

Under conditions of an uncertain and dynamic environment as described, managers often seek to enhance their control by acting as firms are operating in a closed, rational, and predictable system. Such an approach is consistent with linear traditional management thinking and usually leads to further disorder and disintegration of the organization. We argue that managers must break out of this traditional mold. The challenges and opportunities with which they must deal in the new competitive landscape are largely complex and nonlinear. Imputing linear and rational attributes to nonlinear problems will only lead to erroneous strategic actions. Thus, managers must make a paradigm shift to guide their organization's journey within this landscape.[11]

Navigating in the new competitive landscape

[…]

Strategic flexibility

The nature of the forces in the new competitive landscape requires a continuous rethinking of current strategic actions, organization structure, communication systems, corporate culture, asset deployment, investment strategies, in short every aspect of a firm's operation and long-term health. This requires flexibility and the ability to balance stable and fluid states of the organization. We argue that this requires a firm to achieve strategic flexibility. Strategic flexibility, then, is the capability of the firm to proact or respond quickly to changing competitive conditions and thereby develop and/or maintain competitive advantage.[12] The rest of this work explains the actions that individually or in combination help firms to achieve strategic flexibility and competitive advantage.

There are a number of actions that help firms navigate in the new competitive landscape. In specific, these actions directly or indirectly contribute to the achievement of strategic flexibility and competitive advantage. Among those is exercising strategic leadership which has direct effects on a firm's strategic flexibility and competitive advantage. Strategic leadership also affects these outcomes indirectly through the other major actions of (1) developing dynamic core competences, (2) focusing and building human capital, (3) effectively using new technology, (4) engaging in valuable strategies and (5) building new organization structures and culture. The actions required to navigate in the new competitive landscape and their interrelationships are shown in Figure 2 and explained in the following sections.

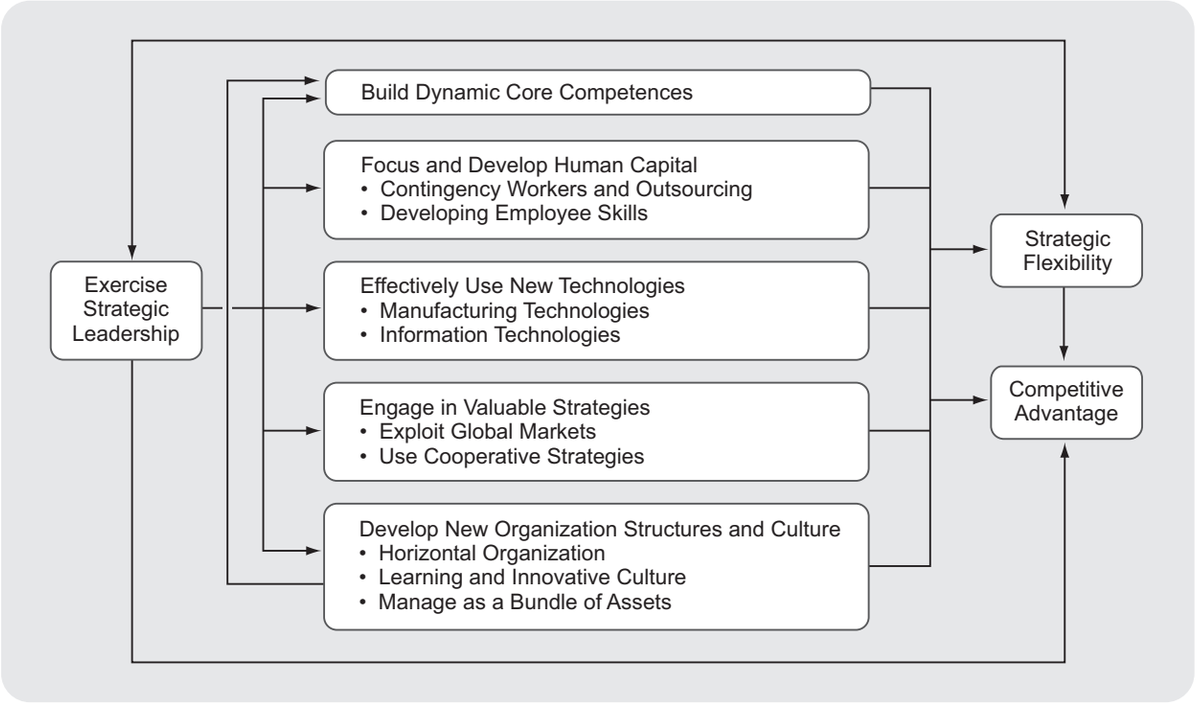

Figure 2: Building strategic flexibility and competitive advantage

Because of its pervasive effect, we begin the discussions with strategic leadership.

Strategic leadership

The strategic leaders of the firm most often are identified as members of the top management team. Thus, strategic leaders are the key decision makers in the organization. These leaders face a significant challenge in attempting to navigate the firm in the new competitive landscape; many of those challenges have been identified herein. They must be visionary leaders in addition to transformational leaders. In other words, they must develop a vision for the organization and obtain the members' commitment to achieving that vision. At the same time, they must be a catalyst for change.[13] According to Watts Wacker of SRI Consulting, "The concept of reengineering without renewing your vision only means you get more efficient at doing the wrong stuff. Its time for a complete reconnecting, reinventing and redefining of the fundamental role of business."[14]

The most important member of the top management team is the chief executive officer (CEO). CEOs, in particular, have to maintain a balance between designing and implementing dramatic transformations, while simultaneously implementing short-term projects that show achievable results. Thus, these leaders must combine a long-term vision with short-term results and ensure that both are compatible. George Hatsopoulos, CEO of ThermoElectron Corporation, suggests that in the future, successful CEOs must invent ways to manage the existing businesses while developing new ones and to maximize the company's short-term profits without sacrificing its long-term opportunities. Charles Knight, CEO of Emerson Electric Company, suggests that one of the primary challenges for a CEO in the future will be

to increase output while curtailing the growth of resources (thereby increasing productivity—doing more with less). Furthermore, he believes that a majority of the future value creation will be realized in markets outside the U.S. Of course, this supports the theme of globalization and the importance of effectively exploiting global opportunities. Knight also believes that the competition for domestic markets will be intense, but the stakes for the winner will be quite high. In other words, global market leadership will hang in the balance.[15]

Two executives who exemplify strategic leaders are Arthur Martinez, CEO of Sears, Roebuck & Co. and George Fisher, CEO of Eastman Kodak. Both executives have effected dramatic performance turnarounds in their firms while building the foundation for future viability and success. Both down-scoped their firms but with the goal of growth. Transformational skills have been prominent in their success. One general manager for Sears commented, "The only aspect of Sears that remains sacred is our commitment to change." At Eastman Kodak, Fisher has emphasized systemic change and, in so doing, has dramatically shortened the development cycle of new products and has aggressively moved into international markets.[16] In both cases, these CEOs have created a new managerial mindset and culture in their firms.

The CEO's role includes development of human capital beginning with the top management team. In the dynamic and complex new competitive landscape, a heterogeneous/diverse top management team is necessary to develop the appropriate strategies. A heterogeneous top management team has varied expertise and knowledge and therefore the capacity to provide more effective strategic leadership in such an environment. However, to assure that this diverse set of skills and knowledge provides the greatest input to strategic decisions, the CEO must achieve a collaborative effort among the top management team. A top management team with more varied sets of expertise and knowledge is more likely to identify environmental changes quickly and/or changes within the firm that require a new strategic direction.[17]

Top executives represent an important resource for firms' attempts to develop a sustained competitive advantage. Firms attempt to build top management teams that have superior managerial skills. The new competitive landscape requires knowledge of the business, ability to develop and communicate a vision for the firm and to build effective relationships with key stakeholders (e.g., international partners, customers, suppliers, etc.), leadership skills, transformational skills, a transnational perspective, capability to build a learning environment, an understanding of technology and its use in the organization, along with general management skills and other special expertise. These represent significant requirements. Yet, because members of the top management team make critical strategic decisions, the manner in which managers exercise the discretion accorded them determines the direction of the business and its ultimate long-term performance.[18]

Strategic leaders must foster and build the human capital of the firm. Effective strategic leaders should maximize employees skills rather than minimizing employee costs. This means that top managers must not only invest appropriately to recruit and select top quality employees, they must also invest in training and development to continuously build their skills and

develop a corporate culture that promotes loyalty, commitment and cohesion among the employees.[19]

Perhaps the most critical skill executives must develop among their managers is that of nonlinear thinking and learning. Nonlinear thinking/learning implies an ability to conceptualize (and reconceptualize) different and possibly contradictory information and scenarios. Integrating these capabilities among managers and other members of the organization provides for substantial strategic flexibility and hence another source of competitive advantage.[20] One of the best examples of such thinking occurs at Chapparal Steel. Interestingly, the CEO of Chapparal, Gordon Forward, refers to large corporate research centers as research cemeteries. That is because many good ideas die in them. At Chapparal, Forward suggests that every employee is in R&D. Employees are allowed and encouraged to experiment to improve operations. They have done so employing numerous unorthodox approaches that worked, including building scale models of the production system on the production floor to devise and compare alternative methods with current operations. They have improved the processes so much over time that they can produce a rolled ton of steel in 1.5 worker hours whereas the Japanese average is 5.6 worker hours and Germany's average is 5.7 hours. Dorothy Leonard-Barton refers to Chapparal Steel as "a spectacular example of a learning-laboratory corporation."[21]

The task of the strategic leader may seem daunting. Clearly, it involves taking risk. The task is aptly described by Percy Barnevik, former CEO of ABB, "I'd rather be roughly right and fast than exactly right and slow. The cost of delay is greater than the cost of an occasional mistake."[22] Undoubtedly, the new competitive landscape presents a number of significant challenges to the CEO and the top management team. However, the CEO and the top management team can exercise effective strategic leadership and thus navigate the firm through the landscape maze to achieve its goals. In addition to strategic flexibility, the exercise of strategic leadership affects all of the other five components of competitive advantage as shown in Figure 2.

While much recent work has emphasized the importance of core competences in gaining a competitive advantage, there has been little focus on how to maintain the value of these competences over time. Requiring strategic leaders' vision and transformational skills, these core competences must be dynamic. That is, they must be continuously updated and/or changing to maintain their value in the marketplace (for competitive advantage). Dynamic core competences are examined next.

Developing dynamic core competences

In turbulent and often chaotic environments, firms need to develop and nurture a unique set of resources to build a competitive advantage. These unique sets of resources are built into skills and capabilities, often referred to as core competences. The turbulent and changing nature of the environment suggests that these core competences cannot remain static. They must be continually evolving and developing. Therefore, firms must continue to invest in and upgrade their competences to create new strategic growth alternatives. Development of dynamic core competences requires technological and skill accumulation over time (i.e., organizational learning

that is discussed in a later section). In turn, these invisible assets can be exploited and leveraged to develop new products and new markets and to out-compete competitors.[23]

Dynamic core competences help firms remain flexible and able to respond quickly to unpredicted and thereby unexpected changes in the environment. Additionally, dynamic core competences help firms partially enact their environment. In other words, firms with dynamic core competences are able to partially shape the environments in which they operate and compete. In so doing, they are better able to achieve desired outcomes.

One of the ways that firms partially shape their environments through dynamic core competences is to create new opportunities. For example, these competences can help develop new products and/or identify new markets in which the firm can effectively compete. Furthermore, the ability to leverage core competences across geographic and product business units helps firms to achieve economies of scale and scope, important for successful international diversification. Exploiting global markets is an important growth alternative in the new competitive landscape.[24] Thus, while turbulent environments present significant uncertainty for firms, the ability to create new opportunities and take advantage of them can help reduce this uncertainty. Additionally, the use of competences to build linkages and share resources across geographic and product units can heighten the uncertainty for competitors (by creating a causal ambiguity making it difficult for competitors to imitate).[25]

If firms do not continue to invest in and develop their core competences over time, thereby making them dynamic, the competences may become outdated, and limit future strategic alternatives for the firm. For example, if the competences become internally institutionalized, it may narrow the potential strategic opportunities identified and considered by the firm. In these cases, core competences become core rigidities.[26] This is exemplified by IBM's problems in recent years. In 1986, IBM was ranked as the number one corporation in America using *Fortune*'s reputation rankings. However, in 1995, the same rankings showed IBM to be 281 among America's top corporations.[27] Exemplifying this severe drop in the rankings, IBM suffered billions of dollars in net losses and had to layoff tens of thousands of employees. IBM's core competences revolved around what had been its core business, mainframe computers. IBM's competences were focused on the manufacture, marketing and servicing of large mainframe computers. As the market for this product deteriorated over time, the competences also became largely outdated. If IBM had built its competitive advantage on dynamic core competences, it probably would have pursued and emphasized new products and new markets much sooner. Once competences become core rigidities as in the IBM case, the firm may have to develop a totally new core competence to once again become competitive, perhaps in a new market. For example, recently IBM has developed a new vision and is pursuing network-centric computing.[28]

When firms are sensitive to their customers and their competitors, building dynamic core competences can better help them serve their customers and gain advantages over their competitors. Thus, dynamic core competences help firms develop strategic flexibility. In addition to the other characteristics

necessary to create strategic flexibility, firms must develop human capital. Human capital plays a role in building dynamic core competences and is explained next.

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Reading 11: Extract from 'Responding to the challenges of global markets'

C. Samuel Craig and Susan P. Douglas

Craig, C. S. and Douglas, S. P. (1996) 'Responding to the Challenges of Global Markets: Change, Complexity, Competition and Conscience', *The Columbia Journal of World Business*, Winter 1996.

Globalization is no longer an abstraction but a stark reality, that virtually all firms, large and at small, face, Firms that want to survive in the 21st century must confront this all encompassing force chat pervades every aspect of business. In a wide range of industries from automobiles to food and clothing, firms face the pressures of global competition at home as well as in international markets. Choosing not to participate in global markets is no longer an option. All firms, regardless of their size, have to craft strategies in the broader context of world markets to anticipate, respond and adapt to the . changing configuration of these markets.

Navigating global waters successfully and establishing direction to guide the firm in an increasingly turbulent work environment is a key challenge facing today's managers. To date, this has largely been perceived as the purview of large multinationals with diverse far-flung operations in all parts of the global market.[1] Of key importance is the need to remain responsive to local markets, while at the same time achieving global efficiency through integrating and coordinating operations across world markets and allowing for the transfer of learning from operations in one part of the world to another.[2]

For large multinationals with experience in plying global waters, this orientation is not misplaced. However, the conclusions and implications do not apply to firms with limited experience in international markets who are just beginning to target customers in other countries and learning how to build operations in these markets. Today, an increasing number of small and medium-size firms are going global and their concerns are markedly different from those of established, multi-nationals.

Firms initially entering international markets will be more concerned with learning about international markets, selecting an appropriate arena to compete, and determining how to leverage core competencies in international markets. Once in international markets, firms have to build their position in these markets, establishing a strong local presence by developing new products and adapting to local tastes and preferences. As the firm expands internationally, it will need to move away from country-centered strategies and improve integration and coordination across national markets, leveraging its competencies and skills to develop a leadership position.[3]

The purpose of this paper is to identify the challenges facing firms in global markets and develop a framework which can be applied by all firms in dealing with these challenges, irrespective of their stage of involvement or

experience in global markets. First, the four major challenges (change, complexity, competition and conscience), and the implications for firms in each stage of involvement in international markets are discussed. Then, three key management tools for dealing with these challenges are examined—information systems technology, administrative structures, and resource deployment, and their use in each of the three phases of involvement are outlined.

The changing globescape[4]

Establishing a clearly defined competitive strategy to provide direction for their efforts was a paramount concern of managers in the '80s[5]. As competitive pressures became more acute, management recognized that they needed to develop a strategic thrust geared to securing and sustaining a competitive advantage in their served markets. Effective strategy moves were grounded in assessment of the firm's current competitive position and identification of the skills and capabilities affording the most leverage in the light of future market developments.[6] More recently, the validity of traditional approaches to strategy[7] and even the value of strategic thinking[8] has been questioned, The transformation of the competitive landscape by broad-based changes in technology, structural changes impacting industry, the emergence of new sources of competition, and increased environmental concerns, have all led to a re-evaluation of strategic thinking and strategy development. In particular, the changing competitive landscape and increasingly turbulent environment suggest the need for new approaches and a broader view of how the organization should respond to changing environmental conditions.[9]

Technology is rapidly altering the nature of competition and strategy in many industries. The global proliferation of relatively inexpensive computing power and global linkages of computer networks through telecommunications have resulted in an information-rich, computation-rich and communication-rich organizational environment. Telecommunications and computer networks are changing the way in which managers work and interact, providing links between country-centered organizations, and permitting technology to be rapidly shared and learning transferred throughout the organization. As a result, speed of technological diffusion and change is rapidly increasing.[10] At the same time, the growing technological orientation of many industries and use of computers, and telecommunications technology have created greater knowledge intensity and dependency. Often technological knowledge and rapid product and process innovation is the *sine qua non* to achieving and sustaining competitive success in the global marketplace.

The telecommunications revolution has also stimulated major structural changes in industries and organizations. Vertically integrated, centralized organizational systems have given way to-decentralized, highly fragmented fluid structures, linked by agreements, contracts and working relationships. This has radically changed the nature and basis of competitive advantage and the economics of doing business. At the same time, traditional industry boundaries and demarcation lines are breaking down as business and technologies fuse or converge (for example, communications and consumer

electronics, entertainment and education) and new industries emerge, with as yet no clearly defined boundaries.[11]

Competition is also intensifying, as globalization changes the boundaries of competition and new sources of competition emerge. The basis for competition is also changing, as new players are able to enter the market with an ease unknown even ten years ago. Information technology has dramatically transformed the costs of doing business and enabled firms to bypass stages in the value chain, for example, going directly to customers, or outsourcing functions and operations. Such factors have changed the nature of the value chain in many industries, enabling new and non-traditional competitors to enter the market rapidly and compete effectively.

Concern over the impact of industrial activity on the environment has also heightened, adding to the complexity of doing business in today's world. New forms of packaging, demand for recycling, more efficient use of resources, greater responsibility for protecting the environment, limiting toxic waste, as well as to educate consumers and to develop more "user friendly" products are all compounding the tasks and demands placed on the organization. Increasingly, firms are called upon not only to be environmentally and politically correct, but also to be more responsible citizens in all their activities worldwide.

Challenges facing global markets

Involvement in global markets presents the firm with a number of challenges. These challenges influence competitive advantage in global markets, and in part determine how readily the firm can achieve economies of scale and scope as well as realize synergies from operation in a multi-country environment. In striving to develop a strategy that will make it more competitive, the firm must grapple with four interrelated challenges of global marketing strategy— change, complexity, competition and conscience (see Figure 1).

The rapid pace of *change* implies that marketing strategy must be continually monitored and adapted to take into account new economic, technological, political and social realities. The interplay of these forces in different geographic areas creates a new *complexity* as market configurations evolve, taxing the firm's ability to manage far-flung and diverse operations. The increasing intensity and accelerated speed of *competition* constitutes yet another challenge in the path towards success in global markets. Competitors actions also accelerate change and increase the degree of complexity. In addition, growing awareness and concern with social responsibility and ethical issues, such as environmental protection and conservation, or consumer rights, require that the firm develop a social *conscience*, and heed this in shaping its global marketing strategy (see Table 1 for a summary of the challenges and responses by phase of international involvement).

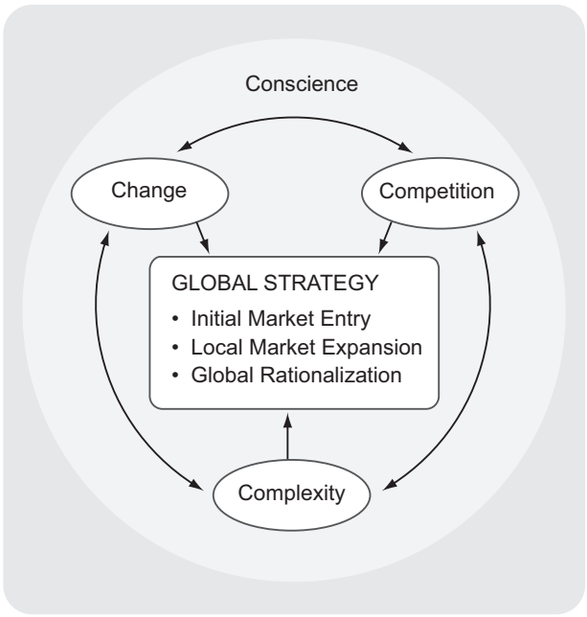

Figure 1: Challenges facing the global marketer

Table 1: Global market challenges [GMCs] as a function of international market development

Stage of International Market Development	[GMC:] Change	[GMC:] Complexity	[GMC:] Competition	[GMC:] Conscience
Phase 1 – Initial Market Entry	Confined	Simple	Limited	Contained
	Selected	Uni-dimensional	Established	Parochial
Phase 2 – Local Market Expansion	Varied	Moderate	Mounting	Diverse
	Multi-directional	Hierarchical/ Matrixed	Diverse	Conflicting Demands
Phase 3 – Global Rationalization	Continual	Highly	Intense	All encompassing
	Pervasive	Virtual/Networked	Worldwide	
	Inter-linked	Inter-active	Inter-dependent	Multi-faceted
				Inter-twined

Change

Rapid change pervades all aspects of operations in global markets as well as the context in which they take place. Not only are the rates of technological evolution, knowledge obsolescence and the intensity of competition increasing at an alarming pace in many industries, but unforeseen events are dramatically changing the political and economic context in which markets develop and strategies are formulated.

Technological change renders product development, production processes, and experience rapidly obsolete and contributes to escalating investment costs as well as heightened competitive pressures. In the notebook segment of the personal computer industry, for example, the cycle of new model introduction has shrunk to less than three months, rendering models rapidly obsolete and requiring constant vigilance to new product development and attention to keeping ahead of the competition.

The rapid pace of change is further complicated by its increasingly discontinuous nature. Until the late 80's, change was somewhat predictable and linear in nature. Today, established models for predicting change no longer work in many instances due to the discontinuity of change. At one time, market trends and growth in a developing country could be predicted on the basis of trends in more advanced countries ten years earlier. For example, development of telecommunications networks within a country progressed slowly and required massive investment in wires and cables to connect customers. Today's cellular technology makes it possible for a country to quickly develop a modern telecommunications system and "leap frog" the wire stage. Further, cellular technology opens up the market for fax machines, personal digital assistants, modems, etc.

At the same time, as customers become more mobile and are exposed to new ideas and patterns of behavior through the new global media, the diffusion of new products and innovation takes place more rapidly. Rather than first being adopted by opinion leaders and then trickling down to other members of society, innovations are now spreading horizontally across countries and societies: No sooner does a new trend or fashion emerge in one country than it spreads rapidly to another. Not only are global marketers agents of change in introducing new and innovative products and services to other countries, but in addition, they must respond to the rapid pace at which societies are changing and market trends evolving.

While the pace of change is accelerating, pushed by the engine of technology and global communication, it is becoming increasingly uncertain and unpredictable-occurring in unexpected ways from unexpected sources. Events such as the break-up of the Soviet Union have had far-reaching, often cataclysmic effects on world markets and the geopolitics of world trade. Subsequent political and economic events dramatically halted the rate of economic growth and foreign investment in the Soviet economy. The break up also had an impact on former trading partners such as India, Cuba, Vietnam, and Northern Korea, forcing them to seek out new markets for their products, and sources for energy, arms, minerals, and other raw materials. It also put a sudden end to the Cold War and ushered in a new political era. Industries such as defense, which fed on the desire to maintain the geopolitical balance, declined, triggering the realignment of related and tributary industries such as aerospace, electronics, and vehicles.

A new economic order thus appears to be emerging, characterized by new players and new and more diverse patterns of trade. Yet, all these changing patterns appear fraught with uncertainty, as a surge in one direction is countered by a pull in another. A new instability has crept into world markets, threatening at any moment to tilt the precarious balance of economic forces. Moves toward world economic growth, regional integration or the empowerment of Third World nations, can without warning be thwarted by pressures to retreat behind the bulwark of economic nationalism.

Coping with change

While there is no denying the rapid pace of change, the consequences differ depending on the stage of globalization. Firms in PHASE 1—international market entry—are relatively less affected by the uncertainty spawned by

change, since their scope of international activity is confined to a few markets. Furthermore, they can pace their involvement relative to the anticipated rate of change, and selectively avoid markets characterized by high levels of uncertainty, such as the Latin American markets.

Firms in the PHASE 2 of globalization—local market expansion—with fairly extensive international operations will have to cope with variation in change. Some markets will be changing rapidly while others will be more stable. These uneven rates of change result in multi-directional pulls as the firm attempts to chart a course through the cross-currents of differential change. The difficulties of change will be exacerbated by the number of markets in which the firm is involved.

Firms in PHASE 3 of globalization—global rationalization—will be affected by pervasive change which impacts all aspects of its business throughout markets worldwide. Given the extent of its global operations, this impact will be felt on a continual basis. Not only must the firm cope with change on a market by market basis, but it must also deal with the interlinkages between markets. Thus, change is a constant reality and mechanisms must be developed to incorporate it into the firm's overall strategy.

Rapid change has both positive and negative aspects. For firms able to adapt rapidly to the new environment, there are countless opportunities. Those unable to adapt will see their market share dwindle. Firms in the initial entry phase have the luxury of picking and choosing markets that are suited to their core competencies. Firms in PHASE 3—global rationalization—need to focus on retaining strategic flexibility to cope with the rapid change that is occurring at uneven rates in different markets. One of the key responses is to be able to deploy resources so as to help shape change, rather than being swept along by its forces. Firms in PHASE 2—local market development—are caught in the middle and face the most daunting challenge in coping with change. They have not fully developed the structural mechanisms to coordinate and control multiple interlinked markets and have greater difficulty re-deploying resources across markets.

Complexity

A second challenge arises from the increasing complexity of managing international operations. Technological advances, on the one hand, enable management to direct, coordinate, and control operations on a much broader and diverse geographic scale and scope than previously possible. Yet at the same time, such advances add further complexity, as management has to master the tools and skills required to handle the burgeoning international infrastructure. As the geographic scope and scale of operations extends further and further, management is faced with the task of directing and controlling diverse and far-flung activities at various stages in the value chain, often in widely divergent environmental contexts. Additional layers of organization begin to creep into the corporate infrastructure and further complicate the global management task. With trends toward regional market integration, management systems are established to direct and coordinate market operations within a region, and to provide an intermediate link between corporate headquarters and local management. At the same time, organizational links between functions in each stage of the value chain are

added at a global level to ensure the transfer of ideas, information and experience across geographic areas and to exploit potential synergies worldwide, Similarly, as customer markets become more dispersed, establishment of linkages with customers and suppliers becomes increasing critical in order to coordinate supplying and servicing these markets rapidly and efficiently, and to compete effectively in global markets.

Sometimes links are established with other organizations, in some cases competitors, to exploit newly emerging opportunities in specific product markets or parts of the world. Strategic alliances may be formed with firms to provide desired geographic market coverage, or skills and resources needed to implement a given strategy. In other cases, temporary networks are formed by far flung partners (suppliers, customers, and competitors) sharing costs, skills, access, and operations in global markets through electronic links, utilizing the latest information technology, to take advantage of a specific market opportunity. These networks are fluid and flexible, evolving in response to changing market conditions. Once an opportunity is met, or disappears, so the network will disband.

Spatial market patterns are also becoming increasingly complex. Once the configuration of markets was predominant national in character, surrounded by seemingly impenetrable boundaries. However, the gradual breaking down of such boundaries in many parts of the world, means that markets previously viewed as separated and independent are becoming linked and beginning to function as one.

Contending with complexity

Complexity in the global environment is a product of contextual factors such as technological advances, diverse social and economic change, and political upheavals, More directly, for the firm complexity is intensified by the scope of its operations in global markets, at different levels of the value chain and how they are arrayed across markets, the interlinkages and interdependencies between markets, and the increased blurring of product market boundaries, both functionally and geographically.

Firms in PHASE 1, tend to face relatively simple operating environments. Control and coordination are straight-forward issues as marketing activities are limited to a few countries beyond the domestic market. Decision making is unidirectional emanating from the domestic market base.

As firms expand their international operations in PHASE 2 and begin to focus their efforts on developing products and services to suit tastes in local markets, they begin to encounter a greater degree of complexity. Coordination and control of activities in international markets become more problematic as the appropriate degree of centralization becomes unclear. Organizational structures become more communication intensive and matrixed to reconcile potentially conflicting goals and differing market conditions in each market. Decision making tends to take place on parallel tracks.

Firms with extensive international operations must develop strategy and conduct business in highly complex environments. Outsourcing of functions and establishment of relational networks paves the way for the virtual

organization. Business functions become interlinked and interact to allow for optimal control and coordination of activities on a global basis. Companies such as Ford, IBM, and Bristol Meyers Squibb have begun to evolve organizational structures that will allow them to compete effectively into the 21st century.

Competition

Increasing intensity of competition in global markets constitutes yet another challenge facing companies at all stages of involvement in international markets. As markets open up, and become more integrated, the pace of change accelerates, technology shrinks distances between markets and reduces the scale advantages of large firms, new sources of competition emerge, and competitive pressures mount at all levels of the organization.

As more and more firms venture into global markets, competition proliferates, posing new threats and dangers to be reckoned with. In addition to facing competition from well-established multinationals and from domestic firms entrenched in their respective product or service markets, firms face growing competition from films in newly industrializing countries and previously protected markets in the Third World, as well as emerging global networks or coalitions of organizations of diverse national origins.

Firms from newly industrializing nations such as Taiwan, Singapore, Korea and Hong Kong are increasingly taking the initiative in competing in global markets, rather than acting as low-cost suppliers to firms in the Industrial Triad. The threat of competition from companies in countries such as India, China, Malaysia, and Brazil is also on the rise, as their own domestic markets are opening up to foreign competition, stimulating greater awareness of international market opportunities and of the need to be internationally competitive. Companies which previously focused on protected domestic markets are entering into markets in other countries, creating new sources of competition, often targeted to price-sensitive market segments.

At the same time, spurred by new advances in communications technology and rapid obsolescence, the speed or competitor response is accelerating. No longer does a pioneer in global markets enjoy a substantial lead time over competitors. Nimble competitors, benefiting from lower overhead and operating costs, enter rapidly with clones or low-cost substitutes, and take advantage of the pioneer's investment in R&D and product development. Modern communications and information technology also encourage rapid competitor response to price changes, or new distribution and promotional tactics, and further heighten the pace of competition.

Confronting competition

Not only is competition intensifying for all firms regardless of their degree of global market involvement, but the basis for competition is changing. Competition continues to be market-based and ultimately relies on delivering superior value to consumers. However, success in global markets depends on knowledge accumulation and deployment. Firms that win in the market place will be those that can use information to their advantage to guide the delivery of superior value. Further; the increased blurring of product market

boundaries and interlinking of markets means that how value is perceived and by whom is less clear.

Firms beginning to enter international markets are in a position to limit competitive exposure by choosing markets that are free of formidable foes. They can zero in on markets where they have a competitive advantage, such as being the low cost supplier in a price sensitive market. In addition, firms in PHASE 1 tend to be dealing with established competitors that are known quantities, and frequently compete on a single dimension, e.g., cost, leadership.

Competition mounts quickly for firms in PHASE 2 as they expand their operations in international markets. Not only does competition increase, but it tends to proliferate and become quire diverse. New competition may enter the market, and existing competitors react to the firm's actions, requiring adaptation of its competitive strategy. Furthermore, the nature of competition may vary from one market to another. In some markets, the firm may differentiate its products, to beat competition while in others it needs to focus on cost leadership, making it difficult to leverage core competencies across markets.

Firms in PHASE 3 of international market development face intense competition throughout the world. Their far-flung operations will encounter competitors of all types who may mount a frontal attack, or cherry-pick lucrative market niches or attempt to block the firm's expansion into new markets or market segments. In addition, global markets are often highly interdependent, with actions in one market having consequences for many other markets. The astute global marketer will attempt to gain a competitive edge and take advantage of these interdependencies.

Conscience

The fourth challenge relates to the firm's moral and social responsibilities in the global marketplace. A host of such responsibilities can be identified, covering a broader spectrum of social and corporate issues. Environmental issues, for example, have emerged as a key theme in the 90's.[12] Companies have become increasingly aware of the need to take measures to limit destruction of the environment. These include measures to limit pollution of the atmosphere through the emission of gases and other toxic substances, to conserve resources such as paper and plastic, whose production results in environmental destruction, and to produce and design products and packaging which are environmentally friendly.

Such measures need to cover all aspects of the firm's activities from R&D and production to marketing and service, as well as its operations in all parts of the world. Production should be engineered so as to conserve resources and limit toxic waste. Products should be designed to be free of environmentally harmful substances, such as phosphates and fluorocarbons. Use of recyclable packaging and refillable containers also helps reduce environmental pollution.

Another area of social responsibility of particular relevance in international markets is concern with customer education and general well-being. This is often an important issue in marketing in Third World countries, where

disadvantaged or poorly educated consumers are less able to judge the merits of a product or service or understand how to use it. Attention to the potential of promotional material or product information to mislead customers is important. While customers in industrialized nations are accustomed to puffery or exaggerated product claims, and are typically highly skeptical of manufacturer-originated material, customers in developing countries are often less well-equipped or less likely to screen such material. Ability to read or understand usage instructions is another issue requiring attention. Hiring support staff to explain appropriate usage and educate consumers is often an effective approach.

Product safety standards should also meet the most exacting international standards, even in countries where no such regulation exists. This is especially critical in the case of products such as pharmaceuticals, where substantial health risks are present. Firms must take the responsibility to provide accurate information to the industry and regulatory bodies, and to educate consumers and distributors to ensure appropriate usage.

Conforming to conscience

Intense competition, rapid change, and increased complexity in the global marketing environment make it more difficult, but all the more imperative, that a firm act in a socially responsible manner. Firms in PHASE 1 may find the task simpler than those in PHASE 2 and PHASE 3, as their activities are contained in a small number of markets. They may, however, adopt a somewhat parochial approach to social responsibility, applying the standard of their home market in other countries.

Firms in PHASE 2 are likely to be faced with diverse standards of ethical and socially responsible behavior. These conflicting demands often make it difficult to formulate a coherent strategy for dealing with ethical issues in the different countries. Furthermore, they pose a moral dilemma for the firm in terms of whether and how far the firm should impose the ethical standards of its home market in other countries, where these are perceived to be superior. Differing legal systems and codes of business conduct may further complicate the issue.

In PHASE 3, conscience becomes an all encompassing concern. With operations in large numbers of countries throughout the world and with sales volumes exceeding the G.N.P. of many nations, the global corporation must he highly sensitive to the impact of its decisions. Conscience becomes multi-faceted and requires a consistent global vision and strong corporate leadership, to guide actions worldwide. Decisions that impact the environment, workers, and consumer safety and well being in different markets and parts of the world are also becoming more inter-twined. A decision to move production to a developing country has implications for jobs in other markets and potential pollution of the environment, and may give rise to issues of exploitation of Third World workers, or bribes to local officials and so on. The firm must weigh each of its actions and possible outcomes carefully to ensure that they conform to its global social and moral conscience.

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Reading 12: The competitive advantage of nations

Michael E. Porter

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National prosperity is created, not inherited. It does not grow out of a country's natural endowments, its labor pool, its interest rates, or its currency's value, as classical economics insists.

A nation's competitiveness depends on the capacity of its industry to innovate and upgrade. Companies gain advantage against the world's best competitors because of pressure and challenge. They benefit from having strong domestic rivals, aggressive home-based suppliers, and demanding local customers.

In a world of increasingly global competition, nations have become more, not less, important. As the basis of competition has shifted more and more to the creation and assimilation of knowledge, the role of the nation has grown. Competitive advantage is created and sustained through a highly localized process. Differences in national values, culture, economic structures, institutions, and histories all contribute to competitive success. There are striking differences in the patterns of competitiveness in every country; no nation can or will be competitive in every or even most industries. Ultimately, nations succeed in particular industries because their home environment is the most forward-looking, dynamic, and challenging.

These conclusions, the product of a four-year study of the patterns of competitive success in ten leading trading nations, contradict the conventional wisdom that guides the thinking of many companies and national governments–and that is pervasive today in the United States. (For more about the study, see the insert "Patterns of National Competitive Success.") According to prevailing thinking, labor costs, interest rates, exchange rates, and economies of scale are the most potent determinants of competitiveness. In companies, the words of the day are merger, alliance, strategic partnerships, collaboration, and supranational globalization. Managers are pressing for more government support for particular industries. Among governments, there is a growing tendency to experiment with various policies intended to promote national competitiveness–from efforts to manage exchange rates to new measures to manage trade to policies to relax antitrust–which usually end up only undermining it. (See the insert "What is National Competitiveness?")

These approaches, now much in favor in both companies and governments, are flawed. They fundamentally misperceive the true sources of competitive advantage. Pursuing them, with all their short-term appeal, will virtually guarantee that the United States–or any other advanced nation–never achieves real and sustainable competitive advantage.

We need a new perspective and new tools–an approach to competitiveness that grows directly out of an analysis of internationally successful industries,

without regard for traditional ideology or current intellectual fashion. We need to know, very simply, what works and why. Then we need to apply it.

How companies succeed in international markets

Around the world, companies that have achieved international leadership employ strategies that differ from each other in every respect. But while every successful company will employ its own particular strategy, the underlying mode of operation–the character and trajectory of all successful companies–is fundamentally the same.

Companies achieve competitive advantage through acts of innovation. They approach innovation in its broadest sense, including both new technologies and new ways of doing things. They perceive a new basis for competing or find better means for competing in old ways. Innovation can be manifested in a new product design, a new production process, a new marketing approach, or a new way of conducting training. Much innovation is mundane and incremental, depending more on a cumulation of small insights and advances than on a single, major technological breakthrough. It often involves ideas that are not even "new"–ideas that have been around, but never vigorously pursued. It always involves investments in skill and knowledge, as well as in physical assets and brand reputations.

Some innovations create competitive advantage by perceiving an entirely new market opportunity or by serving a market segment that others have ignored. When competitors are slow to respond, such innovation yields competitive advantage. For instance, in industries such as autos and home electronics, Japanese companies gained their initial advantage by emphasizing smaller, more compact, lower capacity models that foreign competitors disdained as less profitable, less important, and less attractive.

In international markets, innovations that yield competitive advantage anticipate both domestic and foreign needs. For example, as international concern for product safety has grown, Swedish companies like Volvo, Atlas Copco, and AGA have succeeded by anticipating the market opportunity in this area. On the other hand, innovations that respond to concerns or circumstances that are peculiar to the home market can actually retard international competitive success. The lure of the huge U.S. defense market, for instance, has diverted the attention of U.S. materials and machine-tool companies from attractive, global commercial markets.

Information plays a large role in the process of innovation and improvement–information that either is not available to competitors or that they do not seek. Sometimes it comes from simple investment in research and development or market research; more often, it comes from effort and from openness and from looking in the right place unencumbered by blinding assumptions or conventional wisdom.

This is why innovators are often outsiders from a different industry or a different country. Innovation may come from a new company, whose founder has a nontraditional background or was simply not appreciated in an older, established company. Or the capacity for innovation may come into an existing company through senior managers who are new to the particular

industry and thus more able to perceive opportunities and more likely to pursue them. Or innovation may occur as a company diversifies, bringing new resources, skills, or perspectives to another industry. Or innovations may come from another nation with different circumstances or different ways of competing.

With few exceptions, innovation is the result of unusual effort. The company that successfully implements a new or better way of competing pursues its approach with dogged determination, often in the face of harsh criticism and tough obstacles. In fact, to succeed, innovation usually requires pressure, necessity, and even adversity: the fear of loss often proves more powerful than the hope of gain.

Once a company achieves competitive advantage through an innovation, it can sustain it only through relentless improvement. Almost any advantage can be imitated. Korean companies have already matched the ability of their Japanese rivals to mass-produce standard color televisions and VCRs; Brazilian companies have assembled technology and designs comparable to Italian competitors in casual leather footwear.

Competitors will eventually and inevitably overtake any company that stops improving and innovating. Sometimes early-mover advantages such as customer relationships, scale economies in existing technologies, or the loyalty of distribution channels are enough to permit a stagnant company to retain its entrenched position for years or even decades. But sooner or later, more dynamic rivals will find a way to innovate around these advantages or create a better or cheaper way of doing things. Italian appliance producers, which competed successfully on the basis of cost in selling midsize and compact appliances through large retail chains, rested too long on this initial advantage. By developing more differentiated products and creating strong brand franchises, German competitors have begun to gain ground.

Ultimately, the only way to sustain a competitive advantage is to *upgrade it*– to move to more sophisticated types. This is precisely what Japanese automakers have done. They initially penetrated foreign markets with small, inexpensive compact cars of adequate quality and competed on the basis of lower labor costs. Even while their labor-cost advantage persisted, however, the Japanese companies were upgrading. They invested aggressively to build large modern plants to reap economies of scale, Then they became innovators in process technology, pioneering just-in-time production and a host of other quality and productivity practices. These process improvements led to better product quality, better repair records, and better customer-satisfaction ratings than foreign competitors had. Most recently, Japanese automakers have advanced to the vanguard of product technology and are introducing new, premium brand names to compete with the world's most prestigious passenger cars.

The example of the Japanese automakers also illustrates two additional prerequisites for sustaining competitive advantage. First, a company must adopt a global approach to strategy. It must sell its product worldwide, under its own brand name, through international marketing channels that it controls. A truly global approach may even require the company to locate production or R&D facilities in other nations to take advantage of lower wage rates, to gain or improve market access, or to take advantage of

foreign technology. Second, creating more sustainable advantages often means that a company must make its existing advantage obsolete–even while it is still an advantage. Japanese auto companies recognized this; either they would make their advantage obsolete, or a competitor would do it for them.

As this example suggests, innovation and change are inextricably tied together. But change is an unnatural act, particularly in successful companies; powerful forces are at work to avoid and defeat it. Past approaches become institutionalized in standard operating procedures, and management controls. Training emphasizes the one correct way to do anything; the construction of specialized, dedicated facilities solidifies past practice into expensive brick and mortar, the existing strategy takes on an aura of invincibility and becomes rooted in the company culture.

Patterns of national competitive success

To investigate why nations gain competitive advantage in particular industries and the implications for company strategy and national economies, I conducted a four-year study of ten important trading nations: Denmark, Germany, Italy, Japan, Korea, Singapore, Sweden, Switzerland, the United Kingdom, and the United States. I was assisted by a team of more than 30 researchers, most of whom were natives of and based in the nation they studied. The researchers all used the same methodology.

Three nations–the United States, Japan, and Germany–are the world's leading industrial powers. The other nations represent a variety of population sizes, government policies toward industry, social philosophies, geographical sizes, and locations. Together, the ten nations accounted for fully 50% of total world exports in 1985, the base year for statistical analysis.

Most previous analyses of national competitiveness have focused on single nation or bilateral comparisons. By studying nations with widely varying characteristics and circumstances, this study sought to separate the fundamental forces underlying national competitive advantage from the idiosyncratic ones.

In each nation, the study consisted of two parts. The first identified all industries in which the nation's companies were internationally successful, using available statistical data, supplementary published sources, and field interviews. We defined a nation's industry as internationally successful if it *possessed competitive advantage relative to the best worldwide competitors*. Many measures of competitive advantage, such as reported profitability, can be misleading. We chose as the best indicators the presence of substantial and sustained exports to a wide array of other nations and/or significant outbound foreign investment based on skills and assets created in the home country. A nation was considered the home base for a company if it was either a locally owned, indigenous enterprise or managed autonomously although owned by a foreign company or investors. We then created a profile of the industries in which each nation was internationally

successful at three points in time: 1971, 1978, and 1985. The pattern of competitive industries in each economy was far from random: the task was to explain, it and how it had changed over time. Of particular interest were the connections or relationships among the nation's competitive industries.

In the second part of the study, we examined the history of competition in particular industries to understand how competitive advantage was created. On the basis of national profiles, we selected over 100 industries or industry groups for detailed study; we examined many more in less detail. We went back as far as necessary to understand how and why the industry began in the nation, how it grew, when and why companies from the nation developed international competitive advantage, and the process by which competitive advantage had been either sustained or lost. The resulting case histories fall short of the work of a good historian in their level of detail, but they do provide insight into the development of both the industry and the nation's economy.

We chose a sample of industries for each nation that represented the most important groups of competitive industries in the economy. The industries studied accounted for a large share of total exports in each nation: more than 20% of total exports in Japan, Germany, and Switzerland, for example, and more than 40% in South Korea. We studied some of the most famous and important international success stories–German high-performance autos and chemicals, Japanese semiconductors and VCRs, Swiss banking and pharmaceuticals, Italian footwear and textiles, U.S. commercial aircraft and motion pictures–and some relatively obscure but highly competitive industries–South Korean pianos, Italian ski boots, and British biscuits. We also added a few industries because they appeared to be paradoxes: Japanese home demand for Western-character typewriters is nearly nonexistent, for example, but Japan holds a strong export and foreign investment position in the industry. We avoided industries that were highly dependent on natural resources: such industries do not form the backbone of advanced economies, and the capacity to compete in them is more explicable using classical theory. We did; however, include a number of more technologically intensive, natural-resource-related industries such as newsprint and agricultural chemicals.

The sample of nations and industries offers a rich empirical foundation for developing and testing the new theory of how countries gain competitive advantage. The accompanying article concentrates on the determinants of competitive advantage in individual industries and also sketches out some of the study's overall implications for government policy and company strategy. A fuller treatment in my book, *The Competitive Advantage of Nations*, develops the theory and its implications in greater depth and provides many additional examples. It also contains detailed descriptions of the nations we studied and the future prospects for their economies.

–Michael E. Porter

Successful companies tend to develop a bias for predictability and stability; they work on defending what they have. Change is tempered by the fear that there is much to lose. The organization at all levels filters out information that would suggest new approaches, modifications, or departures from the norm. The internal environment operates like an immune system to isolate or expel "hostile" individuals who challenge current directions or established thinking. Innovation ceases; the company becomes stagnant; it is only a matter of time before aggressive competitors overtake it.

The diamond of national advantage

Why are certain companies based in certain nations capable of consistent innovation? Why do they ruthlessly pursue improvements, seeking an evermore sophisticated source of competitive advantage? Why are they able to overcome the substantial barriers to change and innovation that so often accompany success?

The answer lies in four broad attributes of a nation, attributes that individually and as a system constitute the diamond of national advantage, the playing field that each nation establishes and operates for its industries. These attributes are:

1 *Factor Conditions.* The nation's position in factors of production, such as skilled labor or infrastructure, necessary to compete in a given industry.

2 *Demand Conditions.* The nature of home-market demand for the industry's product or service.

3 *Related and Supporting Industries.* The presence or absence in the nation of supplier industries and other related industries that are internationally competitive.

4 *Firm Strategy, Structure, and Rivalry.* The conditions in the nation governing how companies are created, organized, and managed, as well as the nature of domestic rivalry.

These determinants create the national environment in which companies are born and learn how to compete. (See [Figure 1]) Each point on the diamond–and the diamond as a system–affects essential ingredients for achieving international competitive success: the availability of resources and skills necessary for competitive advantage in an industry; the information that shapes the opportunities that companies perceive and the directions in which they deploy their resources and skills; the goals of the owners, managers, and individuals in companies; and most important, the pressures on companies to invest and innovate. (See the insert "How the Diamond Works: The Italian Ceramic Tile Industry.")

When a national environment permits and supports the most rapid accumulation of specialized assets and skills–sometimes simply because of greater effort and commitment–companies gain a competitive advantage. When a national environment affords better ongoing information and insight into product and process needs, companies gain a competitive advantage. Finally, when the national environment pressures companies to innovate and invest, companies both gain a competitive advantage and upgrade those advantages over time.

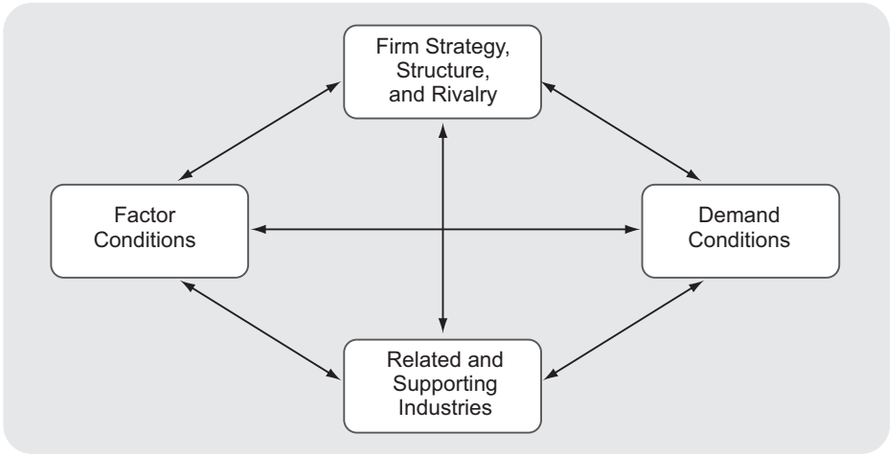

Figure 1: Determinants of national competitive advantage

Factor Conditions. According to standard economic theory, factors of production–labor, land, natural resources, capital, infrastructure–will determine the flow of trade. A nation will export those goods that make most use of the factors with which it is relatively well endowed. This doctrine, whose origins date back to Adam Smith and David Ricardo and that is embedded in classical economics, is at best incomplete and at worst incorrect.

In the sophisticated industries that form the backbone of any advanced economy, a nation does not inherit but instead creates the most important factors of production–such as skilled human resources or a scientific base. Moreover, the stock of factors that a nation enjoys at a particular time is less important than the rate and efficiency with which it creates, upgrades, and deploys them in particular industries.

The most important factors of production are those that involve sustained and heavy investment and are specialized. Basic factors, such as a pool of labor or a local raw-material source, do not constitute an advantage in knowledge-intensive industries. Companies can access them easily through a global strategy or circumvent them through technology. Contrary to conventional wisdom, simply having a general work force that is high school or even college educated represents no competitive advantage in modern international competition. To support competitive advantage, a factor must be highly specialized to an industry's particular needs–a scientific institute specialized in optics, a pool of venture capital to fund software companies. These factors are more scarce, more difficult for foreign competitors to imitate–and they require sustained investment to create.

Nations succeed in industries where they are particularly good at factor creation. Competitive advantage results from the presence of world-class institutions that first create specialized factors and then continually work to upgrade them. Denmark has two hospitals that concentrate in studying and treating diabetes–and a world-leading export position in insulin. Holland has premier research institutes in the cultivation, packaging, and shipping of flowers, where it is the world's export leader.

What is not so obvious, however, is that selective disadvantages in the more basic factors can prod a company to innovate and upgrade–a disadvantage in

a static model of competition can become an advantage in a dynamic one. When there is an ample supply of cheap raw materials or abundant labor, companies can simply rest on these advantages and often deploy them inefficiently. But when companies face a selective disadvantage, like high land costs, labor shortages, or the lack of local raw materials, they *must* innovate and upgrade to compete.

Implicit in the oft-repeated Japanese statement, "We are an island nation with no natural resources," is the understanding that these deficiencies have only served to spur Japan's competitive innovation. Just-in-time production, for example, economized on prohibitively expensive space. Italian steel producers in the Brescia area faced a similar set of disadvantages: high capital costs, high energy costs, and no local raw materials. Located in Northern Lombardy, these privately owned companies faced staggering logistics costs due to their distance from southern ports and the inefficiencies of the state-owned Italian transportation system. The result: they pioneered technologically advanced minimills that require only modest capital investment, use less energy, employ scrap metal as the feedstock, are efficient at small scale, and permit producers to locate close to sources of scrap and end-use customers. In other words, they converted factor disadvantages into competitive advantage.

Disadvantages can become advantages only under certain conditions. First, they must send companies proper signals about circumstances that will spread to other nations, thereby equipping them to innovate in advance of foreign rivals. Switzerland, the nation that experienced the first labor shortages after World War II, is a case in point. Swiss companies responded to the disadvantage by upgrading labor productivity and seeking higher value, more sustainable market segments. Companies in most other parts of the world, where there were still ample workers, focused their attention on other issues, which resulted in slower upgrading.

The second condition for transforming disadvantages into advantages is favorable circumstances elsewhere in the diamond–a consideration that applies to almost all determinants. To innovate, companies must have access to people with appropriate skills and have home-demand conditions that send the right signals. They must also have active domestic rivals who create pressure to innovate. Another precondition is company goals that lead to sustained commitment to the industry. Without such a commitment and the presence of active rivalry, a company may take an easy way around a disadvantage rather than using it as a spur to innovation.

For example, U.S. consumer-electronics companies, faced with high relative labor costs, chose to leave the product and production process largely unchanged and move labor-intensive activities to Taiwan and other Asian countries. Instead of upgrading their sources of advantage, they settled for labor-cost parity. On the other hand, Japanese rivals, confronted with intense domestic competition and a mature home market, chose to eliminate labor through automation. This led to lower assembly costs, to products with fewer components and to improved quality and reliability. Soon Japanese companies were building assembly plants in the United States–the place U.S. companies had fled.

Demand Conditions. It might seem that the globalization of competition would diminish the importance of home demand. In practice, however, this is simply not the case. In fact, the composition and character of the home market usually has a disproportionate effect on how companies perceive, interpret, and respond to buyer needs. Nations gain competitive advantage in industries where the home demand gives their companies a clearer or earlier picture of emerging buyer needs, and where demanding buyers pressure companies to innovate faster and achieve more sophisticated competitive advantages than their foreign rivals. The size of home demand proves far less significant than the character of home demand.

Home-demand conditions help build competitive advantage when a particular industry segment is larger or more visible in the domestic market than in foreign markets. The larger market segments in a nation receive the most attention from the nation's companies; companies accord smaller or less desirable segments a lower priority. A good example is hydraulic excavators, which represent the most widely used type of construction equipment in the Japanese domestic market–but which comprise a far smaller proportion of the market in other advanced nations. This segment is one of the few where there are vigorous Japanese international competitors and where Caterpillar does not hold a substantial share of the world market.

More important than the mix of segments per se is the nature of domestic buyers. A nation's companies gain competitive advantage if domestic buyers are the world's most sophisticated and demanding buyers for the product or service. Sophisticated, demanding buyers provide a window into advanced customer needs; they pressure companies to meet high standards; they prod them to improve, to innovate, and to upgrade into more advanced segments. As with factor conditions, demand conditions provide advantages by forcing companies to respond to tough challenges.

Especially stringent needs arise because of local values and circumstances. For example, Japanese consumers, who live in small, tightly packed homes, must contend with hot, humid summers and high-cost electrical energy–a daunting combination of circumstances. In response, Japanese companies have pioneered compact, quiet air-conditioning units powered by energy-saving rotary compressors. In industry after industry, the tightly constrained requirements of the Japanese market have forced companies to innovate, yielding products that are *kei-haku-tan-sho*–light, thin, short, small–and that are internationally accepted.

Local buyers can help a nation's companies gain advantage if their needs anticipate or even shape those of other nations–if their needs provide ongoing "early-warning indicators" of global market trends. Sometimes anticipatory needs emerge because a nation's political values foreshadow needs that will grow elsewhere. Sweden's long-standing concern for handicapped people has spawned an increasingly competitive industry focused on special needs. Denmark's environmentalism has led to success for companies in water-pollution control equipment and windmills.

More generally, a nation's companies can anticipate global trends if the nation's values are spreading–that is, if the country is exporting its values and tastes as well as its products. The international success of U.S. companies in fast food and credit cards, for example, reflects not only the

American desire for convenience but also the spread of these tastes to the rest of the world. Nations export their values and tastes through media, through training foreigners, through political influence, and through the foreign activities of their citizens and companies.

Related and Supporting Industries. The third broad determinant of national advantage is the presence in the nation of related and supporting industries that are internationally competitive. Internationally competitive home-based suppliers create advantages in downstream industries in several ways. First, they deliver the most cost-effective inputs in an efficient, early, rapid, and sometimes preferential way. Italian gold and silver jewelry companies lead the world in that industry in part because other Italian companies supply two-thirds of the world's jewelry-making and precious-metal recycling machinery.

Far more significant than mere access to components and machinery, however, is the advantage that home-based related and supporting industries provide in innovation and upgrading – an advantage based on close working relationships. Suppliers and end-users located near each other can take advantage of short lines of communication, quick and constant flow of information, and an ongoing exchange of ideas and innovations. Companies have the opportunity to influence their suppliers' technical efforts and can serve as test sites for R&D work, accelerating the pace of innovation.

The illustration [shown as Figure 2] offers a graphic example of how a group of close-by, supporting industries creates competitive advantage in a range of interconnected industries that are all internationally competitive. Shoe producers, for instance, interact regularly with leather manufacturers on new styles and manufacturing techniques and learn about new textures and colors of leather when they are still on the drawing boards. Leather manufacturers gain early insights into fashion trends, helping them to plan new products. The interaction is mutually advantageous and self-reinforcing, but it does not happen automatically: it is helped by proximity, but occurs only because companies and suppliers work at it.

The nation's companies benefit most when the suppliers are, themselves, global competitors. It is ultimately self-defeating for a company or country to create "captive" suppliers who are totally dependent on the domestic industry and prevented from serving foreign competitors. By the same token, a nation need not be competitive in all supplier industries for its companies to gain competitive advantage. Companies can readily source from abroad materials, components, or technologies without a major effect on innovation or performance of the industry's products. The same is true of other generalized technologies–like electronics or software–where the industry represents a narrow application area.

Home-based competitiveness in related industries provides similar benefits: information flow and technical interchange speed the rate of innovation and upgrading, A home-based related industry also increases the likelihood that companies will embrace new skills, and it also provides a source of entrants who will bring a novel approach to competing. The Swiss success in pharmaceuticals emerged out of previous international success in the dye industry, for example; Japanese dominance in electronic musical keyboards

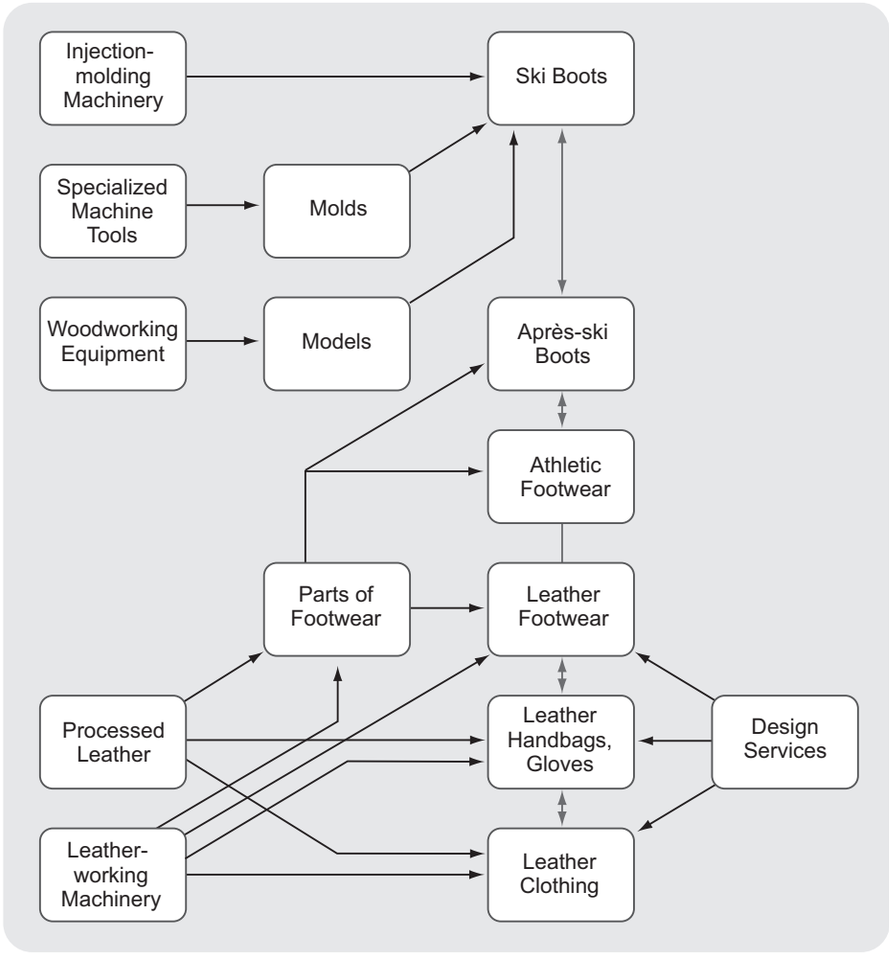

Figure 2: The Italian footwear cluster

grows out of success in acoustic instruments combined with a strong position in consumer electronics.

Firm Strategy, Structure, and Rivalry. National circumstances and context create strong tendencies in how companies are created, organized, and managed, as well as what the nature of domestic rivalry will be. In Italy, for example, successful international competitors are often small or medium-sized companies that are privately owned and operated like extended families; in Germany, in contrast, companies tend to be strictly hierarchical in organization and management practices, and top managers usually have techical backgrounds.

No one managerial system is universally appropriate–notwithstanding the current fascination with Japanese management. Competitiveness in a specific industry results from convergence of the management practices and organizational modes favored in the country and the sources of competitive advantage in the industry. In industries where Italian companies are world leaders–such as lighting, furniture, footwear, woolen fabrics, and packaging machines–a company strategy that emphasizes focus, customized products, niche marketing, rapid change, and breathtaking flexibility fits both the dynamics of the industry and the character of the Italian management system. The German management system, in contrast, works well in technical or engineering-oriented industries–optics, chemicals, complicated

machinery–where complex products demand precision manufacturing, a careful development process, after-sale service, and thus a highly disciplined management structure. German success is much rarer in consumer goods and services where image marketing and rapid new-feature and model turnover are important to competition.

Countries also differ markedly in the goals that companies and individuals seek to achieve. Company goals reflect the characteristics of national capital markets and the compensation practices for managers. For example, in Germany and Switzerland, where banks comprise a substantial part of the nation's shareholders, most shares are held for long-term appreciation and are rarely traded. Companies do well in mature industries, where ongoing investment in R&D and new facilities is essential but returns may be only moderate. The United States is at the opposite extreme, with a large pool of risk capital but widespread trading of public companies and a strong emphasis by investors on quarterly and annual share-price appreciation. Management compensation is heavily based on annual bonuses tied to individual results. America does well in relatively new industries, like software and biotechnology, or ones where equity funding of new companies feeds active domestic rivalry, like specialty electronics and services. Strong pressures leading to underinvestment, however, plague more mature industries.

Individual motivation to work and expand skills is also important to competitive advantage. Outstanding talent is a scarce resource in any nation. A nation's success largely depends on the types of education its talented people choose, where they choose to work, and their commitment and effort. The goals a nation's institutions and values set for individuals and companies, and the prestige it attaches to certain industries, guide the flow of capital and human resources–which, in turn, directly affects the competitive performance of certain industries. Nations tend to be competitive in activities that people admire or depend on–the activities from which the nation's heroes emerge. In Switzerland, it is banking and pharmaceuticals. In Israel, the highest callings have been agriculture and defense-related fields. Sometimes it is hard to distinguish between cause and effect. Attaining international success can make an industry prestigious, reinforcing its advantage.

The presence of strong local rivals is a final, and powerful, stimulus to the creation and persistence of competitive advantage. This is true of small countries, like Switzerland, where the rivalry among its pharmaceutical companies, Hoffmann-La Roche, Ciba-Geigy, and Sandoz, contributes to a leading worldwide position. It is true in the United States in the computer and software industries. Nowhere is the role of fierce rivalry more apparent than in Japan, where there are 112 companies competing in machine tools, 34 in semiconductors, 25 in audio equipment, 15 in cameras–in fact, there are usually double figures in the industries in which Japan boasts global dominance. (See [Table 1]) Among all the points on the diamond, domestic rivalry is arguably the most important because of the powerfully stimulating effect it has on all the others.

Table 1: Estimated number of Japanese rivals in selected industries

Air conditioners	13
Audio Equipment	25
Automobiles	9
Cameras	15
Car Audio	12
Carbon Fibers	7
Construction Equipment*	15
Copiers	14
Facsimile Machines	10
Large-scale Computers	6
Lift Trucks	8
Machine Tools	112
Microwave Equipment	5
Motorcycles	4
Musical Instruments	4
Personal Computers	16
Semiconductors	34
Sewing Machines	20
Shipbuilding†	33
Steel‡	5
Synthetic Fibers	8
Television Sets	15
Truck and Bus Tires	5
Trucks	11
Typewriters	14
Videocassette Recorders	10

* The number of companies varied by product area. The smallest number, 10, produced bulldozers. Fifteen companies produced shovel trucks, truck cranes, and asphalt-paving equipment. There were 20 companies in hydraulic excavators, a product area where Japan was particularly strong.

† Six companies had annual production exports in excess of 10,000 tons.

‡ Integrated companies.

Sources: Field interviews; *Nippon Kogyo Shinbun*, *Nippon Kogyo Nenkan*, 1987, Yano Research, *Market Share Jitan*, 1987, researchers' estimates.

Conventional wisdom argues that domestic competition is wasteful: it leads to duplication of effort and prevents companies from achieving economies of scale. The "right solution" is to embrace one or two national champions, companies with the scale and strength to tackle foreign competitors, and to guarantee them the necessary resources, with the government's blessing. In fact, however, most national champions are uncompetitive, although heavily subsidized and protected by their government. In many of the prominent industries in which there is only one national rival, such as aerospace and telecommunications, government has played a large role in distorting competition.

Static efficiency is much less important than dynamic improvement, which domestic rivalry uniquely spurs. Domestic rivalry, like any rivalry, creates pressure on companies to innovate and improve. Local rivals push each other to lower costs, improve quality and service, and create new products and processes. But unlike rivalries with foreign competitors, which tend to be

analytical and distant, local rivalries often go beyond pure economic or business competition and become intensely personal. Domestic rivals engage in active feuds; they compete not only for market share but also for people, for technical excellence, and perhaps most important, for "bragging rights." One domestic rival's success proves to others that advancement is possible and often attracts new rivals to the industry. Companies often attribute the success of foreign rivals to "unfair" advantages. With domestic rivals, there are no excuses.

Geographic concentration magnifies the power of domestic rivalry. This pattern is strikingly common around the world: Italian jewelry companies are located around two towns, Arezzo and Valenza Po; cutlery companies in Solingen, West Germany and Seki, Japan; pharmaceutical companies in Basel, Switzerland; motorcycles and musical instruments in Hamamatsu, Japan. The more localized the rivalry, the more intense. And the more intense, the better.

Another benefit of domestic rivalry is the pressure it creates for constant upgrading of the sources of competitive advantage. The presence of domestic competitors automatically cancels the types of advantage that come from simply being in a particular nation–factor costs, access to or preference in the home market, or costs to foreign competitors who import into the market. Companies are forced to move beyond them, and as a result, gain more sustainable advantages. Moreover, competing domestic rivals will keep each other honest in obtaining government support. Companies are less likely to get hooked on the narcotic of government contracts or creeping industry protectionism. Instead, the industry will seek–and benefit from–more constructive forms of government support, such as assistance in opening foreign markets, as well as investments in focused educational institutions or other specialized factors.

Ironically, it is also vigorous domestic competition that ultimately pressures domestic companies to look at global markets and toughens them to succeed in them, Particularly when there are economies of scale, local competitors force each other to look outward to foreign markets to capture greater efficiency and higher profitability. And having been tested by fierce domestic competition, the stronger companies are well equipped to win abroad. If Digital Equipment can hold its own against IBM, Data General, Prime, and Hewlett-Packard, going up against Siemens or Machines Bull does not seem so daunting a prospect.

The diamond as a system

Each of these four attributes defines a point on the diamond of national advantage; the effect of one point often depends on the state of others. Sophisticated buyers will not translate into advanced products, for example, unless the quality of human resources permits companies to meet buyer needs. Selective disadvantages in factors of production will not motivate innovation unless rivalry is vigorous and company goals support sustained investment. At the broadest level, weaknesses in any one determinant will constrain an industry's potential for advancement and upgrading.

But the points of the diamond are also self-reinforcing: they constitute a system. Two elements, domestic rivalry and geographic concentration, have especially great power to transform the diamond into a system–domestic rivalry because it promotes improvement in all the other determinants and geographic concentration because it elevates and magnifies the interaction of the four separate influences.

The role of domestic rivalry illustrates how the diamond operates as a self-reinforcing system. Vigorous domestic rivalry stimulates the development of unique pools of specialized factors, particularly if the rivals are all located in one city or region: the University of California at Davis has become the world's leading center of wine-making research, working closely with the California wine industry. Active local rivals also upgrade domestic demand in an industry. In furniture and shoes, for example, Italian consumers have learned to expect more and better products because of the rapid pace of new product development that is driven by intense domestic rivalry among hundreds of Italian companies. Domestic rivalry also promotes the formation of related and supporting industries. Japan's world-leading group of semiconductor producers, for instance, has spawned world-leading Japanese semiconductor-equipment manufacturers.

The effects can work in all directions: sometimes world-class suppliers become new entrants in the industry they have been supplying. Or highly sophisticated buyers may themselves enter a supplier industry, particularly when they have relevant skills and view the new industry as strategic. In the case of the Japanese robotics industry, for example, Matsushita and Kawasaki originally designed robots for internal use before beginning to sell robots to others. Today they are strong competitors in the robotics industry. In Sweden, Sandvik moved from specialty steel into rock drills, and SKF moved from specialty steel into ball bearings.

Another effect of the diamond's systemic nature is that nations are rarely home to just one competitive industry, rather, the diamond creates an environment that promotes *clusters* of competitive industries. Competitive industries are not scattered helter-skelter throughout the economy but are usually linked together through vertical (buyer-seller) or horizontal (common customers, technology, channels) relationships. Nor are clusters usually scattered physically; they tend to be concentrated geographically. One competitive industry helps to create another in a mutually reinforcing process. Japan's strength in consumer electronics, for example, drove its success in semiconductors toward the memory chips and integrated circuits these products use. Japanese strength in laptop computers, which contrasts to limited success in other segments, reflects the base of strength in other compact, portable products and leading expertise in liquid-crystal display gained in the calculator and watch industries.

Once a cluster forms, the whole group of industries becomes mutually supporting. Benefits flow forward, backward, and horizontally. Aggressive rivalry in one industry spreads to others in the cluster, through spin-offs, through the exercise of bargaining power, and through diversification by established companies. Entry from other industries within the cluster spurs upgrading by stimulating diversity in R&D approaches and facilitating the introduction of new strategies and skills. Through the conduits of suppliers

or customers who have contact with multiple competitors, information flows freely and innovations diffuse rapidly. Interconnections within the cluster, often unanticipated, lead to perceptions of new ways of competing and new opportunities. The cluster becomes a vehicle for maintaining diversity and overcoming the inward focus, inertia, inflexibility, and accommodation among rivals that slows or blocks competitive upgrading and new entry.

The role of government

In the continuing debate over the competitiveness of nations, no topic engenders more argument or creates less understanding than the role of the government. Many see government as an essential helper or supporter of industry, employing a host of policies to contribute directly to the competitive performance of strategic or target industries. Others accept the "free market" view that the operation of the economy should be left to the workings of the invisible hand.

Both views are incorrect. Either, followed to its logical outcome, would lead to the permanent erosion of a country's competitive capabilities. On one hand, advocates of government help for industry frequently propose policies that would actually hurt companies in the long run and only create the demand for more helping. On the other hand, advocates of a diminished government presence ignore the legitimate role that government plays in shaping the context and institutional structure surrounding companies and in creating an environment that stimulates companies to gain competitive advantage.

Government's proper role is as a catalyst and challenger; it is to encourage–or even push–companies to raise their aspirations and move to higher levels of competitive performance, even though this process may be inherently unpleasant and difficult. Government cannot create competitive industries; only companies can do that. Government plays a role that is inherently partial, that succeeds only when working in tandem with favorable underlying conditions in the diamond. Still, government's role of transmitting and amplifying the forces of the diamond is a powerful one. Government policies that succeed are those that create an environment in which companies can gain competitive advantage rather than those that involve government directly in the process, except in nations early in the development process. It is an indirect, rather than a direct, role.

Japan's government, at its best, understands this role better than anyone–including the point that nations pass through stages of competitive development and that government's appropriate role shifts as the economy progresses. By stimulating early demand for advanced products, confronting industries with the need to pioneer frontier technology through symbolic cooperative projects, establishing prizes that reward quality, and pursuing other policies that magnify the forces of the diamond, the Japanese government accelerates the pace of innovation. But like government officials anywhere, at their worst Japanese bureaucrats can make the same mistakes: attempting to manage industry structure, protecting the market too long, and yielding to political pressure to insulate inefficient retailers, farmers, distributors, and industrial companies from competition.

It is not hard to understand why so many governments make the same mistakes so often in pursuit of national competitiveness: competitive time for companies and political time for governments are fundamentally at odds. It often takes more than a decade for an industry to create competitive advantage; the process entails the long upgrading of human skills, investing in products and processes, building clusters, and penetrating foreign markets. In the case of the Japanese auto industry, for instance, companies made their first faltering steps toward exporting in the 1950s–yet did not achieve strong international positions until the 1970s.

But in politics, a decade is an eternity. Consequently, most governments favor policies that offer easily perceived short-term benefits, such as subsidies, protection, and arranged mergers–the very policies that retard innovation. Most of the policies that would make a real difference either are too slow and require too much patience for politicians or, even worse, carry with them the sting of short-term pain. Deregulating a protected industry, for example, will lead to bankruptcies sooner and to stronger, more competitive companies only later.

Policies that convey static, short-term cost advantages but that unconsciously undermine innovation and dynamism represent the most common and most profound error in government industrial policy. In a desire to help, it is all too easy for governments to adopt policies such as joint projects to avoid "wasteful" R&D that undermine dynamism and competition. Yet even a 10% cost saving through economies of scale is easily nullified through rapid product and process improvement and the pursuit of volume in global markets–something that such policies undermine.

There are some simple, basic principles that governments should embrace to play the proper supportive role for national competitiveness: encourage change, promote domestic rivalry, stimulate innovation. Some of the specific policy approaches to guide nations seeking to gain competitive advantage include the following:

Focus on specialized factor creation. Government has critical responsibilities for fundamentals like the primary and secondary education systems, basic national infrastructure, and research in areas of broad national concern such as health care. Yet these kinds of generalized efforts at factor creation rarely produce competitive advantage. Rather, the factors that translate into competitive advantage are advanced, specialized, and tied to specific industries or industry groups. Mechanisms such as specialized apprenticeship programs, research efforts in universities connected with an industry, trade association activities, and, most important, the private investments of companies ultimately create the factors that will yield competitive advantage.

Avoid intervening in factor and currency markets. By intervening in factor and currency markets, governments hope to create lower factor costs or a favorable exchange rate that will help companies compete more effectively in international markets. Evidence from around the world indicates that these policies–such as the Reagan administration's dollar devaluation–are often counterproductive. They work against the upgrading of industry and the search for more sustainable competitive advantage.

The contrasting case of Japan is particularly instructive, although both Germany and Switzerland have had similar experiences. Over the past 20 years, the Japanese have been rocked by the sudden Nixon currency devaluation shock, two oil shocks, and, most recently, the yen shock–all of which forced Japanese companies to upgrade their competitive advantages. The point is not that government should pursue policies that intentionally drive up factor costs or the exchange rate. Rather, when market forces create rising factor costs or a higher exchange rate, government should resist the temptation to push them back down.

Enforce strict product, safety, and environmental standards. Strict government regulations can promote competitive advantage by stimulating and upgrading domestic demand. Stringent standards for product performance, product safety, and environmental impact pressure companies to improve quality, upgrade technology, and provide features that respond to consumer and social demands. Easing standards, however tempting, is counterproductive.

When tough regulations anticipate standards that will spread internationally, they give a nation's companies a head start in developing products and services that will be valuable elsewhere. Sweden's strict standards for environmental protection have promoted competitive advantage in many industries. Atlas Copco, for example, produces quiet compressors that can be used in dense urban areas with minimal disruption to residents. Strict standards, however, must be combined with a rapid and streamlined regulatory process that does not absorb resources and cause delays.

Sharply limit direct cooperation among industry rivals. The most pervasive global policy fad in the competitiveness arena today is the call for more cooperative research and industry consortia. Operating on the belief that independent research by rivals is wasteful and duplicative, that collaborative efforts achieve economies of scale, and that individual companics are likely to underinvest in R&D because they cannot reap all the benefits, governments have embraced the idea of more direct cooperation. In the United States, antitrust laws have been modified to allow more cooperative R&D; in Europe, mega-projects such as ESPRIT, an information-technology project, bring together companies from several countries. Lurking behind much of this thinking is the fascination of Western governments with–and fundamental misunderstanding of–the countless cooperative research projects sponsored by the Ministry of International Trade and Industry (MITI), projects that appear to have contributed to Japan's competitive rise.

But a closer look at Japanese cooperative projects suggests a different story. Japanese companies participate in MITI projects to maintain good relations with MITI, to preserve their corporate images, and to hedge the risk that competitors will gain from the project–largely defensive reasons. Companies rarely contribute their best scientists and engineers to cooperative projects and usually spend much more on their own private research in the same field. Typically, the government makes only a modest financial contribution to the project.

The real value of Japanese cooperative research is to signal the importance of emerging technical areas and to stimulate proprietary company research. Cooperative projects prompt companies to explore new fields and boost

internal R&D spending because companies know that their domestic rivals are investigating them.

Under certain limited conditions, cooperative research can prove beneficial. Projects should be in areas of basic product and process research, not in subjects closely connected to a company's proprietary sources of advantage. They should constitute only a modest portion of a company's overall research program in any given field. Cooperative research should be only indirect, channeled through independent organizations to which most industry participants have access. Organizational structures, like university labs and centers of excellence, reduce management problems and minimize the risk to rivalry. Finally, the most useful cooperative projects often involve fields that touch a number of industries and that require substantial R&D investments.

Promote goals that lead to sustained investment. Government has a vital role in shaping the goals of investors, managers, and employees through policies in various areas. The manner in which capital markets are regulated, for example, shapes the incentives of investors and, in turn, the behavior of companies. Government should aim to encourage sustained investment in human skills, in innovation, and in physical assets. Perhaps the single most powerful tool for raising the rate of sustained investment in industry is a tax incentive for long-term (five years or more) capital gains restricted to new investment in corporate equity. Long-term capital gains incentives should also be applied to pension funds and other currently untaxed investors, who now have few reasons not to engage in rapid trading.

Deregulate competition. Regulation of competition through such policies as maintaining a state monopoly, controlling entry into an industry, or fixing prices has two strong negative consequences: it stifles rivalry and innovation as companies become preoccupied with dealing with regulators and protecting what they already have; and it makes the industry a less dynamic and less desirable buyer or supplier. Deregulation and privatization on their own, however, will not succeed without vigorous domestic rivalry–and that requires, as a corollary, a strong and consistent antitrust policy.

Enforce strong domestic antitrust policies. A strong antitrust policy–especially for horizontal mergers, alliances, and collusive behavior–is fundamental to innovation. While it is fashionable today to call for mergers and alliances in the name of globalization and the creation of national champions, these often undermine the creation of competitive advantage. Real national competitiveness requires governments to disallow mergers, acquisitions, and alliances that involve industry leaders. Furthermore, the same standards for mergers and alliances should apply to both domestic and foreign companies. Finally, government policy should favor internal entry, both domestic and international, over acquisition. Companies should, however, be allowed to acquire small companies in related industries when the move promotes the transfer of skills that could ultimately create competitive advantage.

Reject managed trade. Managed trade represents a growing and dangerous tendency for dealing with the fallout of national competitiveness. Orderly marketing agreements, voluntary restraint agreements, or other devices that set quantitative targets to divide up markets are dangerous, ineffective, and

often enormously costly to consumers. Rather than promoting innovation in a nation's industries, managed trade guarantees a market for inefficient companies.

Government trade policy should pursue open market access in every foreign nation. To be effective, trade policy should not be a passive instrument; it cannot respond only to complaints or work only for those industries that can muster enough political clout; it should not require a long history of injury or serve only distressed industries. Trade policy should seek to open markets wherever a nation has competitive advantage and should actively address emerging industries and incipient problems.

Where government finds a trade barrier in another nation, it should concentrate its remedies on dismantling barriers, not on regulating imports or exports. In the case of Japan, for example, pressure to accelerate the already rapid growth of manufactured imports is a more effective approach than a shift to managed trade. Compensatory tariffs that punish companies for unfair trade practices are better than market quotas. Other increasingly important tools to open markets are restrictions that prevent companies in offending nations from investing in acquisitions or production facilities in the host country–thereby blocking the unfair country's companies from using their advantage to establish a new beachhead that is immune from sanctions.

Any of these remedies, however, can backfire. It is virtually impossible to craft remedies to unfair trade practices that avoid both reducing incentives for domestic companies to innovate and export and harming domestic buyers. The aim of remedies should be adjustments that allow the remedy to disappear.

The company agenda

Ultimately, only companies themselves can achieve and sustain competitive advantage. To do so, they must act on the fundamentals described above. In particular, they must recognize the central role of innovation–and the uncomfortable truth that innovation grows out of pressure and challenge. It takes leadership to create a dynamic, challenging environment. And it takes leadership to recognize the all-too-easy escape routes that appear to offer a path to competitive advantage, but are actually short-cuts to failure. For example, it is tempting to rely on cooperative research and development projects to lower the cost and risk of research. But they can divert company attention and resources from proprietary research efforts and will all but eliminate the prospects for real innovation.

Competitive advantage arises from leadership that harnesses and amplifies the forces in the diamond to promote innovation and upgrading. Here are just a few of the kinds of company policies that will support that effort:

Create pressures for innovation. A company should seek out pressure and challenge, not avoid them. Part of strategy is to take advantage of the home nation to create the impetus for innovation. To do that, companies can sell to the most sophisticated and demanding buyers and channels; seek out those buyers with the most difficult needs; establish norms that exceed the toughest regulatory hurdles or product standards; source from the most

advanced suppliers; treat employees as permanent in order to stimulate upgrading of skills and productivity.

Seek out the most capable competitors as motivators. To motivate organizational change, capable competitors and respected rivals can be a common enemy. The best managers always run a little scared; they respect and study competitors. To stay dynamic, companies must make meeting challenge a part of the organization's norms. For example, lobbying against strict product standards signals the organization that company leadership has diminished aspirations. Companies that value stability, obedient customers, dependent suppliers, and sleepy competitors are inviting inertia and, ultimately, failure.

Establish early-warning systems. Early-warning signals translate into early-mover advantages. Companies can take actions that help them see the signals of change and act on them, thereby getting a jump on the competition. For example, they can find and serve those buyers with the most anticipatory needs; investigate all emerging new buyers or channels; find places whose regulations foreshadow emerging regulations elsewhere; bring some outsiders into the management team; maintain ongoing relationships with research centers and sources of talented people.

Improve the national diamond. Companies have a vital stake in making their home environment a better platform for international success. Part of a company's responsibility is to play an active role in forming clusters and to work with its home-nation buyers, suppliers, and channels to help them upgrade and extend their own competitive advantages. To upgrade home demand, for example, Japanese musical instrument manufacturers, led by Yamaha, Kawai, and Suzuki, have established music schools. Similarly, companies can stimulate and support local suppliers of important specialized inputs–including encouraging them to compete globally. The health and strength of the national cluster will only enhance the company's own rate of innovation and upgrading.

In nearly every successful competitive industry, leading companies also take explicit steps to create specialized factors like human resources, scientific knowledge, or infrastructure. In industries like wool cloth, ceramic tiles, and lighting equipment, Italian industry associations invest in market information, process technology, and common infrastructure. Companies can also speed innovation by putting their headquarters and other key operations where there are concentrations of sophisticated buyers, important suppliers, or specialized factor-creating mechanisms, such as universities or laboratories.

Welcome domestic rivalry. To compete globally, a company needs capable domestic rivals and vigorous domestic rivalry. Especially in the United States and Europe today, managers are wont to complain about excessive competition and to argue for mergers and acquisitions that will produce hoped-for economies of scale and critical mass. The complaint is only natural–but the argument is plain wrong. Vigorous domestic rivalry creates sustainable competitive advantage. Moreover, it is better to grow internationally than to dominate the domestic market. If a company wants an acquisition, a foreign one that can speed globalization and supplement home-

based advantages or offset home-based disadvantages is usually far better than merging with leading domestic competitors.

Globalize to tap selective advantages in other nations. In search of "global" strategies, many companies today abandon their home diamond. To be sure, adopting a global perspective is important to creating competitive advantage. But relying on foreign activities that supplant domestic capabilities is always a second-best solution. Innovating to offset local factor disadvantages is better than outsourcing; developing domestic suppliers and buyers is better than relying solely on foreign ones. Unless the critical underpinnings of competitiveness are present at home, companies will not sustain competitive advantage in the long run. The aim should be to upgrade home-base capabilities so that foreign activities are selective and supplemental only to over-all competitive advantage.

The correct approach to globalization is to tap selectively into sources of advantage in other nations' diamonds. For example, identifying sophisticated buyers in other countries helps companies understand different needs and creates pressures that will stimulate a faster rate of innovation. No matter how favorable the home diamond, moreover, important research is going on in other nations. To take advantage of foreign research, companies must station high-quality people in overseas bases and mount a credible level of scientific effort. To get anything back from foreign research ventures, companies must also allow access to their own ideas–recognizing that competitive advantage comes from continuous improvement, not from protecting today's secrets.

Use alliances only selectively. Alliances with foreign companies have become another managerial fad and cure-all: they represent a tempting solution to the problem of a company wanting the advantages of foreign enterprises or hedging against risk, without giving up independence. In reality, however, while alliances can achieve selective benefits, they always exact significant costs: they involve coordinating two separate operations, reconciling goals with an independent entity creating a competitor, and giving up profits. These costs ultimately make most alliances short-term transitional devices, rather than stable, long-term relationships.

Most important, alliances as a broad-based strategy will only ensure a company's mediocrity, not its international leadership. No company can rely on another outside, independent company for skills and assets that are central to its competitive advantage. Alliances are best used as a selective tool, employed on a temporary basis or involving noncore activities.

Locate the home base to support competitive advantage. Among the most important decisions for multinational companies is the nation in which to locate the home base for each distinct business. A company can have different home bases for distinct businesses or segments. Ultimately, competitive advantage is created at home: it is where strategy is set, the core product and process technology is created, and a critical mass of production takes place. The circumstances in the home nation must support innovation; otherwise the company has no choice but to move its home base to a country that stimulates innovation and that provides the best environment for global competitiveness. There are no half-measures: the management team must move as well.

The role of leadership

Too many companies and top managers misperceive the nature of competition and the task before them by focusing on improving financial performance, soliciting government assistance, seeking stability, and reducing risk through alliances and mergers.

Today's competitive realities demand leadership. Leaders believe in change; they energize their organizations to innovate continuously; they recognize the importance of their home country as integral to their competitive success and work to upgrade it. Most important, leaders recognize the need for pressure and challenge. Because they are willing to encourage appropriate–and painful–government policies and regulations, they often earn the title "statesmen," although few see themselves that way. They are prepared to sacrifice the easy life for difficulty and, ultimately, sustained competitive advantage. That must be the goal, for both nations and companies: not just surviving, but achieving international competitiveness.

And not just once, but continuously.

Reading 13: National policies and domestic politics

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In 1945 Albert Hirschman published *National Power and the Structure of Foreign Trade,* a pathbreaking examination of the politics of trade. Set amidst the European intrigues of the 1930s, *National Power and the Structure of Foreign Trade* painstakingly demonstrated how countries could use trade to extract political and economic benefit from their trading partners. For Hirschman and the legion of scholars who followed in his footsteps trade was indeed economic statecraft, the continuation of politics by commercial means.[1]

It was a way of advancing state interests and gaining allies; of using the flow of goods and services to create political dependency and enhance state power.

At the turn of the twenty-first century, such arguments seem outdated already, positively quaint in an era marked now by global capitalism and 'boundaryless' firms.[2]

Yet despite the undeniable surge of international business, and despite a sweeping embrace of liberal economic policies, there is still more than a touch of relevance to Hirshman's argument and his work. Trade is still a political activity and the firms that conduct it are political actors. States still use trade to achieve noncommercial aims and firms can still get entangled in the pursuit of these goals.

Indeed trade, by its very nature, is a political event. Whenever firms move goods or services across international borders, they affect society on both sides of the transaction. They enhance industrial revenues, for example, or augment the comparative development of national economies or create dependencies—on resources, strategic inputs, or capital—that persist over time. Even though firms may have no explicit intentions along these lines, the impact is the same: by transferring resources and commercial activity across borders, firms also shift the distribution of rewards and power. And this, after all, is the very lifeblood of politics.

When international business takes the form of investment rather than trade, the effect is even more pronounced. For when firms from one country invest directly into the territory of another, they are physically transplanting the means of production from one place to another, taking with them the jobs, technology, taxes, and suppliers that their operation produces. The impact of this shift can be dramatic, so dramatic, indeed, that states frequently spend vast sums of money in an effort to woo multinational investors and make them stay.[3]

This is a far cry from the situation that prevailed earlier in the twentieth century, when nations derided multinationals as invaders and often entangled them in years of negotiation and yards of red tape. Yet both reactions reveal how important foreign investment can be for a host country, and thus how closely these countries are bound to regulate, and monitor, and administer investment flows. In the abstract, of course, foreign direct investment looks rather bloodless. It is an aggregate flow of capital and technology across international borders, a simple transfer of resources from one location to another. Yet under the surface lurk the same issues that intrigued Hirschman, and the same political notes. Investment means a movement of wealth, a movement of people, a movement often of ideas or technology or culture. All of these movements have political ramifications and all, therefore, are potentially subject to the long arm of domestic policy.

Formally, the interaction between domestic policy and international business runs in two directions.[4]

States erect policies that affect firms' ability to trade and invest across borders; and the actions of trading and investing firms affect the political climate of the states in which they do business. The relationship, of course, is interactive and changes overtime: states influence firms, and firms influence states, and both operate simultaneously in a number of domestic and international arenas.[5]

The present essay, though, concentrates on just one piece of this complex arrangement. Arguing that international business is essentially, incontrovertibly political, it describes the range of state policies that can shape and constrain the behavior of firms. Specifically, it examines five different kinds of domestic policy: trade policy, foreign direct investment, capital controls, regulation, and competition policy. This list is by no means exhaustive. Indeed, there is a far wider set of policies that shape the environment in which firms trade and invest. Yet these are some of the most common policies to affect firms, and some of the most important. The first section of this essay thus describes how policies tend to emerge in each of these areas; what objectives they are often directed towards; and how they affect the course of international business. The second section then moves to the politics behind the policies—that is, to an examination of how the policies that affect international business are created and by whom. A concluding section examines the emerging role of transnational groups in shaping and defining a country's national policies.

1.1 Trade policy

Of all the rules that impinge upon the conduct of international business, the rules of trade are perhaps the most obvious. Because trade so clearly crosses national borders and can affect a national economy so deeply, governments have nearly always tried to govern the trading economy and shape the performance of trading firms. While the recent advent of international institutions such as the GATT and WTO has blunted some of the sharper instruments of trade policy, governments nevertheless maintain a considerable arsenal of policy tools. They create rules that directly and indirectly affect the ability of firms to compete across borders.

At some level of abstraction, nearly any economic policy undertaken by the state can be seen as exerting an influence on trade. Any policy that affects relative costs, or demand, or labor markets can shift the international trading environment, favoring some firms at the expense of others. But below this broad macro level is a series of policies that target directly the conduct of trade. States use these policies for different ends, and with differing intensities. Sometimes their aim is explicitly to enhance the competitive performance of nationally based firms; sometimes, competitive advantage is wholly tangential to the state's policy aims. Whenever these policies are in force, however, firms contemplating either a trading relationship or a foreign investment need to investigate the commercial impact of these trading rules. Three kinds of rules demand particular attention: export controls, protectionism, and strategic trade policy.

1.2 Export controls

Export controls rank among the oldest tools of trade policy. Ever since the early days of mercantilist trade, states have tried to limit, from time to time, the goods that producers can ship across their borders. Occasionally these controls serve an economic object, insulating the domestic economy from the inflationary impact of excess foreign demand. More often, however, controls serve a distinctly political purpose. They are designed to prevent a rival state from gaining access to key resources and technology, or to punish a state for some perceived wrongdoing. In both of these instances, export controls are employed as a 'force short of war', a way for the state to enhance its geopolitical aims without having to risk military confrontation.

Customarily, export controls fall into one of two related categories. Sometimes they are part of a standard policy of restriction: a government will compose a list of 'strategic' goods (computers or encryption codes or, in one case, buttons) and a matching list of countries to which the export of these goods is prohibited. Such was the structure of CoCom (the Coordinating Committee), an informal organization of the United States and its post-war allies that regulated the export of military technologies and strategic resources to the countries of the Soviet bloc.[6]

In other instances, states impose specific sanctions or embargoes to protest the actions of a rival state. During the period of apartheid, for example, many countries prohibited their firms from exporting to South Africa. Politically motivated sanctions have also been applied to Chile (1970–3), El Salvador (1977–81), Iran (1979–81), and a host of other countries.[7]

Ideally, the aim of sanctions or export controls is to force the target country to change its behavior. In the process, however, these policies directly affect commercial conditions—in the target state, the sending state, and peripheral countries. For firms in the target, or recipient, state, the effects are obvious. Strategic imports are liable to disappear from the market, leaving importers and import-dependent firms at a loss, while massively increasing demand for locally available substitutes. Exporters from the sending states, meanwhile, will face an immediate decline in sales and the potential loss of long-term relationships. When the United States imposed sanctions against the Soviet Union in the early 1980s, for example, American farmers experienced a

precipitous decline in grain exports and General Electric lost a $175 million contract to provide rotors to a planned Soviet gas pipeline. Such losses, though, can clearly be a boon for firms in peripheral states; when GE and other US firms were forced out of the pipeline deal, European competitors readily stepped in.[8]

Fortunately, sanctions are a relatively rare phenomenon. But for the firms affected, their impact can be dramatic. Firms need, therefore, to keep a careful watch on political events that could lead to sanctions or other export controls. If they deal in strategic goods, or sell to highly volatile states, they need to think carefully about how to hedge their operations and what to do in case sanctions are imposed. Otherwise, they are likely to get caught, as was Conoco in 1995, when President Clinton cited national security concerns to block a $1 billion deal to develop Iranian oil fields.[9]

Firms also need to be aware of the political forces and particular rules that drive sanction policy; in the mid-1990s, a number of Canadian firms found themselves in violation of US law due to their trading activities with Cuba.[10]

An absurd situation, perhaps, but also a highly uncomfortable one, Finally, if firms are caught by sanctions or seek to benefit from them, they need to gauge the probable longevity of the controls. A short ‘signalling’ episode deserves a very different response than does an extended period of commercial and political strain.[11]

1.3 Protectionism

Protectionist policies are a common feature of the international economy. All states employ protectionism in one guise or another; all firms have felt its various effects. The challenge for managers is to understand as precisely as possible where protectionism lies, and how best to avoid or exploit its rules.

Sometimes protectionism is flagrant. In its oldest and most obvious form, protectionism is tariffs, quotas, and other mechanical barriers to trade. Because it wants to protect its domestic producers from the strains of international competition, or because it wants to nurture and support domestic production, the state imposes quantitative or price-based restrictions.[12]

Foreign firms hoping to sell into the protected market either have to fit in under the requisite quota, or see the tariff included in the cost of their product. Both responses, presumably, damage the competitiveness of foreign firms relative to their domestically based competitors. A similar relationship holds for less direct forms of trade protection. Under international pressure to reduce tariffs and eliminate quotas, many states resort to more discreet means. They offer research funding or export credits to their own firms, or impose regulatory conditions that disadvantage foreign firms against their domestic rivals. Such ‘nontariff barriers’ are legion, and the subject of intense international acrimony. Germany’s ‘health code’ for beer is said to bar foreign competitors, as is Italy’s definition of precisely what constitutes pasta. Canada’s regulation of cultural content limits penetration by US media firms, while Japan’s impenetrable distribution system acts to impede the entry of foreign products and retail outlets.[13]

Even rules that are entirely domestic in their intent can have subtle protectionist effects.

Yet protectionism, by itself, is not necessarily bad for firms. In fact, it often presents firms with distinct opportunities to mold and employ the rules to serve their own commercial interest. Consider the case of Lenzing AG, an Austrian rayon manufacturer that established an Indonesian joint venture in 1978. Like many developing countries at that time, Indonesia followed a strict policy of import substitution industrialization, levying high tariffs on all imported goods, and particularly on those essentials—such as clothing—that it hoped to develop internally. As the sole domestic producer of rayon, Lenzing was the happy beneficiary of Indonesia's protectionism. Between 1980 and 1994, revenues expanded by roughly 15 per cent each year. Similar examples abound. When Japan's automakers perceived an impending wave of protectionism in the United States, they invested aggressively and directly in the US market, pre-emptively leaping the tariff barriers and even increasing their total US market share. In related cases, the US imposition of quotas on Japanese television sets and steel proved a windfall for Korean manufacturers, who seized the market share left vacant by the restricted Japanese.[14]

1.4 Strategic trade policy

Essentially, strategic trade policy is old-fashioned protectionism nudged to a higher theoretical and industrial level. It rests on a series of well-formulated propositions about the national advantages of protecting certain large and critical industries.[15]

In these industries (such as semiconductors and aircraft) the presence of externalities and scale economies means that firms must be global to compete, and that only a handful of competitors will survive in the global marketplace. In these industries, therefore, trade approaches a zero-sum game. Either countries foster the growth of their own firms or they risk losing the industry entirely.

For firms in these industries, the politics of strategic trade policy are straightforward. If they want to compete, firms need to garner governmental support. In most cases, this support entails not only domestic assistance, but also a willingness to fight and negotiate at the international level. Thus the growth and globalization of the semiconductor industry saw the formation of a powerful and well-connected Semiconductor Industry Association in the United States, and the eventual negotiation of international agreements limiting Japanese sales of semiconductors in the US market.[16]

Similarly, the growth and commercial success of Europe's Airbus Industrie has undeniably been facilitated by governmental credit, sales assistance, and ongoing negotiations at the international level. Note that in both of these cases, firms from related industries are also significantly affected: component suppliers and airlines feel the impact of aircraft policies; and computer manufacturers are influenced by restrictions on semiconductor sales. Just like firms in the 'strategic' sectors, therefore, they need to heed the politics of trade policy, gauging the rules that will emerge and responding strategically to them.

1.5 Rules of foreign direct investment

The second type of rules that affect the environment of international business are rules of foreign direct investment. These are rules that influence the conditions under which firms can invest directly in the territory of foreign states.[17]

Historically, the rules and context of foreign investment have been driven by conflict. Fearful of the economic and industrial power of foreign investors (and particularly of Western multinational corporations), many states in the nineteenth and early twentieth centuries kept exceedingly tight reins over the companies that invested in their territory. Investments were negotiated on a case-by-case basis and the state retained a unique ability to wrest further concessions from foreign investors once their capital had been sunk into the country and their technologies rendered obsolete by the passage of time.[18]

States often also retained the right to expropriate or nationalize the property of foreign investors. Such occurrences were fairly common in the 1960s and 1970s.[19]

Recently, the use of such draconian measures has declined precipitously. Instead, hungry for the capital and technology of foreign firms, many states are anxiously competing to attract investors, offering them financial incentives and the promise of preferential treatment. This apparent about-face, however, does not mean that foreign investment has lost its political under-currents, or that domestic rules no longer affect the environment for investing firms. Foreign investment remains inherently political, and rules can have a dramatic impact on the success of investing firms.[20]

Rules shape the investment climate in a number of ways. First, even as states increasingly welcome foreign investments, they still customarily restrict it. As of 1994, not a single country in the world permitted an unrestricted right of entry to all sectors and activities.[21]

Many states maintain formal licensing procedures for foreign firms; most prohibit, or at least limit, investment in certain 'strategic' sectors. Japan, for example, limits foreign investment in the banking, insurance, radio, telecommunications, transport, fishing, and utilities sectors, and prohibits foreign firms from investing at all in its mining, oil, and gas sectors. The United Kingdom limits foreign participation in its radio, telecommunications, mining, fishing, and tourist sectors; it forbids foreign participation in its rail transport and public utility sectors.[22]

Second, even where investment is permitted, it may nevertheless be conditional—on the participation of a local joint venture partner, the import of certain technologies, or a promise to manufacture for export. IBM's initial entry into Japan, for instance, was made contingent on its low-cost licensing of patents to Japanese firms.[23]

More recently, in 1995, a dispute over technology transfer to China apparently cost Chrysler a potential $1 billion minivan deal.[24]

In other cases, states can influence foreign investment through operational restrictions, such as limits on the employment of aliens and specific performance requirements.

On the other hand, states can also use the rules of foreign investment to attract and advantage particular firms. In general, most states now comply (at least in principle) with international guidelines on national treatment. That means that states promise not to discriminate against foreign, as compared with domestic, firms. Compliance with the international guidelines, however, does not prevent states from offering specific incentives to potential investors. And thus states regularly strike preferential deals. They can offer preferential treatment on taxes; improved access to infrastructural goods such as water, transportation links, and electricity; or assistance in securing an appropriate labor force. Sometimes this preferential treatment is bundled into special investment zones, such as Malaysia's 'multimedia supercorridor' or the export processing zones (EPZs) of the Philippines. Sometimes preferential treatment is offered on an *ad hoc*, negotiated basis. And often it is local officials, rather than the central government, who have the most to offer.

For firms contemplating a foreign investment, the restrictions and incentives on foreign investment operate similarly. They shift the playing field, favoring some deals and opportunities while disadvantaging others. They force the investing firms to think strategically about how to avoid the limits imposed by domestic law as well as how to reap the benefits that the law and particular circumstances are capable of providing. Consider the case of Gerber Products Company. In 1991, Gerber was contemplating the acquisition of Alima S. A., a Polish food processing facility. Having just recently broken from decades of communist doctrine and Soviet domination, Poland was eager for foreign investment and rapidly rewriting its rules of commerce. Gerber found itself in the midst of this political change. There was still a long and tedious process of investment review, an equally long list of officials who needed to approve various pieces of the deal, and general confusion about the tax incentives available to foreign investors. Yet rather than running from this chaos, Gerber's management used it to their advantage. They negotiated at various levels throughout the government, struck tough bargains, and won most of the rule-based concessions they desired. In the process, they realized that their leverage lay in being first. Because Gerber was a high-visibility company with an apparent long-term interest in Poland, the Polish government was eager to package an attractive deal and structure its rules in a conciliatory fashion. Subsequent investors found the Polish government still responsive, but far less willing to negotiate the terms of their investment.[25]

In other cases, however, the politics of foreign investment can create a far more hostile environment and discouraging set of rules. Consider the United States in the late 1980s, when fear of Japan's growing economic prowess drove a heightened scrutiny of Japanese investment in the US market. In late 1986, Fujitsu fell victim to this scrutiny when it announced plans to acquire an 80 per cent interest in the Fairchild Semiconductor Corporation from its French parent, Schlumberger Ltd. The Committee on Foreign Investment in the United States (CFIUS), which investigated the matter, emphasized national security concerns, a rather dubious tack since the company was already under foreign ownership. Although CFIUS lacked the authority to block the sale, growing Defense Department involvement made all the parties increasingly uncomfortable. Under these circumstances, the investors'

only options were either to leave the market or fight their battles directly with those who made the rules. And that is precisely what the Japanese firms did. Some, like Fujitsu, just left, while others marched in effect on Washington, launching a powerful, expensive, and ultimately successful lobbying campaign.

1.6 Capital controls

At the end of World War II, nearly all countries imposed some level of control over the export of capital. Fearful of 'disequilibrating' swings in short term capital movements, they intermittently regulated how much capital investors could take abroad with them, and under what circumstances.[26]

In the 1990s, capital controls are far less common. Indeed, all developed countries allow free repatriation of capital invested abroad and, generally, the free transfer of profits and dividends from overseas subsidiaries.[27]

In the developing world, however, capital controls are more far prevalent. They constitute another area of rules that impinge upon the conduct of international trade and investment.

Essentially, countries use capital controls to buffer the domestic economy from the free-flowing forces of the international capital market. As this market grows in size and intensity, with over a trillion dollars streaming daily across national borders, developing countries occasionally find themselves caught between two opposing tensions. On the one hand, the globalization of capital flows reduces the efficacy of any unilateral rules on capital and risks isolating any country that attempts to stem or control the flow. On the other hand, though, the sheer force of the global market increases the financial vulnerability of a developing state.[28]

After Mexico's peso collapse in 1995, repercussions swept across the developing countries, causing Morgan Stanley's emerging market index to fall 14.91 per cent in just two months.[29]

The reverse situation is also possible. In 1996, Indonesia was overwhelmed by short-term capital flows and saw its money supply grow by a wholly unpredicted 30 per cent.[30]

To blunt the impact of such external shocks, developing countries often maintain a series of controls on capital and foreign exchange flows. As of 1996, 92 of the 156 countries classified by the IMF as 'developing countries' restricted, to some degree, the use of foreign exchange for the purchase of goods and services. Of these countries, 130 maintained restrictions on capital account (i.e. financial) transactions.[31]

While many of these controls are targeted most directly at short term, or portfolio, flows, they have a strong peripheral impact on flows associated with trade and foreign investment. They also tend to fall most heavily on foreign firms, since governments that grant licenses of foreign exchange typically distinguish between foreign and domestic applicants.

Where capital controls are in place, multinational firms need to include them as part of the strategic landscape, and respond to them accordingly. For countries that are economically volatile, firms also need to consider the

possibility of dramatic policy shifts. Take the recent case of China. In the early 1990s, China strictly regulated the amount of hard currency that foreign investors were allowed to repatriate. While promising to liberalize these restrictions over time, the Chinese authorities never pronounced either their precise timetable for reform or their conception of full liberalization. Some firms, lured by China's burgeoning markets and promise of reform, assumed these controls would soon disappear, or at least that sufficient hard currencies could be procured from the country's handful of permitted 'swap markets'. Many of these companies soon found themselves at odds in China, scrambling not only to repatriate funds, but even to gather sufficient currency to purchase the imports needed for their production. Other firms understood the full complexity of China's currency system, as well as the political difficulties that were likely to squash any rapid attempts to dismantle it. Accordingly, once they decided to go to China they went explicitly for the long term. Rather than trying to maneuver around the currency controls, they made a strategic decision to reinvest all Chinese profits in China, building local supply networks and deferring repatriation until the business was fully self-sufficient and the currency controls lifted.

1.7 Regulation

Unlike the rules of trade or foreign investment or capital controls, the rules of regulation do not adhere solely to transnational transactions. They are directed instead to the domestic economy, and to the mass of policy objectives that economic activity both facilitates and demands. Because these policies vary so widely across national borders, however, they are inherently important to the conduct of international business.

In theory, governments regulate in order to promote a public good or redress a public 'bad', known more formally as positive and negative externalities. They regulate to improve economic efficiency by correcting naturally existing market imperfections, or by controlling egregious excesses that the market has produced. They also regulate in order to guide market forces towards certain noneconomic, socially desirable ends: cleaner air, for example, or more effective medical treatments. To achieve these societal goals, regulators employ a multitude of policy tools: price caps; rate regulation; wage controls; health and safety standards; environmental reviews. In theory, again, regulators choose from among these options those policies that best advance their economic and social goals. In practice, regulatory policy is also often subject to the usual pulling and hauling of politics. Rather than running from regulators (as is often the impression), firms or other interested parties petition the state for regulations that advance their own position. This results in the well-documented practice of 'regulatory capture'.[32]

Whether driven by public goods or political maneuvers, however, the rules and politics of regulation affect foreign firms in a number of different ways.

First, they establish which specific industries are subject to regulation, and thus which firms will need to participate in a direct and ongoing relationship with the state. In some industries (pharmaceuticals, food processing, health care services) regulation is nearly universal. In others (mining, entertainment,

retailing, telecommunications), firms are heavily regulated in some countries and left to their own devices elsewhere. Thus, firms that are accustomed to working in a regulated environment in one country may find themselves in a wholly unregulated and competitive market in another country. And firms accustomed to the free market may find themselves in a heavily controlled environment once they cross national borders. In either case, foreign investment demands a considerable amount of commercial adaptation. Firms that thrive in an unregulated environment will have to learn to play by a different and more constraining set of rules, and to develop political ties with their new regulatory authorities. Firms that have grown up in a regulated market, by contrast, may suffer from the full force of competition and the absence of familiar regulators.

Second, even when firms move from one regulated market to another, the forms of regulation can still be radically different. Take the pharmaceutical industry. In the United States, it is regulated through a combination of patents, approval procedures, and strictly defined distribution. To sell prescription drugs, pharmaceutical firms must obtain the necessary patents, gain approval from the Food and Drug Administration, and then market their product to doctors, hospitals, and health maintenance organizations. When US pharmaceutical firms go to China, however, they encounter an entirely different regulatory structure. Patent laws are far less effective and 'theft' of prescription formulas quite common. Approvals come from two agencies, and the dispensing of drugs occurs not only through hospitals and doctors' offices, but also at a multitude of factory- and enterprise-run clinics. These differences in regulatory policy compel US pharmaceutical firms to adopt distinctly different commercial strategies in the Chinese market. They can still enter the market and do business there, but only if they reverse quite substantially their normal mode of operation.

1.8 Antitrust and competition policy

A final set of rules that impinge upon firms' foreign activities are rules of competition and antitrust. These are rules that provide the basic guidelines for market activity, rules that are deeply embedded in the political culture of a country and thus tend to vary widely across national borders.

The foundation for antitrust and competition policy lies with the economics of industrial organization and the belief that market forces can occasionally produce anti-competitive outcomes.[33]

Developed first in English common law and expanded during the heyday of the late nineteenth century American trusts, antitrust policy seeks to maintain the efficacies of competition by keeping capitalist firms from growing too large or working too closely with their would-be rivals. Essentially, antitrust policy is intended to prevent firms from exerting undue control over the markets in which they operate. It customarily targets several kinds of presumed anti-competitive behavior: predatory pricing; excessive market concentration; and collusion.[34]

Like regulation, antitrust is a form of state intervention directed almost entirely at the domestic market. States employ antitrust to gain what they believe to be a more efficient use of national resources, higher levels of

domestic growth, greater stability in prices, output, or employment, or a more equitable distribution of incomes. Sometimes governments also just use antitrust as a means to limit the reach of firms they perceive as being too large or powerful.[35]

None of these motives has any explicit implication for trading or investing firms. Insofar as antitrust affects the domestic environment of business, however, it peripherally affects any foreign firm operating within the domestic market. It forces foreign firms to play by particular and often unfamiliar rules of competition.

Arguably, the greatest impact is felt by foreign firms that move into the US market. Because US antitrust rules are amongst the most stringent in the world and because they are applied with varying levels of intensity by successive administrations, they are a constant source of frustration for foreign firms that operate in the US market. In 1994, for instance, the US Justice Department brought suit against Pilkington plc, a British glass making firm. The Justice Department accused the British firm of monopolizing a key technology through the use of restrictive licensing agreements. Even though these practices had little effect on the US market, the Justice Department claimed jurisdiction on account of Pilkington's 80 per cent ownership of Libby-Owens-Ford, a US-based firm.[36]

In a more spectacular and protracted case, the Justice Department has tried for decades to prosecute DeBeers, the South African diamond company that oversees the world's most successful cartel.[37]

Well aware of the long arm of US law, however, DeBeers has become somewhat of an expert on US antitrust policy, and has carefully structured its entire organization to avoid any entanglement with the US rules. Although the United States is the world's largest market for the diamonds DeBeers produces, the company has no corporate presence on US soil.

While the American cases present perhaps the starkest examples, competition policies in other countries also affect the prospects of foreign firms. And once again, the prospects are not necessarily bleak. Sometimes, antitrust and competition policy can provide dramatic opportunity for competitive advantage. In the European Union, for example, tightly enforced competition policies in the telecommunications and banking sectors have provided a windfall for foreign firms. In India, competition policies enacted since the mid-1990s promise to break the stranglehold of large local enterprises and open the way for enterprising foreign entrants. In both of these cases, the lessons are clear: changes in the rules of competition can fundamentally alter the relative competitiveness of firms operating within a given market.

1.9 Domestic politics

When firms encounter protectionism, or capital controls, or environmental regulation, it can often seem as if these policies have just descended from the heavens. Either that, or policies appear as some impenetrable relic, the remnant of earlier objectives or long-forgotten whim. And sometimes they are. Yet generally, the policies that affect international business are generated through some kind of a rational process and by particular, often even

predictable, sources. They are created, most importantly, by *politics*—by the struggle for power and interests that characterizes nearly all human societies. If firms want to understand the policies that are liable to affect their businesses, they need to consider as well the process by which these policies are established. They need, in other words, to understand the domestic politics of the countries in which they trade or invest.

So where do policies come from? And how are they created? It depends. In some countries, according to some scholars, rules emerge through a rational and predictable process of rent-seeking. Various interest groups express their preferences to a political system which arbitrates their interests and rewards those with the most votes, the greatest clout, or the staunchest coalition.[38]

Though this view of the political process is stark and almost certainly over-simplified, it rings true in many cases, especially those concerning the formation of trade policy in democratic states.[39]

Recall the Cuban trade embargo described above. Why does the United States persist in sanctioning trade with Cuba? Largely because there is a powerful domestic lobby in favor of the sanctions, and a relatively uncommitted and uncoordinated group of opponents. Precisely the reverse pattern characterizes US trade policy towards China. Here, the strongly held interests of large and diverse domestic firms consistently overwhelm the narrower interests of human rights and (occasionally) labor groups. To track the likely outcome of trade policy in either of these cases, one would need only to follow the interest group politics that surround them.

In other instances, rules spring much more directly from the will and power of the central leadership. For decades, policy in China was essentially the political desires of Chairman Mao; after his death, the mantle passed to Deng who, without Mao's monomaniacal fervor, nevertheless set the rules for China. Accordingly, analysts of China during this time focused almost exclusively on the leader's pronouncements and the personal cohort that surrounded him. For these, they knew, were the source of China's rules. A similar relationship holds whenever power concentrates in a single personality or faction: Stalin's Russia; Qaddafi's Libya; Hussein's Iraq; Suharto's Indonesia. If firms want to understand what drives the business environment in these countries, they need to understand the interests and desires of the leadership. If they want to modify the rules to suit their own interests, they need to go directly to the leader.

Such excessive concentrations of power, however, are increasingly rare. In most countries, power is split among various groups and agencies, and rules emerge from a continuous bargaining among them—from the 'pulling and hauling that is politics', to borrow Graham Allison's memorable phrase.[40]

The outcomes of these struggles depend on the institutional structure of the various agencies and the relative weights of power distributed among them. In the United States, for instance, some rules are controlled almost entirely by particular agencies (the FCC for broadcast television; the Justice Department for antitrust) while others (particularly trade policy) are more susceptible to legislative and electoral politics. In Japan, by contrast, the lines of bureaucratic discretion are both broader and more clearly demarcated. Powerful agencies such as MITI and MOF have, for decades at

least, been essentially removed from political vacillation and armed with rule-making and enforcement capabilities. For decades, therefore, firms that traded with or invested in Japan maintained the closest ties they could with these agencies, and watched carefully for any changes in their regulatory agenda.

A very different view of the rule-making process comes from left of the mainstream, from a band of scholars associated either with Marxism or with the expanding field of 'critical legal studies'.[41]

Though they vary widely in the scope and focus of their inquiries, these scholars essentially argue that rules follow power and that power, more often than not, clusters around wealth. Rules, these scholars argue, do not emerge from a tussle among interest groups or a personal agenda, or a bureaucratic process: they are simply set by those with an ability to control policy and a desire to maintain their own privileged position. It is easy to dismiss such claims as ideologically motivated, rather than empirically drawn. But in certain cases they ring true. Consider the United Fruit Company (UFC) and its successor, Chiquita Brands. For years, UFC was an indomitable force throughout the banana-producing world. It wrote the rules that met its needs and enforced them through local alliances and the strong arm of US diplomacy. So great was the company's power that it gave rise to the term 'banana republic'—an apt description for most of the region in which UFC held sway. Similar allegations have periodically been made against the US multinational oil majors, although the data here is more jumbled, and the rule-making story harder to substantiate. Nevertheless, it does seem clear that in some places and under some circumstances, clout can carry the rules. This possibility raises both obstacles and opportunities for foreign firms.

Another possibility that firms must consider is the paradoxical chance that rules simply won't matter, or even exist. Though such circumstances are rare, they do occur. Sometimes, countries or even industries stumble through stretches of anarchy, times when the rules that normally prevail are under attack, or in flux, or incapable of enforcement. In the aftermath of communism, for example, Russia underwent a massive legal and political transformation. The central institutions of the old regime—the overarching authoritarian party, the vast and centrally controlled bureaucracy, the network of state-run factories and collective farms—were dismantled as newly elected leaders strove to establish the basic institutions of democracy and market capitalism. Yet in Russia, the evolution of these institutions suffered sorely from social and political attack. The basic structure of the state remained ambiguous throughout the transition period and laws were widely and regularly disregarded. As a result, foreign firms hoping to do business in Russia faced a rule-less environment—and, in many cases, a commercial nightmare.

The Russian case is admittedly extreme. But it also demonstrates the critical link between the norms that prevail in a given society and the rules that emerge from it. One of the few relationships that both political scientists and legal scholars agree upon is that rules derive, at some basic level, from the norms that already prevail within a given society.[42]

If rules are imposed upon a wholly alien environment, enforcement will nearly always be hobbled by an inherently awkward fit. Thus the chaos of

Russia is made comprehensible by a history of dictatorship and centralized planning. When Western-style laws descend, as they did, into such an inhospitable environment, they simply don't take hold. The same is true, on a smaller scale, in China, where certain kinds of rules (particularly those pertaining to intellectual property and legal due process) run contrary to the deeply embedded norms of society. Formally, China offers full protection to both intellectual and physical property. It has documented laws and legal procedures which claim to protect copyrights, trademarks, and patented technologies. Yet numerous Western companies have encountered basic difficulties in preserving the sanctity of their property. McDonald's, for example, was informed in November 1994 that its 20-year lease of a 700-seat restaurant in Beijing was to be revoked after only three years to make way for an apartment complex; no compensation was offered until the restaurant chain won a court battle two years later. For Disney, intellectual property was completely insecure, with counterfeit goods so widespread that the company found it necessary to cancel a television show rather than promote a tide of illegitimate merchandise. Microsoft, too, has found it difficult to profit in the Chinese market due to widespread piracy of its popular software. In each of these cases, the firm's problems lay not with the letter of the law but rather with a deep-seated disinterest in the law's enforcement. The laws of China protect property, but the accepted and customary norms of interaction do not yet agree.

This gap between *politics* and *policy* is subtle but important. All national policy, it seems safe to conclude, is the product of domestic politics, of the struggle for power and interest that defines a national system and creates its rules. Yet not all of a country's political forces are encapsulated in its formal policies. There remain pockets of norms and beliefs and standards, informal rules that shape the business environment without actually dictating its terms. These informal rules are more difficult to codify than are national policies; they are rarely written down and lack the legal presence of laws. Yet they can be equally important in shaping a nation's behavior and its attitude towards trade and investment. In trying to understand the policies of any given country, therefore, firms must consider the full range of political action that resides there: the political forces that give rise to actual policy, as well as the quieter, dimmer, but no less powerful forces that shape the unwritten rules of business.[43]

1.10 The role of international forces

A final aspect of national policy comes from an unlikely source. It comes, indeed, from the international arena and from the growing array of external groups who claim some voice in a country's ostensibly internal affairs. Some of these voices, to be sure, have existed for centuries. States have always defined their rules of trade in relation to those of their neighbors; political alliances and enmities have long shaped the policy options available to any individual state.[44]

None of this has changed. What has happened in recent years, however, is that new actors have appeared on the world stage, armed with a distinctly international agenda and explicitly determined to shape the ways in which national rules are created and enforced.

The first of these developments is the advent of international institutions such as GATT and the WTO.[45]

Devoted to the expansion of global (or at least regional) trade, these institutions contain their own complex sets of rules and their own mechanisms for enforcement. As countries comply with internationally negotiated rules, they shift simultaneously their domestic environment for trade and investment. When, say, India conforms to GATT schedules for tariff and quota reduction, it opens its markets to an increased flow of foreign goods and removes the barriers that formerly relegated foreign trading firms to a distinctly uncompetitive position. Yet, India's acceptance of GATT rules also reduces the incentives of foreign firms to engage in tariff-jumping investment. A change in the rules of trade at the international level may thus necessitate a change in corporate strategy in a particular domestic market. A similar dynamic holds at the regional level, where rules promulgated by institutions such as the European Union or NAFTA can dramatically rearrange the contours of competition. Under NAFTA, for example, local content rules that previously adhered to the individual states apply instead across the North American region. So Japanese firms whose Mexican investments made sense in a pre-NAFTA world subsequently have to expand local sourcing in order to gain free access to the US and Canadian markets. And Canadian firms, previously unable to sell freely into Mexico without a Mexican presence, no longer face any constraint.

The second development is less obvious but perhaps even more powerful and enduring. It is the dramatic growth of nongovernmental organizations, transnational groups that form around a particular shared interest: in human rights, for instance, or environmentalism. These groups have no official political standing. They are sponsored neither by the home states of their members nor by international institutions such as GATT. Yet they can exert significant pressure on both national policy and corporate decisions.[46]

In a highly publicized 1995 incident, for example, Shell Oil decided to abandon a $16 million plan to dump a disused oil rig on the bottom of the Atlantic Ocean because Greenpeace had succeeded in inciting a massive consumer boycott against the company. In Indonesia, both the government and Freeport McMoran, the country's largest foreign investor, have scrambled to ward off environmental attacks on the vast Irian Jaya copper mine. China persistently revisits plans for its massive Three Gorges Dam at the behest of international pressure groups; so does India, with its own Sardar Sardovar Dam. Elsewhere, chemical companies have been besieged by allegations of laxer safety standards in their foreign facilities, and garment and footwear manufacturers have been accused of unfair and abusive labor practices in their Asian operations.[47]

Note that none of these accusations allege illegal conduct on the part of the corporate participants. And all of them focus on rules that apply primarily at the domestic level. Yet transnational groups are able, increasingly, to exert pressure on how these rules are created and enforced. Through a variety of tactics, they compel governments to revisit their own policies and cede, perhaps, a portion of their own power.[48]

1.11 Conclusions

At the turn of the twenty-first century, it is difficult to predict just how closely international forces will move towards the threshold of the state. Many suggest that the transformation is already upon us, with multinational corporations and international nongovernmental organizations moving to accept the power that was once bestowed only on states.[49]

In this view, the age of sovereignty is already passed, replaced by some new, possibly medieval, system where nations are obsolete and domestic politics fades to background noise in a crowded global system. Perhaps. Yet despite the most convincing arguments of post-Westphalian prophets, despite the undeniable growth of international pressure groups and multinational firms, reports of the death of sovereignty seem somewhat premature—even in the area of trade and investment. With the possible exception of capital controls, most nations still employ most of the policies described above. They favor certain domestic industries for protection or growth; they restrict or encourage foreign investment in particular sectors; they regulate commerce along a multitude of dimensions; and they determine the composition of 'fair' competition. Some of these policies may be shrinking somewhat in scope, some may be simultaneously negotiated and applied at the national level. But nations remain largely able and fully willing to impose their own policies on the firms that operate across their territory.

To be sure, the days of Hirschman may have passed. Trade is only rarely a tool of economic statecraft today, and the proliferation of overseas locations has softened the national identity of many multinational firms.[50]

Yet the underlying components of international business remain unchanged. Trading or investing still entails a shift of resources and economic potential across national borders; it still means that some groups will benefit at the perceived expense of others, or that some will receive favors or bear costs that are not distributed evenly. This is the most basic stuff of politics: the struggle over resources and power. So long as nation-states can intermediate in this struggle, they are likely to remain influential actors in the world of international business, shaping the rules that firms follow and the environment in which they compete.

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Notes

[1] Other works in this vein include Hawtrey 1930; Fichte 1845–6; List 1991.

[2] See e.g. Ohmae 1990, 1995.

[3] See e.g. Goodman, Spar, and Yoffie 1996; Spar 1998; Wells and Wint 1990.

[4] See Milner and Yoffie 1989.

[5] See Dixit and Pindyck 1994.

[6] For more on the history of export controls and CoCom, see Bergsten 1974; Mastanduno 1988 and 1992; and Bergenstein and Yoffie 1984.

[7] The most exhaustive study of sanctions and their efficacy is Hufbauer and Schott 1985.

[8] The European firms were also torn, however, since the US government threatened to retaliate by denying exports to any firms that did not comply with the US-initiated sanctions. Eventually, the US government backed down. For a full story of this episode, see Jentleson 1986; and Crawford and Lenway 1985.

[9] Sanger 1995.

[10] See Farnsworth 1996.

[11] Numerous scholars have tried to understand when sanctions are most likely to succeed, and how long they are likely to endure. See e.g. Hufbauer and Schott 1985; and Martin 1992.

[12] For a discussion of these various motives, see Chacholiades 1978; Goldstein 1988; and Yoffie 1983.

[13] For a particularly provocative argument of how the Japanese system discriminates against foreign firms, see Ballantine 1995.

[14] See Goodman, Spar, and Yoffie 1996.

[15] For an excellent brief summary of the theoretical argument, see Krugman 1987 and 1990; and Tyson 1992.

[16] See Yoffie l988.

[17] The literature on foreign direct investment is vast. Some important recent works include Kuemmerl1e 1999; Gliberman and Shapiro 1999; Dunning 1998; Buckley and Casson 1998.

[18] This relationship between the state and the investor has been classified as the 'obsolescing bargain', and subjected to a tremendous amount of academic scrutiny and debate. See Vernon 1971; Wells 1982; Moran 1974; and Kobrin 1987.

[19] See Kobrin 1985.

[20] For an interesting and balanced appraisal of the politics behind foreign direct investment, see Graham and Krugman 1992; Vernon 1977; Moran 1974. For a more extreme view, see Barnet and Muller 1974; and Hymer 1976. A full compendium of materials is available in Gomes-Casseres and Yoffie 1993.

[21] United Nations 1994.

[22] From United Nations 1994.

[23] US Congress, Office of Technology Assessment 1993.

[24] Wong 1996.

[25] For more on Gerber's investment in Poland, see Young and Spar 1993. For more on the general background of foreign investment in Poland, see Spar 1993.

[26] There is a voluminous literature on the progressive liberalization of capital controls among the developing countries, and the relationship between domestic policies and the increasingly global nature of capital markets. See e.g. Strange 1986; Kindleberger 1987; and Frieden 1991.

[27] United Nations 1994.

[28] For a further elaboration of this tension, see US Congress, Office of Technology Assessment (1993, 135–58).

[29] Flaherty 1995.

[30] Ali 1997.

[31] Vernon, Wells, and Rangan 1996.

[32] Analysts of this phenomenon include Stigler 1971; Posner 1974; Peltzman 1976; and Wilson 1974.

[33] Antitrust policy is thus deeply rooted in both political and economic theory. For more on this point, see Baron 1993. For more on the economic theory itself, see Posner 1976.

[34] There is a voluminous literature on the origins, intent, and implementation of antitrust policy. For a standard legal account, see Areeda 1967; for a simpler overview, see Shenefield and Stelzer 1993. More controversial works include Bork 1978.

[35] This is especially prevalent in the United States, where the Justice Department has occasionally been accused of using size, in and of itself, as an indicator of anti-competitive behavior.

[36] See Bradsher 1994. For other attempts by the US government to extend the extraterritorial jurisdiction of its antitrust policies, see Vernon and Spar 1989.

[37] For more on DeBeers and the international diamond cartel see Spar 1994.

[38] The outlines of so-called 'public choice theory' are laid out in Downs 1957; Buchanan and Tullock 1962; and Brown 1974.

[39] For more specific discussion of trade issues, see Baldwin 1986; Bauer, Pool, and Dexter 1972; Cline 1984; Destler, Odell, and Elliott 1987; Destler 1986; Lavergne 1983; Milner 1988.

[40] Allison 1999.

[41] Seminal works in this field include Kairys 1982; Unger 1976; and Horwitz 1977.

[42] For more on the sometime contentious distinction between law and norms, see Austin 1954; Shklar 1986; Schauer 1991.

[43] For more on these informal rules, see Spar 1999.

[44] Waltz 1979.

[45] For more on the advent and implications of the WTO, see Nicolaidis 1998; Gopalan, Moss, and Wells 1996.

[46] See e.g. Kapstein 1996; Collingsworth, Goold, and Harvey 1994; Leonard 1988. The ability of special interest groups to affect the foreign policy making process seems particularly marked in the United States, and particularly strong with regard to trade policy. See e.g. the comparative analyses in Katzenstein 1978; Ikenberry, Lake, and Mastanduno 1988; Risse-Kappen, Ropp, and Sikkink 1999.

[47] See Burns and Spar 2000.

[48] For more on this phenomenon, see Spar 1999.

[49] See e.g. Kobrin Ch. 7 in [Rugman and Brewer (eds) (2001) *Oxford Handbook of International Business*, Oxford, Oxford University Press], and elsewhere.

[50] See Ohmae 1990; for a contrasting view, see Pauly 1997.

Reading 14: Corporate strategy and parenting theory

Michael Goold, Andrew Campbell and Marcus Alexander

Goold, M., Campbell, A. and Alexander, M. (1998) 'Corporate Strategy and Parenting Theory', *Long Range Planning*, vol. 31, no. 2. April, 3018–314.

Justifying the parent

What we have learned

In multibusiness companies, the existence of a corporate parent, by which we mean all those levels of management that are not part of customer-facing, profit-responsible business units, entails costs. These costs, which include not only corporate overheads but also knock-on costs of corporate reporting in the businesses, are not balanced by any direct revenues, since the corporate parent has no external customers for its services. Furthermore, the business units often feel that they could be independently viable and, indeed, could do better without a corporate parent. This belief is given credence by the success of so many management buy-outs and spin-off companies.

The parent can therefore only justify itself if its influence leads to better performance by the businesses than they would otherwise achieve as independent, stand-alone entities. It must either carry out functions that the businesses would be unable to perform as cost-effectively for themselves or it must influence the businesses to make better decisions than they would have made on their own. In other words, the parent must add more value than cost to the businesses in the portfolio. The logic of the need to add value is now becoming more widely accepted.

However, there are still relatively few companies whose corporate strategies are based on powerful and convincing sources of value creation.

Why it matters

The challenge to corporate parents to justify themselves is important because it concentrates attention on whether and how the activities of the parent do add value. Rather than assuming the existence of a corporate parent, and then asking what the businesses can do for it, it places the onus in precisely the opposite direction. Now the key question is what the parent can do for the businesses, and whether it can positively demonstrate that its undoubted costs are more than offset by tangible benefits for the businesses. For many corporate parents, this has been a new perspective, and has led to the elimination of worthless, bureaucratic routines and a sharper concentration on those things that genuinely add value.

PROPOSITION: Many of the business units in multibusiness companies could be viable as stand-alone entities: To justify its existence, the corporate parent must influence the businesses collectively to perform better than they would as stand-alone entities.

Parenting advantage

What we have learned

Since corporate parents exist in a competitive world, in which ownership of businesses is transferable, adding some value is not a sufficient justification for the corporate parent. Ideally, the parent must add more value than other rival parents would: otherwise all stakeholders could be made better off through a change in ownership of the businesses to a superior parent.

The force of this objective is evident when companies face the possibility of a hostile acquisition. But, even if there is no imminent threat of a take-over, the aspiration to add as much value as possible to all the businesses in the portfolio should remain the ultimate goal. Businesses whose competitors have parents that add more value are at a disadvantage, which will eventually be reflected in their results.

Why it matters

The objective of adding more value than other rival parents, which we refer to as achieving "parenting advantage", is important because it provides a sound and powerful guiding objective for corporate strategy. All too often other objectives, such as achieving a faster rate of growth, balancing the portfolio between sectors or geographies, spreading risk, or simply survival, take precedence over parenting advantage, and lead to poor decisions. These other objectives are not in themselves wrong, but can lead corporate parents to forget that parenting advantage should be in centre stage and, hence, to take decisions that have nothing to do with added value, Parenting advantage should be the guiding criterion for corporate-level strategy, rather as competitive advantage is for business level strategy.

PROPOSITION: Parent companies compete with each other for the ownership of businesses: The objective of corporate strategy should be to add more value to the businesses in the portfolio than other rival parent organisations would.

Value destruction

What we have learned

Corporate hierarchies inevitably destroy some value. Apart from the obvious issue of corporate overheads, the main problems relate to ill-judged influence from senior managers and to information filters.

Since senior corporate managers must divide their time between a number of businesses in the portfolio, they will always be less close to the affairs of each business than its own management team. Inevitably, there is a danger that their influence will be less soundly-based than the views of the managers running the businesses.

Corporate hierarchies encourage business managers to compete with each other for investment funds and for personal promotion. Business managers therefore tend to filter the information they provide to divisional and corporate management, in order to present their businesses in the most favourable light. The information on which corporate managers must base their influence and decisions tends to be systematically biased.

The corporate centre also tends to be insulated from the sort of critical examination of cost effectiveness that other parts of a company routinely receive. Processes to assess net corporate value added are seldom well-developed, and power relationships in the corporate hierarchy mean that it is hard for the businesses to express their views openly. Central costs have a tendency to creep upwards and unproductive central interference goes unchecked.

Extra costs and negative influence are therefore pervasive features in all multibusiness organisational hierarchies and can only be offset by substantial value creation in targeted areas (see proposition 5). Research with a wide cross-section of companies in the US, Europe and Asia-Pacific has provided many specific examples of the phenomenon.

Why it matters

This observation is important because it should lead corporate parents to be more disciplined. They should avoid intervening in businesses unless they have specific reasons for believing that their influence will be positive. They should avoid extending their portfolios into new businesses unless they have good grounds for believing that they will be able to add value to them. They should seriously consider demerging or spinning off businesses that do not fit well with their skills. And they should be willing to downsize or eliminate corporate functions unless they have a clear added-value role.

This perspective provides a counterweight to ill-focused and over-ambitious corporate strategies. Previously, it was too easy for corporate parents to feel that simply going through the budget or capital expenditure review process "must be good for the businesses" or that diversifying into more glamorous or more rapidly growing sectors "must be good for investors". Now we know better, since we can see that good corporate strategy is as much about avoiding value destruction as it is about maximising value creation.

PROPOSITION: All multibusiness organisations have inherent and pervasive tendencies to destroy value: Corporate strategies should recognise these tendencies and be designed to minimise value destruction as much as to maximise value creation.

Lateral synergies

What we have learned

Since Ansoff's pioneering work on synergy, most businessmen and management thinkers have justified multibusiness companies because of the existence or potential for lateral linkages between their businesses. Managers at the centre have believed that their main role is the creation of synergy.

Our research, in contrast, has shown that parent managers are often pursuing mirages rather than real synergy opportunities, and that their interventions in the lateral relationships between businesses are often net negative rather than net positive. Furthermore, most "synergies" are available between independent businesses. A common parent is not necessary for two or more businesses to trade with each other, form alliances or joint ventures, licence technology, share benchmarks and best practice, pool negotiating power, share services, coordinate strategies or combine to create new businesses. Only a few synergies require a common parent to be effectively implemented. We have also observed that, for many multibusiness companies, the main source of added value stems from the relationship between the centre and each business as a stand-alone entity. We have, therefore, concluded that the value potential of synergies has been systematically over-rated by managers, academics and consultants.

Why it matters

This observation is important because it should change the mindset of corporate centre managers. Instead of "desperately seeking synergies", centre managers should be focusing their efforts only on those synergies that need central intervention, Instead of actively fostering a "one enterprise" or "one family" philosophy, centre managers should usually be encouraging "market place" relationships between business units. Instead of supporting "corporate centre creep", in which activities graduate to the centre in the name of synergy, centre managers should be vigilant in avoiding interventions unless they are clearly beneficial. This change in mindset will focus central management time on those synergies where the parent has a real role to play. It may also free time for value creating influence on businesses as stand-alone entities.

The change in mindset will also reduce the amount of value destroyed from "contamination". Contamination occurs when two businesses with different critical success factors are encouraged to work closely together in the name of synergy, and pollute each other's thinking and strategies. The loss of focus and muddled thinking that results can end up hurting both businesses.

PROPOSITION: The importance of lateral synergies in creating value in multibusiness companies has been systematically overrated: Corporate parents should pay relatively more attention to other sources of value creation, in particular their ability to improve performance in each individual business as a standalone entity.

Value creation

What we have learned

Value creation only occurs under three conditions:

- the parent sees an opportunity for a business to improve performance and a role for the parent in helping to grasp the opportunity
- the parent has the skills, resources and other characteristics needed to fulfil the required role
- the parent has sufficient understanding of the business and sufficient discipline to avoid other value-destroying interventions.

The most successful parents concentrate their attention on a few large areas of opportunity rather than attempting to intervene more broadly: in this way they can both develop distinctive skills that are specially suitable for the opportunities they are targeting and avoid dissipating their energies on issues where their contribution will have low or negative value.

Although competitive pressures should weed out businesses that persistently underperform, opportunities for a corporate parent to add value are not uncommon. They arise when

- weaknesses in business managers are causing underperformance
- the business managers face opportunities that even a competent management team will find difficult to seize without help from the parent
- the parent possesses some special resources that open up new opportunities for the businesses.

Our emphasis is on the skills or competences of the parent and the extent to which they fit with the opportunities in the businesses. It is parenting competences or resources, what the parent can do to make a difference, that explain successful corporate strategies. The broader notion of core competences, though useful, fails to highlight the role to be played by the parent.

Why it matters

The conditions for value creation are important, because they force corporate parents to think through what major opportunities for added value lie behind the corporate strategy. If no such opportunities have been identified, the strategy is bound to be fatally flawed.

They also help corporate parents to focus their activities. By giving prominence to a few major opportunities, corporate priorities can be clarified, irrelevant or value destroying activities can be eliminated, and time and attention can be devoted to building up the competences that the parent needs most. By not trying to do everything, the parent can become specially good at doing the things that really matter.

The objective of building parenting competences that fit well with particular opportunities also gives a sharper and more practical basis for competence development at the parent level. The often fruitless quest for nebulous core competences can be replaced with a much more targeted agenda for the skills, resources and processes that the corporate parent needs most.

Lastly, an emphasis on the distinctive insights and skills possessed by the parent is valuable because it underlines how much the success of any corporate strategy depends on the experience, capabilities and attitudes of the CEO and his team. The personal views and qualities of the CEO need to be a primary criterion in selecting the corporate strategy.

PROPOSITION: Value creation seldom occurs unless the.corporate parent perceives a few large opportunities for business performance enhancement, and develops distinctive skills, resources and influencing processes that address these opportunities: Corporate parents should focus their efforts on building special competences that fit the particular opportunities they are targeting.

Corporate centres and management processes

What we have learned

The desire to follow 'best practice' in corporate processes (such as planning, capital sanctioning, performance targeting and monitoring, etc.) has resulted in several popular but ephemeral trends. Similarly, a focus on the appropriate size of the corporate centre has, at different stages, encouraged managers to increase centralisation and the staffing of functions such as corporate planning and corporate HR, or, more recently, to reduce dramatically the numbers employed in such functions.

But managers adopting the general trends and supposed best practice of the day have frequently been disappointed by the results. Furthermore, parents who appear to be successful in adding value to their businesses have processes and corporate staffing levels that are both widely different from each other and, in many cases, that are out of tune with accepted best practice at the time.

These observations have taught us that personal skills and cultural fit are the key issues; that the skills of the individuals involved and the organisational heritage in which they operate can make essentially the 'same' process either effective or ineffective. We have also learned that the opportunities to add value with a given process or level of centralisation differ depending on the specific needs of the businesses in question. A 'one size fits all' approach to designing the nature and composition of the parent is inappropriate.

Why it matters

The importance of the size, staffing and design of the corporate office is not in question, and managers devote considerable attention to it. But if corporate functions and processes are not developed as an integral part of the overall value adding corporate strategy, they may be in line with general good practice, but lead to little or no improvement in performance. Equally, it is far more important for parent managers to possess idiosyncratic skills that are suitable for the parenting opportunities they are targeting than for them to be abreast of all the currently fashionable general management trends. Worse still, changing from existing arrangements to make them fit better with general–good–practice may undermine value creation that is currently being achieved due to the special circumstances of the portfolio

and the managers running it. Without a clear focus on selected parenting opportunities, simply going through the motions, however professionally, is as likely to destroy value as create it.

PROPOSITION: Corporate centres, functions, and processes designed to achieve general best practice lack sufficient focus to achieve outstanding results: They should be designed more idiosyncratically to fit with the specific opportunities targeted by the corporate-level strategy.

Diversity

What we have learned

For many years, it has been felt that highly diverse multibusiness companies must be more difficult to manage than less diverse companies. An extensive stream of academic research has sought to examine the comparative performance of "related" and "unrelated" diversification strategies, where "relatedness" was measured in terms of technologies, markets and customers.

Yet the evidence has not provided conclusive support for the intuitively appealing idea that related corporate strategies should outperform unrelated ones. And the performance of companies such as Hanson, BTR and KKR in the 1980s and of Virgin and GE in the 1990s provide specific counter-examples. "Relatedness" seems to be neither a necessary nor a sufficient condition of a successful multibusiness strategy.

During the 1980s, a new approach to measuring diversity began to emerge. Prahalad and Bettis suggested that the mindsets and skills of the corporate team provided the constraint on how much diversity was manageable. There was a "dominant logic" that tended to be applied across the whole portfolio, irrespective of the strategic characteristics of each business. The Ashridge Strategic Management Centre notion of "management styles" also suggested that each corporate team had a well-defined approach that it brought to bear on all the businesses in the portfolio.

More recently, we have pushed these ideas further, arguing that diversity is best measured in terms of the differences in parenting needs and opportunities between businesses in the portfolio. Businesses with different critical success factors require parenting that is sympathetic to these differences, and businesses with different opportunities for parental value creation require different parenting skills and resources that are suitable for realising the opportunities in question. Our research has shown that successful corporate parents have portfolios of businesses that are relatively homogenous in terms of parenting needs and opportunities, and that many corporate strategy disasters can be explained in terms of straying into businesses that turned out not to be responsive to the dominant parenting approach of the company.

These findings show why conventional measures of relatedness have proved imperfect predictors of corporate performance, since they do not focus on the fit between the businesses and the parent. The successes of the Hansons, the KKRs and the Virgins are easy to appreciate in terms of parenting opportunities and fit, but incomprehensible in terms of relatedness as conventionally defined.

Why it matters

A valid means of measuring diversity provides vital guidance to corporate parents who may have been impressed by the current vogue for "focusing on core businesses", but are unsure how to determine which businesses should be included in the core. Now we can see that corporate parents should aim to focus their portfolios around businesses with similar parenting needs and opportunities, for which the parent either has or can build suitable parenting skills and resources. These are the businesses in which the parent is likely to be able to add the most value; we refer to them as "heartland" businesses. To avoid excessive diversity, corporate parents should focus their portfolios on heartland businesses.

PROPOSITION: Past measures of diversity based on conventional concepts of relatedness have proved unsatisfactory: To avoid excessive diversity, corporate parents should build their portfolios around businesses with similarities in terms of parenting needs and opportunities.

Stretch and fit

What we have learned

Some critics regard Ashridge Strategic Management Centre's approach to corporate strategy as too cautious. Our emphasis on the pervasiveness of value destruction, the need for a close fit between parenting capabilities and business needs, and the dangers of excessive diversification, they claim, prevents companies from seeing the potential of radical new strategies with stretching goals. And, without stretching ambitions, companies become slow moving, flabby and lacking in motivation.

We accept the need for "stretch" as well as. "fit". Our research supports the desirability of a continuous search for new opportunities and a commitment to refining and extending parenting skills. We recognise both the excitement of fresh challenges that cannot easily be met and the stultifying effects of an unwillingness to alter the *status quo.*

But we are also realists, We have observed how frequently corporate strategies fail because parents are overoptimistic about their ability to build new skills and understand new types of businesses. We have researched numerous diversification attempts in which there were gross underestimates of how much time and attention it would take for the parent to get to grips with the new business. As a result, we believe that much of the advice that companies receive about rejuvenation, growth ambitions, and long term survival causes managers to launch initiatives that are foolhardy rather than bold. At the least, stretch should be tempered with realism when corporate strategies are being developed, and a balance should be maintained between stretch for new opportunities and fit with the parent's existing skills.

Why it matters

A recognition that stretch should be balanced by realism is valuable. It should prevent complacency and encourage innovative ideas, while at the same time helping to eliminate many of the more extreme disasters of

excessive corporate ambition (Sony in Hollywood, Exxon in office equipment, Daimler-Benz in white goods, Saatchi and Saatchi in management consulting, . . .).

A company with low growth or declining core businesses faces three options. It can aggressively seek a new "heartland" with "platform" initiatives (investments in new or different businesses designed to speed the learning of new parenting skills). It can experiment with "edge of heartland" investments, in the hope of evolving towards a broader heartland which offers more potential. Or it can decide to focus on its mature core and be the best in a limited field. Whereas many advisers and managers rule out the last option as defeatist, we believe it is often a reasonable choice. In a dynamic economy, new rising organisations will always be balanced with others that decline. Helping some businesses decline gracefully, without too many development attempts, may be as important as helping other businesses to broaden their portfolios and set ambitions for the next century.

Moreover, companies that do push forward into new businesses will prosper more if they choose those that are compatible with parenting skills that they have or can develop. Many parent organisations are "stretching" their skills too far in pursuit of new opportunities, when they would do better to choose a narrower range of businesses where greater "fit" can be created.

PROPOSITION: Many corporate parents are overambitious about the speed with which they can build new skills and understand new types of businesses: Good corporate strategies should maintain a balance between "stretch" for new opportunities and "fit" with the parent's existing skills.

Business unit definition and corporate structure

What we have learned

Business units represent the basic building blocks in any multibusiness company. The boundaries around the business units

- establish what groups of activities will receive the focused attention of a single management team, and will be aggregated together for performance measurement and reporting purposes
- determine what entities will report to the corporate parent and, conversely, what entities the corporate parent will need to add value to
- establish the scope for lateral synergies by determining what activities fall within each unit, and hence what the opportunities are for units to link with each other.

Business unit definitions can either protect activities from the corporate parent's attention or expose them to it—thereby inhibiting or opening up the possibilities for the parent either to create or destroy value. Business unit definitions have a profound impact on the behaviour and aims of business managers and on the size and nature of parenting opportunities. Inappropriate business definitions lead to compromised business strategies and missed opportunities for parental value creation.

In companies with intermediate parenting levels, such as divisions, the grouping of businesses into divisions is also important. Lack of clarity on

the added value role of different levels, groups and individuals within the parent leads to redundant cost, confusion, and reductions in net value creation. Where the parenting tasks are shared between different individuals, their respective responsibilities also need to be clearly defined and complementary. Getting the unit definitions and corporate structure right is an important precondition for a successful corporate strategy.

Why it matters

No-one doubts that business unit definition and corporate structure are important topics. Typically, they are high on chief executives' agendas. But a perspective on these issues that stresses value creation and the role of the parent is much less common; history, personal ambition and corporate politics often seem to be the major considerations. Instead, careful analysis of the advantages of breadth versus focus in business definition and of the impact of different structures on corporate value creation should underpin these organisational choices.

PROPOSITION: Business unit boundaries and corporate reporting structures have a profound impact on both the value creation opportunities and the value destruction risks for the corporate parent: Decisions on unit definitions and corporate structures should be determined by careful analysis of their likely impact on net value creation, not by history, ambition and politics.

Future research challenges

We see four priority areas for future research:

1 How companies can build the parenting skills that enable them to grow into new businesses.
   - By what means have corporate parents that have presided successfully over radical changes in their portfolios learnt new competencies?
   - How much time, investment and change (e.g. people change) is needed to develop a portfolio into new business areas?
   - Is it possible to distinguish in advance those new business growth ambitions that will be achievable from those that will be a bridge too far?
   - What are the chances of success with new business initiatives, and how can the odds be improved? Is it possible to identify those companies that would be better off trimming their development ambitions, breaking up or focusing more tightly?
   - Which development paths are most successful? Are there lessons to be learned from successful developers?

2 How to manage the internal and external boundaries of the corporation to create value, and in particular how to create value without full ownership.
   - How can the boundaries between business units, and between the company and third party organisations, be managed most effectively?
   - What effect do different ways of defining business units have on corporate value creation?
   - What is the impact of ownership versus joint venture versus alliance versus relational long-term contracts?

3 Better understanding of the organisation structures and capabilities needed to implement corporate strategies successfully.
   - What are the best ways to divide up tasks between different levels, groups and individuals in complex parent organisations?
   - How should corporate headquarters be designed to support the corporate strategy and to avoid being driven by empire-building or bureaucratic expansion?
   - How can the skills needed to implement a given corporate strategy be defined as fully and clearly as possible? What is the best way to develop these skills?
   - What career paths best prepare a manager for a role as corporate parent? From what pools of managers should parent managers be selected and how can the quality of these pools be enhanced?

4 More precise means of measuring the net value added by the corporate parent.
   - What techniques are being used or can be developed to identify and quantify more precisely the ways in which the parent adds and subtracts value?
   - What are the best measures of value to use?

Reading 15: Extract from 'Related diversification, core competences and corporate performance'

Constantinos C. Markides and Peter J. Williamson

Markides, C. C. and Williamson, P. J. (1994) 'Related diversification, core competences and corporate performance', *Strategic Management Journal*, vol. 15, 149–165.

A fundamental part of any firm's corporate strategy is its choice of what portfolio of businesses to compete in. According to the academic literature, this decision should reflect the 'superiority' of related diversification over unrelated diversification (e.g., Ansoff, 1965; Bettis, 1981; Lecraw, 1984; Palepu, 1985; Rumelt, 1974; Singh and Montgomery, 1987). This is because related diversification presumably allows the corporate center to exploit the interrelationships that exist among its different businesses (SBUs) and so achieve cost and/or differentiation competitive advantages over its rivals. But despite 30 years of research on the benefits of related diversification, there is still considerable disagreement about precisely how and when diversification can be used to build long-run competitive advantage (e.g., Hoskisson and Hitt, 1990; Ramanujam and Varadarajan, 1989; Reed and Luffman, 1986). In this paper we argue this disagreement exists for two main reasons:

1 Traditional measures of relatedness provide an incomplete and potentially exaggerated picture of the scope for a corporation to exploit interrelationships between its SBUs. This is because traditional measures look at relatedness only at the industry or market level. But as we explain below, the relatedness that really matters is that between 'strategic assets' (i.e., those that cannot be accessed quickly and cheaply by nondiversified competitors.[1] Therefore, to accurately measure whether two businesses are related, we need to go beyond broad definitions of relatedness that focus on market similarity; we need to look at the similarities between the underlying strategic assets of the various businesses that a company is operating in (see also Hill, 1994).

2 The way researchers have traditionally thought of relatedness is limited. This is because it has tended to equate the benefits of relatedness with the static exploitation of economies of scope. While we would not deny that economies of scope are an important short-term benefit of related diversification, we believe the real leverage comes from exploiting relatedness to create and accumulate *new* strategic assets more quickly and cheaply than competitors (rather than simply amortizing existing assets—i.e., reaping economies of scope). To predict how much a strategy of related diversification will contribute to superior, *long-run* returns it is necessary to distinguish between four types of potential advantages of related diversification.

(a) the potential to reap economies of scope across SBUs that can share the same strategic asset (such as a common distribution system);

(b) the potential to use a core competence amassed in the course of building or maintaining an existing strategic asset in one SBU to help improve the quality of an existing strategic asset in another of the corporation's SBUs (for example, what Honda learns as it gains more experience managing its existing dealer network for small cars may help it improve the management of its largely separate network for motorbikes);

(c) the potential to utilize a core competence developed through the experience of building strategic assets in existing businesses, to create a *new* strategic asset in a *new* business faster, or at lower cost (such as using the experience of building motorbike distribution to build a new, parallel distribution system for lawn mowers—which are generally sold through a different type of outlet);

(d) the potential for the process of related diversification to expand a corporation's existing pool of core competences because, as it builds strategic assets in a new business, it will learn new skills. These, in turn, that will allow it to improve the quality of its stocks of strategic assets in its existing businesses (in the course of building a new distribution system for lawn mowers, Honda may learn new skills that allow it to improve its existing distribution system for motorbikes).

We term these four potential advantages of related diversification 'asset amortization,' 'asset improvement,' 'asset creation' and 'asset fission' respectively.

We will argue that the long-run value of a related diversification lies *not so much* in the exploitation of economies of scope (asset amortization)—where the benefit is primarily short-term—but in allowing corporations to more cost efficiently expand their stocks of strategic assets. Relatedness, which opens the way for asset improvement, asset creation and asset fission, holds the key to the long-run competitive advantages of diversification.

This means that in most cases, similarities in the *processes* by which strategic assets are expanded and new strategic assets are created are more important than static similarities between the strategic assets that are the *outcome* of those processes. Firms that are diversified across a set of 'related markets' where the strategic assets are either few, or the processes required to improve and create them are context-specific cannot be expected to outperform unrelated diversifiers.

The measure of relatedness

The strategy of related diversification is considered superior to unrelated diversification because it allows the firm to exploit interrelationships among its different business units. Specifically, the corporate center in related diversifiers is expected to *identify* important assets residing in any one of its SBUs and then *transfer* these assets and *utilize* them in another SBU.

Canon's deployment of technology from its camera SBU in developing its photocopier business is a good example.[2]

Even though the advantages of the strategy of related diversification are usually cast in terms of the cost of differentiation benefits that arise from the cross-utilization of the firm's *underlying assets*, the actual measurement of relatedness between two businesses often does not even consider the underlying assets residing in these businesses. Relatedness has been traditionally measured in two basic ways (e.g., Montgomery, 1982; Pitts and Hopkins, 1982): (i) using an objective index like the entropy index of SIC count (e.g., Caves *et al*., 1980; Jacquemin and Berry, 1979, Palepu, 1985) which assumes that if two businesses share the same SIC they must have common input requirements and similar production/technology functions; and/or (ii) using a more subjective measure such as Rumelt's (1974) diversification categories which consider businesses as related '… when a common skill, resource, market, or purpose applies to each.' (Rumelt, 1974: 29).

We do not doubt that the traditional measures could be acceptable proxies for what they are trying to measure. In fact, if these measures did not suffer from any *systematic* bias, one would consider them as a 'good enough' way to substitute for a costly and time consuming ideal measure. However, they do suffer from one systematic bias. Consider a firm using the strategy of related diversification so as to exploit the relatedness of its SBU-level assets. Suppose, however, that the SBU-level assets that the corporate center is trying to exploit are not 'strategically important' (as defined below). For example, suppose that the asset services that Firm X provides to an SBU by cross-utilizing the assets of a sister subsidiary are such that any other firm can easily purchase on the open market at close to marginal cost. In that case, even if Firm X achieves short-term competitive advantage through exploitation of economies of scope, it will not really achieve any sustainable competitive advantage *over time*; other firms will quickly achieve similar positions by purchasing similar asset services. The opportunity for a diversified firm to amortize the costs of running a trucking fleet by sharing it across two SBUs is often a case in point. If nondiversified firms could buy similar trucking services from a common carrier (which itself achieves the economies of scope across customers) at close to marginal cost, then there would be no competitive advantage to diversification even though the two markets were closely 'related' according to traditional measures like SIC similarity.

This implies that any measure of relatedness should take into consideration not only whether the underlying SBU-level assets of a firm are related, but also consider whether these assets are a potential source of competitive advantage. Even if the traditional measures of relatedness do a good job in capturing the relatedness of the underlying assets, they *consistently* ignore the evaluation of whether these assets are 'strategic' assets; and they do so because in measuring relatedness, they do not *explicitly* consider the underlying assets.

Strategic assets

To win competitive advantage in any market, a firm needs to be able to deliver a given set of customer benefits at lower costs than competitors, or provide customers with a bundle of benefits its rivals cannot match (Porter, 1980). It can do so by harnessing the drivers of cost and differentiation in its specific industry. For example, if scale is an important driver of cost leadership then those firms that operate large-scale plants will outperform their subscale competitors. However, to effectively exploit these cost and differentiation drivers, the firm needs to access and utilize a complex set of tangible and intangible assets. For example, to reap the benefits of scale economies in production, it may require the services of tangible assets like a large-scale plant and intangible assets like the skills to manage this scale facility effectively and distributor loyalty to support a constant high volume of sales.[3]

Given that a particular set of asset stocks is necessary to allow a firm to exploit cost and differentiation advantages, the crucial question for a firm is: 'How can I access these assets?' A firm can secure these required asset services in a number of ways. It may obtain them with the *endowment* which establishes the business. A company established to exploit a proprietary technology, for example, often receives a valuable patent asset from its founder. It may *acquire* the assets on the open market, or contract directly for the services of an asset (as in the case of an equipment lease). It might access the required asset services by *sharing* the asset with a sister SBU or an alliance partner. Finally, it may *accumulate* the required asset through a process of combining tradeable inputs with existing asset stocks and learning by doing (Dierickx and Cool, 1989).

Firms that possess assets which underpin competitive advantage will earn rents (Rumelt, 1987). To the extent that competitors can identify these rent producing assets, they can decide between two alternative ways in replicating this competitive advantage: they may seek to imitate the assets through one of the four mechanisms above, or they may try to substitute them with other assets which can earn similar rents by producing equivalent or superior customer benefits. *The assets on which long-term competitive advantage critically depends (strategic assets) are, therefore, those that are imperfectly imitable and imperfectly substitutable* (Barney, 1986; Dierickx and Cool, 1989).

The importance of asset accumulation processes

The conditions above imply that assets which are readily tradeable cannot act as sources of long-term competitive advantage (Williamson, 1975). Similarly, assets which can be quickly and/or cheaply accessed through endowment, acquisition or sharing can only provide competitive advantage which is short-lived. In the long run, internal accumulation is likely to be the most significant source of imperfectly imitable and imperfectly substitutable assets. This is because most assets will be subject to erosion over time (see e.g., Eaton and Lipsey, 1980). Customer assets like brands, for example, will decay as new customers enter the market or former customers forget past experience or exit the market. The value of a stock of technical know-how will tend to erode in the face of innovation by competitors. Patents will

expire. Thus, assets accessed through initial endowment or an initial asset base shared with another SBU will tend to lose their potency as sources of competitive advantage over time unless they are replenished by internal accumulation processes.

Moreover, even when an asset can be accessed through acquisition, alliance, or sharing, it is quite likely that the existing assets available will not perfectly fit the requirements of the market they will be used to serve. Existing assets generally need some adaptation to a specific market context and integration with existing asset bundles. Internal asset accumulation processes therefore play a role in molding assets which an SBU accesses externally into a competitive, market-specific bundle.

Regardless of whether the initial stock of strategic assets within an SBU is obtained by endowment or acquisition, or accessed through sharing, therefore, the long-term competitive advantage of a firm will largely depend on its ability to continuously adapt and improve its strategic assets to meet market-specific demands and to create new strategic assets that it can exploit in existing or new markets.

If these asset accumulation processes were frictionless and firms could speed them up at little cost, then it would be difficult for a firm that gained an initial advantage in respect of a set of assets (e.g., through endowment, sharing or first mover experience in a new, growing segment of the market) to maintain this lead. In practice, however, there are many impediments which prevent laggards from replicating or surpassing the asset positions of the leaders. Dierickx and Cool (1989) identify four separate categories of these impediments to asset accumulation: time compression diseconomies, asset mass efficiencies, asset interconnectedness and causal ambiguity.[4] These impediments also lie behind the concept of barriers to mobility (Caves and Porter, 1977) and Rumelt's 'isolating mechanisms' which include property rights on scarce resources, lags, information asymmetries and other sources of friction in processes of asset imitation (Rumelt, 1987).

When the process necessary to accumulate an asset suffers from one or more of these impediments, all firms will face higher costs and time delays in building it. This will restrict their ability to satisfy their market by offering the differentiation or cost advantages that the elusive asset would underpin. Impediments like time compression diseconomies, asset mass efficiencies and asset interconnectedness, however, will impose higher costs on later entrants to a business, making it more difficult for them to catch up with first movers and established firms who have had longer to accumulate nontradeable assets. Diversifiers entering a market for the first time against established firms would therefore suffer a handicap from late arrival, other things being equal.

It may be, however, that by deploying its existing core competences a diversifier can overcome some of these frictions. By drawing on its existing competence pool, such a corporation may be able to imitate valuable, nontradeable assets, or accumulate new, substitute ones, or create entirely new strategic assets more cheaply and quickly than competitors who lacked access to similar core competences: to grow new trees more rapidly and more cheaply by drawing on a common, existing root stock. Likewise, by properly deploying core competences between business units, a diversified

corporation may also be able to maintain or extend its competitive advantage in its existing businesses through its ability to augment its nontradeable, market-specific assets more quickly and cheaply than its competitors. This is especially important in market environments that are undergoing significant change. Even firms with massive asset bases will lose their competitive advantage if they are unable to develop the new, strategic assets necessary to serve a changing market.

Core competences as catalysts in the 'production function' of strategic assets

If strategic assets are the imperfectly imitable, imperfectly substitutable and imperfectly tradeable assets necessary to underpin an SBU's cost or differentiation advantage in a particular market, then core competences can be viewed as the pool of experience, knowledge and systems, etc. that exist elsewhere in the same corporation which can be deployed to reduce the cost or time required either to create a new, strategic asset or expand the stock of an existing one. Competences are potential *catalysts* to the process of accumulating strategic assets. If the firm knows from past experience how to efficiently build the type of distribution network which will improve the competitiveness of its product (i.e., the 'competence' in building a suitable type of distribution network exists), then it will be able to put the necessary asset in place more quickly and cheaply than a firm which lacks this competence. Competences may also act as catalysts to the processes of adapting and integrating assets that an SBU has accessed through acquisition, alliances or sharing. Prahalad and Hamel (1990), for example, cite the case of NEC's competency in managing collaborative arrangements as an important factor in their ability to access and then internalize technological assets and skills from their alliance partners.

This catalytic role of competences in the 'production function' for building assets which are nontradeable, nonsubstitutable and difficult to accumulate is illustrated in Figure 1. Inputs include time, readily tradeable assets, existing nontradeable assets and the catalyst to the construction process: competences.

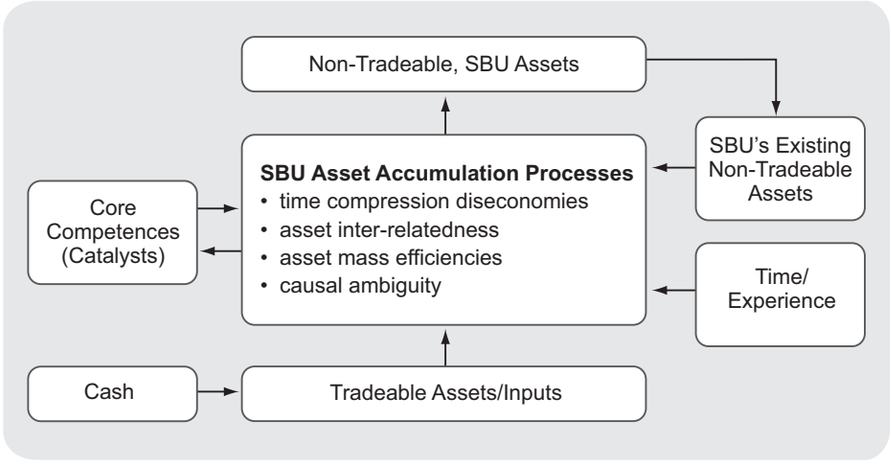

Figure 1: Core competences and the 'production function' for assets

The obvious next question is: where can a firm get hold of the competences that would allow it to speed up its rates of asset accumulation, adaptation and integration? The first place to look is the open market. But competences themselves often have characteristics which render markets inefficient as a mechanism for exchange. Characteristics such as information impactedness and scope for opportunism make competences, like other intangible assets, difficult to sell at arms-length (Williamson, 1973; Caves, 1982, Ch. l). This leads to excess capacity in competences which cannot be easily utilized by seeking buyers in the open market. Unique competences developed by an SBU through learning by doing therefore risk becoming 'imprisoned' in that unit, even though they could be potentially valuable catalysts to the process of asset accumulation in other businesses (Prahalad and Hamel, 1990).

Compared with the problems associated with trading competences in the open market, it is often more efficient to transfer competences between businesses using conduits *internal* to a single organization (Williamson, 1975). Such internal mechanisms include posting staff from one business unit to another, bringing together a corporate task force with individuals from a number of businesses to help solve a problem for one of them, and passing market intelligence or other information between SBUs which could act as catalysts to asset accumulation.

Not all of the competences of a corporation which can act as catalysts in expanding the asset base of a new or existing SBU, however, will make an equal contribution to improving the competitive advantage of an SBU. Honda's competence in building networks of dealers for consumer durables may speed up the rate and improve the cost at which it can build an effective, specialized distribution network for its new lawn mower product. But if a competitor could effectively substitute this by a distribution agreement with one or two national retail chains, the Honda Corporation's competence may afford its lawn-mower SBU little or no competitive edge. Likewise, if a rival could acquire a suitable network at a competitive price, or obtain access to one through a strategic alliance, access to Honda Corporation's competence might provide its related SBU with little or no competitive advantage. In both of these cases, while the competence is both available and transferable, it does not lead to the creation of a strategic asset that is both hard to substitute and difficult to imitate.

By contrast, Honda's competence in small petrol engines may enable its lawn mower SBU to quickly and cost effectively bring a superior product to market, backed by a superior production process. If competitors had no way of matching the resulting buyer benefits, except by spending a great deal of money over a long period of time, Honda's engine design organization and the combination of its manufacturing hardware and software would represent extremely potent strategic assets for the lawn mower SBU once they were in place. So access to Honda's engine competence would be a very significant source of competitive advantage for its lawn mower SBU.

We therefore have two conditions which must be satisfied for internal transfer of competences between SBUs to create advantage for the corporation:

1 it must be more efficient to transfer the competence internally between businesses in the same group than via an external market;

2 the competence must be capable of acting as a catalyst to the creation of market-specific assets which are nontradeable, nonsubstitutable and slow or costly to accumulate, thereby acting as a source of competitive advantage for the recipient SBU.

The larger the efficiency advantage of internal transfer, and the more costly the resulting asset is to accumulate, the greater the advantage to be gained from shifting a competence from one business unit to another existing or new SBU.[5]

Notes

[1] It is important here to clarify the difference between 'strategic assets' and 'core competences.' Strategic assets are assets that underpin a firm's cost or differentiation advantage in a particular market and that are imperfectly imitable, imperfectly substitutable and imperfectly tradeable. These assets also tend to be market-specific. An example would be Honda's dealer network distributing and servicing its motorbikes. On the other hand, core competences are the pool of experience, knowledge and systems, etc. that exist elsewhere in the same corporation and can be deployed to reduce the cost or time required either to create a new strategic asset or expand the stock of an existing one. Thus Honda's experience in building competitive dealer networks for a particular class of consumer durables would be an example of a core competence. Each of these networks (one for motorbikes and another for lawn mowers, for example) would be a separate strategic asset: 'different trees, sharing the same (core competence) root stock.'

[2] An extension of this argument has been proposed by Hill (1988): the corporation will be in a better position to exploit the interrelationships among its businesses if it is *structured* appropriately. Hill finds that related diversifiers are better served by the CM-form organizational structure than the M-form structure.

[3] See Verdin and Williamson (1994) for a fuller discussion of the link between Porter's cost and differentiation drivers and the assets on which exploitation of these drivers depend.

[4] *Time compression diseconomies* are the extra cost associated with accumulating the required assets under time pressure (the cost of compressing an activity in time). For example, it may take more than twice the amount of marketing to achieve in 1 year the same level of brand awareness as an established competitor may have been able to develop over a period of 2 years (other things equal). *Asset mass efficiencies* refer to the fact that some types of assets are more costly to accumulate when the firm's existing stock of that asset is small. It is more difficult, for example, to build the customer base of a credit card when it has few existing users. *Asset interconnectedness* refers to the fact that a lack of complementary assets can

often impede a firm from accumulating an asset which it needs to successfully serve its market. *Causal ambiguity* refers to the impediment associated with the uncertainty of pinpointing which specific factors or processes are required to accumulate a required asset (the precise chain of causality is ambiguous).

[5] The role of organizational structure in allowing a firm to exploit the benefits of related diversification is explored in more detail in Markides and Williamson (1993).

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Reading 16: Decision processes

Chris Gore, Kate Murray and Bill Richardson

Gore, C., Murray, K. and Richardson, B. (1992) 'Chapter 1: Decision Processes' in Gore, C., Murray, K. and Richardson, B. *Strategic Decision-Making*, London, Cassell.

For the modern business organization ensuring that decision-making is as effective as possible is extremely important. Effective decision-making enables companies to achieve their objectives in an efficient manner and provides a means of establishing working systems of operation and control. However, decision-making involves more than the choice of some preferred alternative. It also involves what can be described as a process[1] that leads up to the choice situation and continues after the choice has been made. If the process can be improved and appropriate methods can be used during the process then decision-making itself will improve. The starting point in understanding decision-making is the development of this process view of decision-making. If decision processes are to be efficient, however, they must be placed within a rational context; this chapter, therefore, also explains the concept of rationality and its limitations and modifications.

The objectives of this chapter are to:

- define a decision;
- identify different levels of decision-making;
- explain rationality in decision-making;
- provide a general decision process model;
- describe some strategic decision process models;
- summarize the literature on decision processes;
- highlight the importance of the methodological approach used to model a decision;
- relate theory to practice so that decision-making can be improved.

What is a decision?

Mintzberg[2] defined a decision as 'a specific commitment to action', so it includes all purposeful behaviour that concludes with a commitment to do something rather than merely to talk about it. Whether or not this definition includes a decision to do nothing is unclear, although it is unlikely because Mintzberg talks of a commitment of resources. Other writers[3] argue that a decision to do nothing needs to be included, as long as it is part of a rational process leading to a conscious choice between alternatives. A decision is made even if the alternative is to do nothing. As will be seen in Chapter 6, it may be vital to consider the zero alternative as a part of the decision. However, as Janis and Mann[4] point out, a no-choice option is frequently selected to avoid conflict or to maintain the status quo and so reduce uncertainty. In such cases there is a decision to do nothing rather than

something – but the decision is less than rational, for a full consideration of alternatives has not been made.

Harrison's[5] definition of a decision as 'simply a moment in an ongoing process of evaluating alternatives for meeting an objective' describes a decision as the moment of choice. It presupposes that a decision follows a number of distinct stages or that there is a decision-making cycle. It also assumes that behaviour is purposeful in that objectives are set and attempts are made to meet them, and so it sets the 'decision' within a wider decision process, whereas a broader concept of a decision may encompass the whole of the process of decision-making itself.

Levels of decision-making

It is useful to divide up the generic activity of decision-making into classes of decisions which have common features. In this way appropriate decision processes and methods can be adopted for the different classes.

One such classification is provided by Simon,[6] who has suggested that all decisions can be divided into two groups (see Figure 1). First, there are programmed decisions. These can be readily mapped on to a diagram or a computer program and are 'repetitive and routine, to the extent that a definite procedure has been worked out for handling them' (p. 6). Secondly, there are decisions that are non-programmed. These are so complex that the system they follow cannot be predetermined, as each decision is unique so that 'there is no cut and dried method for handling the problem' (p. 6), and its complexity and novelty require a customized solution. Drucker[7] has suggested names for these categories of decisions: 'generic' and 'unique'. Generic decisions are routine, deal with predictable cause and effect relationships, use defined information channels and have definite decision criteria. There is frequently reliance on rules and set procedures to handle such decisions. Unique decisions are novel and require judgement and creativity, since they are complex and are characterized by incomplete information and uncertainty.

Another classification, by Ansoff,[8] is into strategic decisions, administrative decisions and operating decisions. The importance of these attempts at classification is demonstrated by Ansoff, because he shows their implication for management. The first category is a subset of Simon's non-programmed and Drucker's unique decisions, and is concerned with objectives and long-range plans, which are usually the province of top management (see Figure 1).

Ansoff divides Simon's programmed and Drucker's generic decisions into administrative decisions, the area of middle management, and operating decisions, the area of lower management. The latter are concerned with routine decisions and can be explained by rules, methods and procedures, whereas administrative decisions are more complex and concerned with control, motivation and organizational systems. This subdivision of programmed decisions is a more realistic approach that identifies useful classifications for management methods. Chapter 4 will illustrate that one of the roles performed by organizational structure is to separate out these decisions to appropriate levels of management. Lower-level decisions are

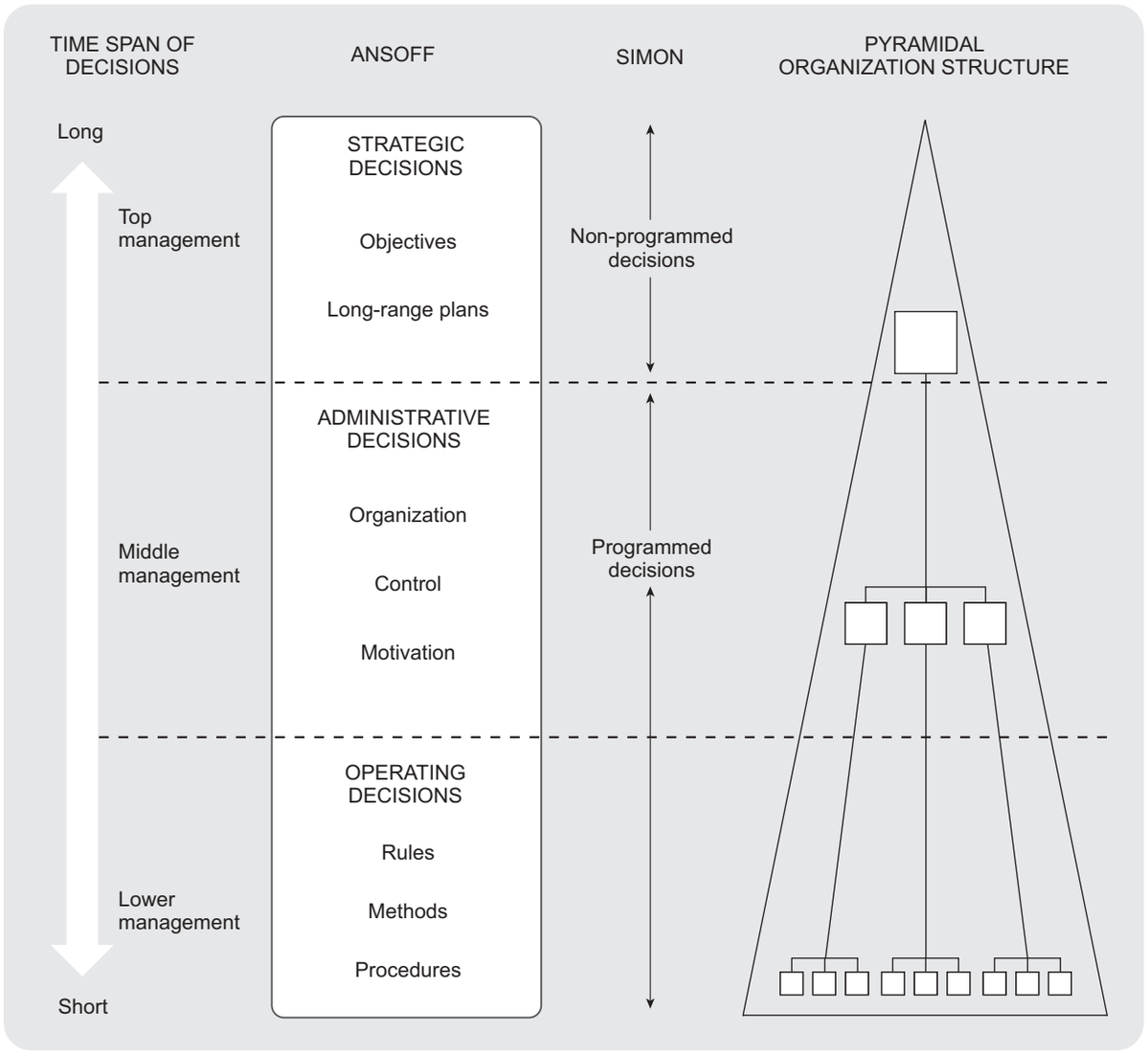

Figure 1: Levels of decision-making

those that may be programmed by firms such as automatic re-ordering decisions linked to stock levels. Such decisions may be delegated but control can be maintained by the use of decision rules.

The disadvantages of this very sequential approach to the categorization of management decisions are highlighted by Mintzberg.[9] He suggests, on the basis of empirical evidence, that a strict classification of decisions misses important aspects of how complex decisions are made. Many strategic decisions emerge as a result of numerous small low-level decisions, which he calls an emergent strategy (see Figure 2). Additionally, intended strategic decisions can lead to unrealized strategies because of problems of interpretation or implementation at different levels of decision-making.

Drawing on his study of the National Film Board of Canada, Mintzberg[10] suggests that in practice intentions are not always realized – objectives are not met, in Harrison's terminology. What does emerge is a strategy as a result of individuals or groups learning from past mistakes or developing new ideas independently. If successful, these are taken up in other parts of the organization. The process is similar to Quinn's logical incrementalism.[11]

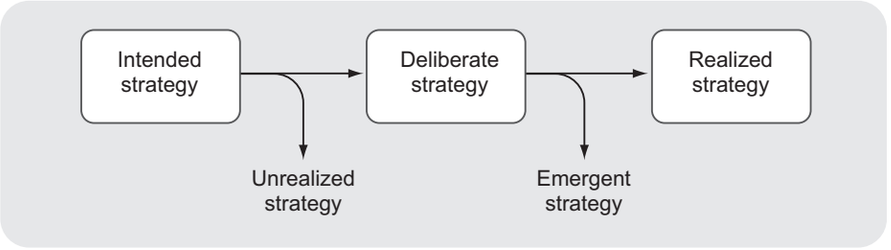

Figure 2: Mintzberg's emergent strategy

Source: Mintzberg,[9] p. 162.

This implies that lower-level decisions, in Drucker's or Simon's terms, can affect higher-level decisions and can actually be the source of these types of major organization-wide decisions.

In practical terms the distinction between different levels of decision-making will also lead to some classification problems. For example, IBM's decision in the UK to review its smoking at work policy does not fit easily into any category. It was a unique decision affecting all employees and having long-term implications, but it could not really be called a strategic decision. However, it was not programmable, for there were no precedents, and it took years to come to fruition. The decision to implement a partial ban in the UK is now being used by IBM in other parts of the world, such as the USA and France, and so it can now be classified as an administrative decision.

Rational decision-making

Whatever the type of decision, it is important to consider the extent to which it may be described as rational.

The term 'a rational decision' as it relates to a business organization has its roots in neo-classical economics, and refers to a decision based on a logical process of adopting means to achieve a particular end or objective. Objectives may include the firm's desire to maximize its profits, or an individual's desire to maximize his or her utility. According to Parsons[12] an act is rational if: (a) it is orientated to a clearly formulated unambiguous goal or set of values which are logically consistent; and (b) the means chosen to achieve the goal use the best available information. The term 'rational' does not denote approval or disapproval of the objective; rather it refers to the method of achieving the objective.

Rationality in economics is an assumed mode of behaviour by the economic actors involved and, together with a number of other assumptions, allows the construction of closed models which have predictive ability within their limited confines. For example, these ideas can be applied to the theory of the firm to provide an economic profit-maximizing model. To learn about rationality let us examine this model and consider the assumptions made. It requires:

1 An economic objective that can be quantified and that maximizes the utility of the decision-maker.

2 Transitive and consistent preferences of decision-makers for their objectives.

3 Unlimited information processing abilities by those involved and an ability to see their own self-interest and act accordingly.

4 Well defined mutually exclusive alternatives.

5 Perfect estimates of outcomes and calculations of the expected value of each alternative, which may include an estimate of the probability of each outcome.

6 Selection of the alternative that maximizes 'expected utility'.

7 Unlimited information and so no time or cost constraints.

Using these assumptions microeconomics then constructs models that form the basis of market analysis. These assumptions are gross over-simplifications of the real world and thus economic analysis proceeds to construct more complex and realistic models by relaxing them. This approach of starting with simple but unrealistic models and moving towards more complex and correspondingly more realistic models provides a useful approach to the construction of decision models.

As the assumptions of rationality described above provide a basis for this book's approach to rationality in decision-making it is worth while to examine them in greater detail. The assumptions fall into two groups. Assumptions 1, 2 and 3 refer to conditions about the individual decision-maker and the remainder are features of the decision environment. If all of these conditions were met the decision-maker could take fully rational decisions. A clear view of a simple objective could be found. All the alternatives to achieve it would be considered and the best possible alternative chosen. In the real world, however, such full rationality cannot be achieved. Taking each assumption in turn it is possible to see their shortcomings and to suggest ways of overcoming them.

Assumption 1 presumes an economic, quantifiable, maximizing objective. In organizations there are frequently multiple objectives, which may be qualitative as well as quantitative. However, it should always be possible to state some of a business organization's objectives in quantitative terms, as will be seen in Chapter 2.

Assumption 2 of the rational model is that of stability of preferences over time. This assumption anticipates that the evaluation of outcomes will remain stable across time. However, people are constantly learning and adapting their behaviour in the light of their experiences. An implied assumption is that of a fixed time horizon at the moment of choice, but the decision-maker has to live with the consequences of the decision in whatever state of the world actually materializes. This is not attractive to many people and partially accounts for avoidance of decision-making or for a desire to reduce the time span involved. This also explains the popularity of decision rules in financial investments, such as the payback method of investment evaluation, which emphasizes the speed of capital return, and the relative unpopularity of the net present value technique, which evaluates the total investment taking the full period of the investment into account.[13]

Assumption 3 assumes unlimited information processing. It does not, therefore, allow for people's limited cognitive ability, which according to Simon[14] creates 'bounded rationality'. Thus limited knowledge and limited brain power mean that a full evaluation of all possibilities is never carried out, so optimal solutions to complex problems are not found. Furthermore, they may not be necessary; for example, in 'teaching' a computer to play chess, the approach of accepting only satisfactory moves was followed with considerable success.

Also, people do not relentlessly pursue self-interest, and aspirations are modified in the light of experience. Self-interest is not seen only in economic terms but also in social, political and psychological terms. Behaviour can only be seen as 'rational' in the context in which it occurs and there is not a logically derived 'rational' set of behaviours to suit all situations. Philosophically this stance has been taken to its logical conclusion by Oakshott, who points out that at one time bloomers were argued to be the rational style for cycling![15] However, it is difficult to decide just how far Simon wishes to go in his analysis of 'bounded rationality'. The logical philosophical conclusion of the argument does not fit happily with his other work, which is always logical and rationally argued, and his interest in artificial intelligence, which implies a mechanistic mapping of human behaviour after due allowance for the satisficing tendencies of people. It would seem that mechanisms adapted to cope with limited cognitive ability are frequently satisfactory and a satisficing approach might be a way of achieving the most rational outcome in a particular case.

Assumption 4, of the existence of well-defined mutually exclusive alternatives, is affected by information availability and frequently all alternatives are not well defined. As the world is uncertain it is impossible to know if all alternatives have been ascertained. It is often too expensive to explore all possibilities, and sequential consideration of alternatives together with satisfying behaviour means that once an alternative is found which seems satisfactory then often the search will cease. In a study at Leicester Polytechnic of 280 decisions taken by organizations it was found that in 38 per cent of cases no alternative to the solution accepted was investigated. Other alternatives were screened out by the time the choice stage had been reached. This approach is understandable, because it is frequently very expensive to develop a number of custom-made alternative solutions, but it is not advocated. If only one alternative solution can be fully investigated decision-makers must clearly specify objectives and ensure that alternative potential solutions have been evaluated as fully as possible before being abandoned. It needs to be recognized that decision choices are frequently effectively made before the choice stage in a decision is reached.

Assumption 5 requires quantification of information, which is not always possible. Estimates of the expected value of the alternatives considered can be made, but because of the information problems these must often be more in the nature of guesstimates and sometimes alternatives must be compared on qualitative criteria. For example, the quality of a product is measurable over various dimensions but it also depends on people's perceptions of it. Much work in management accounting, marketing and personnel is directed at quantifying seemingly qualitative concepts.

Assumption 6 assumes that decision-makers are fully aware of the benefits arising from a decision and choose the alternative or outcome which provides the maximum benefit. The problem of specifying and quantifying objectives, of the stability of preferences and of the costs of information are all relevant here.

Assumption 7 expects that time and information are never limited and that information is inexpensive to acquire. In many real-life situations the opposite conditions prevail. Much information is gathered in a dynamic and complex world in which it is impossible to know everything, so there is always an element of risk. Knight[16] distinguished between risk and uncertainty. A risky situation is one in which possible outcomes are known and their associated probabilities are also known, but which will occur is not known. Uncertainty exists if possible outcomes are known but not their probabilities. Ignorance occurs if possible outcomes are not known. Using this classification, because many business situations begin with all possible outcomes not being known, businesses are operating in a situation of ignorance! However, information can be gathered to turn a situation of ignorance into one of uncertainty and then to one of risk. More recently, Moore[17] has described risk as 'a scenario in which possible losses are present' (p. 2) and suggests that risk in a business situation has two aspects: the probability of loss occurring and the possible loss level relative to the starting asset base. So the amount of information to be gathered depends on the size of the possible loss if a mistake is made and on the costs of information collection.

Mechanisms for coping with risk or uncertainty due to lack of information include, according to Simoń[18] and Cyert and March,[19] establishing an aspiration level that is felt to be a satisfactory outcome. Once this level is reached or a method of achieving it is discovered, no further search is made. The aspiration level concept allows people to reduce information search and evaluation of alternatives, and requires fewer estimates of the probabilities of the states of the environment. It does, of course, lead to suboptimal decision-making. According to Hogarth,[20] limited human information processing capacity arises from selective perception of information, the nature of processing, processing capacity and memory limitations.

Another problem is that perception of information is selective to the extent that only one-seventieth of what is present in the visual field can be perceived at one time. Anticipation plays a large part in what is actually seen, so that sometimes 'people only see what they want to see'. Processing is sequential, for people cannot simultaneously integrate a great deal of information. The order in which information is received will determine the sequence and may bias judgement. However, constant small adjustments as the result of new information lead to satisfactory results in a stable environment; only if it is unstable or given to sudden periods of instability will bad decisions result. People's processing capacity works on a heuristic rather than an optimal basis. Simple decision rules remove the need to consider all information and speed up the process, but can lead to inconsistent choices and to the exclusion of vital information. Memory capacity is limited and memory seems to work by a process of associations that reconstruct past events, unlike a computer, which accesses information in its original form. Reconstruction is useful, for it enables people to

organize data into 'patterns', investing them with meaning, and so enables them to remember far more than would have been possible if the data were random.

The existence of these violations of the assumptions required for full rationality necessarily means that we cannot expect decisions or decision processes to be fully rational. What has to be achieved, therefore, is an understanding of the constraints that these violations present, so that the decision process can be made rational within the bounds of these constraints. Thus, if time is at a premium all possible alternatives may not be considered, but as many as the time allows will be, so that the decision will not be arbitrarily made.

In a world where there cannot be full rationality, models of how to make a decision can be of help. These models can be thought of in terms of a spectrum, from the very general to the more specific. The remainder of the book takes us through an examination of these models, starting with the general models of decision processes.

Strategic decision processes

A decision process is concerned with the whole range of activities involved in making a decision, not merely the point of decision. It encompasses everything from the initial stimulus of a need for a decision through to the feedback from surveying events as a result of the decision taken. If the process more clearly approximates the rational model then decisions will be better than if a haphazard approach is adopted, and where applied within firms will lead to an improvement in the process of decision-making and so to a better fulfilment of specified objectives.

Mumford and Pettigrew[21] point out that decisions, especially strategic decisions, are concerned with the allocation of resources in terms of both finance and manpower. These important decisions affect organizations' political structures, and the status and position of those involved. A judicious application of rational principles, including knowledge of practical situations and likely behavioural influences, therefore, will lead to improved decision-making and better business performance.

Before discussing the decision-making process in detail it is worth outlining the advantages of analysing a firm's decision process and trying to create 'good' processes. Scrutiny of a decision process model in the context of actual decision-making approaches enables decision-makers to concentrate on the individual functions within a whole decision. This can lead to greater effectiveness within a decision process of, for example, the search for useful information or the selection of a strategic development. Furthermore, viewing the total process enables decision-makers to consider the interrelationships between the different functions, and enables the dynamism of the total process to be understood so that the decision-maker can direct and control the process. Above all, however, the prescription of a quest for good decision processes is based on the belief that paying attention to the way decisions are made will improve the quality of decision-making and management within the firm.

There is little agreement among writers on decision-making processes about the number of decision-making stages or about what each stage involves, but this is not surprising given the heterogeneity of decision situations, particularly for small firms. Table 1 summarizes a number of writers' approaches by marking the stages that they mention. No writer mentions all the stages explicitly, although they may be included implicitly. It can be seen that as the literature has developed over time the number of stages included has increased, so that recent writers mention more stages than, say, Simon,[6] who suggested in 1960 that the decision-making process consisted of three major elements: finding occasions for making a decision (classified in Table 1 as 'need for a decision'); finding possible courses of action ('develop alternatives'); and choosing among the courses of action ('choice'). Mintzberg[2] in 1976 defined a decision process 'as a set of actions and dynamic factors that begins with the identification of a stimulus for action and ends with a specific commitment to action' (p. 246). He then identified several different processes as a result of the observation of 25 strategic decisions, which had in common three stages: identification, development and selection. The first corresponds to 'need for a decision' and 'problem definition', the second to 'information gathering' and 'diagnosis', the third to 'evaluate alternatives' and 'choice'. Gilligan *et al.*[22] also identified six stages, but theirs were concentrated towards the end of the cycle, while Mintzberg's were at the beginning. The two most recent contributions do not agree either.[23,24]

If the stages of Table 1 are all incorporated into one model it suggests that a decision process follows the path outlined in Figure 3. It can be seen that no stage is really redundant, yet writers do not include all stages explicitly. Setting objectives is only included by Gilligan *et al.*, Harrison, Gordon and Pressman, and Bridge. However, this stage is vital in business decision-making as solutions can only be seen as successful or not in the light of both the problem or opportunity and the overall objectives of the firm. The importance of objectives in decision-making is taken up in Chapter 2. Very few writers (only Mintzberg, Gordon and Pressman, and Bridge) include a problem definition stage, although recognizing a problem or a need for a decision, which almost all writers include, is not the same as clearly specifying what is required. This stage can in fact determine the results looked for and so needs careful attention. Lyles[29] high-lighted this in her study of organizations' problem formulation activities and found that 75 per cent of the sample initially defined the problem incorrectly and had to redefine it. The search stage is similarly scantily treated, only Gilligan *et al.*, Mintzberg and Harrison recognizing it, but it is one that absorbs most time for firms and can never be taken for granted. Finally, the implementation and monitoring stages are ignored by the majority of writers. Again these stages in practice are vital, for no matter how excellent a solution or decision is, if it is not translated into action and no attempt is made to ensure that implementation is in accordance with plans then the whole effort spent on the previous stages will be wasted.

Table 1: Stages of the decision process mentioned by different writers

Writer	Set objectives	Need for a decision (problem recognition)	Problem definition	Information gathering (search)	Develop alternatives (diagnosis)	Evaluatealternatives	Choice	Implement	Monitor (follow-up)
Simon[6]		•			•		•		
Janis[25]		•					•	•	•
Schrenk[26]		•			•		•		
Witte[27]				•	•	•	•		
Mintzberg et al.[2]		•	•	•	•	•	•		•
Gordon and Pressman[28]	•		•		•		•		•
Gilligan et al.[22]	•			•			•	•	•
Harrison[5]	•			•			•	•	•
Bridge[23]	•		•		•		•		
Hill[24]		•			•		•	•	

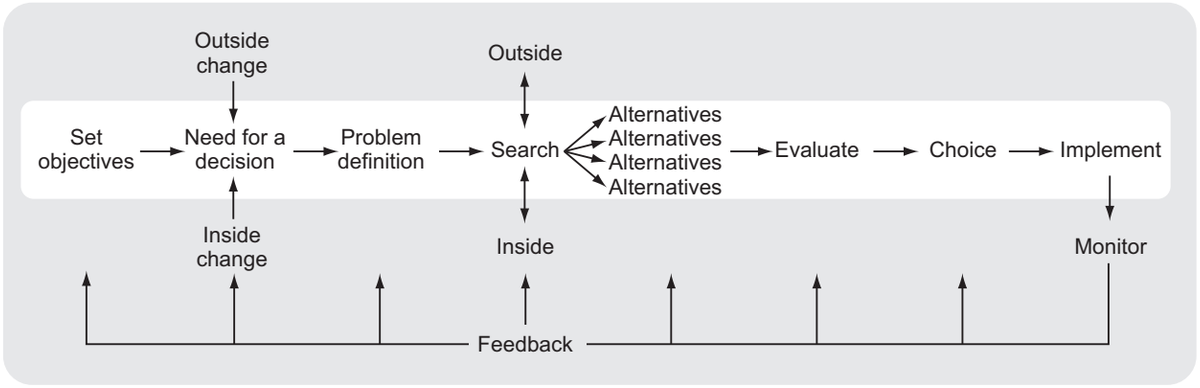

Figure 3: A decision process

A critique of the models

Each of the writers discussed above has attempted to model a decision process. Cooke and Slack[30] describe a model 'as an explicit statement of our image of reality' (p. 22), so some of the differences outlined above arise from different images of reality. A model provides us with an organization of reality. It is, therefore, very much a function of both reality and perception. It links the theoretical world of our minds with the empirical, world of our senses. It is no surprise, therefore, that these alternative models of decision-making exist. They are the result of differing perceptions and of the application of these perceptions to diverse decision situations or diverse realities. Figure 4 shows an area of theory overlapping an area of practice or phenomena: this area contains theories that explain how the real world works. The area of the theory box that does not overlap the phenomena box includes theory not rooted in reality either because it does not intend to be (for example, logic) or because it is 'bad' theory in Popper's[31] sense that it is inconsistent with the facts. The area of the phenomena box that does not overlap with the theory box includes undiscovered or unexplained phenomena.

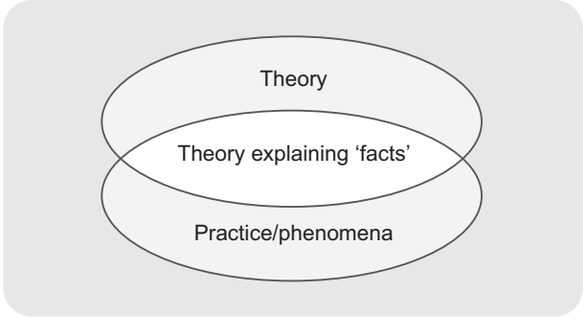

Figure 4: The link between theory and practice

There are basically two approaches to forging the links between theory and phenomena in order to develop a model. Model builders can use deductive methodology or inductive methodology. The deductive approach involves formulating a theory, which is compared to observations of the phenomena

that the theory seeks to explain to discover if it is consistent with the facts. The inductive approach involves observing phenomena and then generating theories to explain these observations. Broadly the majority of theories on decision processes follow the deductive approach; only Mintzberg uses an inductive approach.

Usually deductive knowledge is associated with prescriptive or normative advice and inductive knowledge with descriptive advice. A knowledge–source matrix based on Caw's work[32] shows this (Table 2). Following Caw's analysis one would expect the different methodological approaches to have been used partly because different uses for the knowledge have been perceived by those generating it. Thus, for example, Mintzberg took an inductive approach as he wished to explain observed phenomena, but like many descriptivists or positivists before him he went on to suggest what should be done to improve strategic decision-making by looking at the detail of his findings. Other writers took a deductive approach as they wished to offer advice, but they had considerable experience of business decision-making, which must have affected their theorizing or model building.

Table 2: A source–knowledge matrix

Source	**Knowledge**	
	'What should be':	**'What is':**
	normative/prescriptive	**Descriptive**
Deductive	•	
Inductive		•

This brings us to the artificiality in the deductive–inductive split, for in practice no model can be wholly one or the other. Figure 5 shows that theory cannot be generated in total isolation from the real world, because awareness of the phenomena it is to explain will influence the model builder's perceptions. Similarly, the selection of an area of interest will be affected by implicit theories affecting selection of 'facts'. Additionally, rules of measurement and of correspondence between phenomena and the names or numbers associated with them are general to both inductionists and deductionists, although they vary over time and between 'scientific periods'.

A particular problem in trying to model a decision process is the huge range of experiences that are covered: although most of the writers mentioned confine themselves to the business area, they frequently include other types of organization. Furthermore, they attempt to cover all types of decision, dealing with different time spans and ranging over different continents. It may therefore be of more use to develop a less general model of decision-making. Features of these general models can be incorporated and refined for use in specific decision areas.

Strategic decision-making models

An important subset of decision models that is a central concern of this book is that associated with strategic decision-making. A review of a number of the models available demonstrates both the importance of understanding the

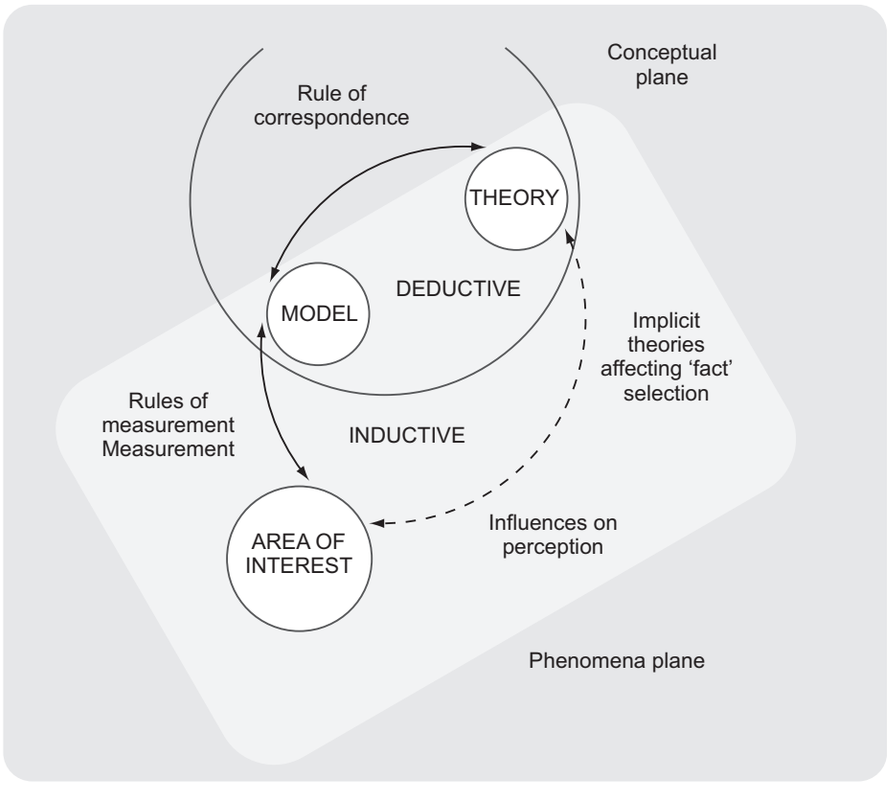

Figure 5: The artificiality of the inductive–deductive methodological split

methodological stance taken and the need to relate theory to practice. The earlier models tended to be normative and prescriptive. They assumed a clear distinction between different levels of decision-making and a degree of rationality seldom found in practice. The later models were descriptive and indicated that in the 'real world' the levels of decision-making are more closely related and rationality cannot be assumed; allowances have to be made for behavioural effects.

The following discussion shows that the Hofer and Schendel model and the Higgins model both develop a rational sequential approach to strategic decision-making which is of necessity 'top-down'. Mintzberg, on the other hand, suggests that because of limited rationality the process is not sequential but involves considerable back-tracking or repetition of stages. Furthermore, there is not a firm distinction between the levels of decision-making because a number of operating or administrative decisions can eventually amount to a perceivable strategy. What emerges in such situations may not, of course, be desirable or what was really wanted. So for a bottom-up approach to be successful in achieving overall objectives, it is essential that an overall strategic direction is given from the top. The strategic management process must guide lower-level decisions to ensure they are in line with strategic objectives.

Hofer and Schendel[33] claim that strategy is an unstructured problem-solving process, which they then describe as a rational sequential process (see Figure 6). Their normative model sees goal formulation as outside the strategy formulation process. In this way the model is more general – of wider applicability and use than if it specified an objective and worked through to specific applications. This model is based on the ideas of limited

rationality, so it encompasses uncertainty, complexity of decision and bounded rationality, and provides a model for rational decision-making that takes account of these features. The model begins with identification of the issue. This is not necessarily simple or obvious because of the problem of partial ignorance, so Hofer and Schendel advise the inclusion of contingency planning in the strategy formulation process. Once the decision issue has been identified alternatives are generated, including social and political analyses as well as economic and market forecasts. These must then be evaluated. They suggest that it is difficult to look at problems or projects in isolation, because of the synergistic effects among projects. Additionally, information, especially that concerned with the future, is unlikely to be reliable, so contingency planning at both a business level and an overall corporate level is advocated. The process of evaluation clarifies the multi-dimensional issues. A choice then has to be made, and for this to be done in the most rational way, given the constraints on rationality, the choice situation will involve the use of criteria, or a choice 'model'. These form part of what are called strategic tools and can be found in Chapters 6 and 9. After choice the process ends because Hofer and Schendel exclude implementation planning from the strategy formulation process.

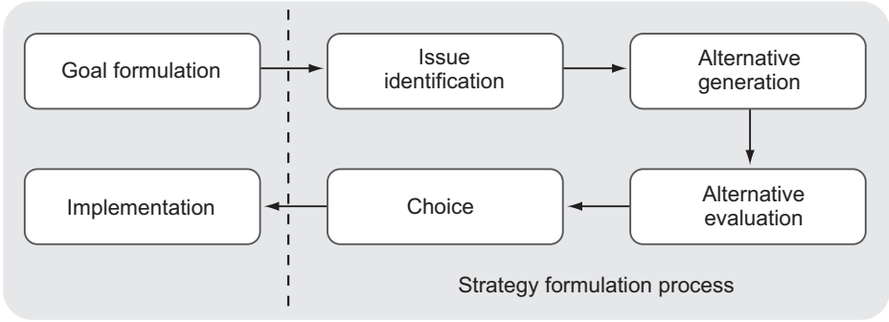

Figure 6: Hofer and Schendel's strategic decision-making process

Even in modelling the more specific decision of strategy opinion is not undivided. To Higgins[34] the main issue in the strategic decision-making process is the identification of information system needs, which will overcome the problems of assimilation that fully rational models would have. In many ways his approach is effectively a practical implementation of Ansoff's ideas (see Figure 7). Objectives are compared with required performance (which comes from outside the model) and any performance gap is looked at in the light of forecasts, which are themselves a result of an audit of the company's present position (which may involve, for example, an analysis of strengths and weaknesses compared with the results of an environmental analysis of the important factors likely to influence the company. From these comparisons of different information inputs an overall corporate plan results, followed by individual business plans and finally operational budgets. Thus Higgins sees the process as one imposed from the top of an organization, using data that can mostly be easily quantified.

Yet another approach is provided by Mintzberg.[2] Unlike Hofer and Schendel or Higgins he adopts a positive approach to theory formation. Mintzberg provides a rather richer model that not only recognizes limitations to full rationality but also incorporates into the model practices that are adopted to

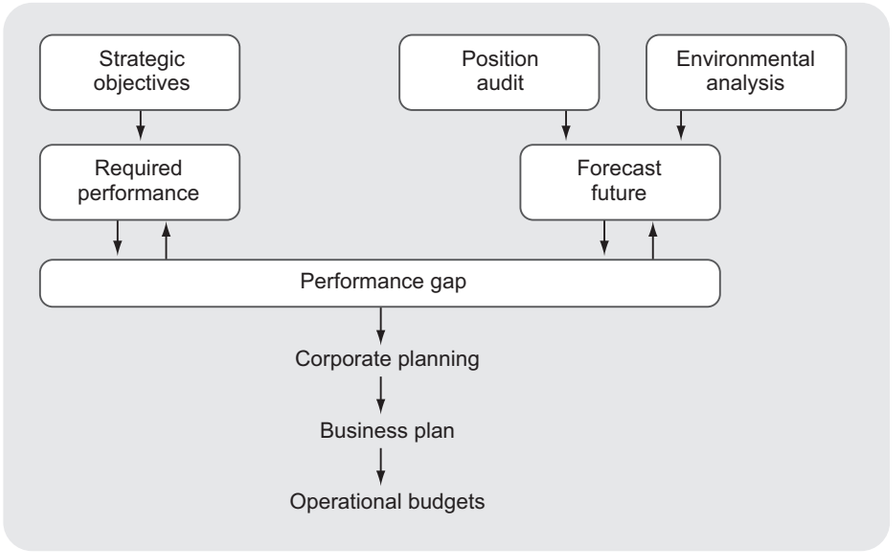

Figure 7: Higgins's strategic decision-making process

overcome these limitations (see Figure 8). Using data based on five years of empirical observations, using 50 teams of four or five students, who worked in organizations for three to six months observing 25 strategic decisions, Mintzberg claims that actual decision processes fall into three stages: identification, development and selection. Identification consists of two parts: the recognition of a problem and the diagnosis of that problem. Recognition of a problem is affected by the availability of an answer, or occurs if 'actuals' deviate from 'standard'. The number of stimuli needed before a problem is recognized depends on whether the situation is perceived as being a crisis, a problem or an opportunity. The 25 decisions reported upon fell into the following categories: five opportunities, six opportunities/problems and fourteen problems/crises. The diagnostic part of the identification stage involves attempts to clarify issues, open information channels and establish task forces.

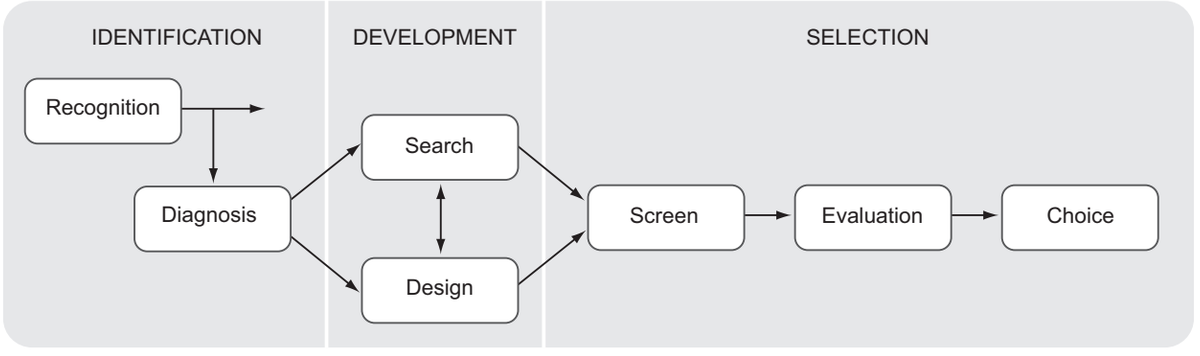

Figure 8: Mintzberg's strategic decision-making process

The second phase of the process has two distinct parts, that associated with search and that associated with design. Search for solutions begins with the organization's 'memory'; that is, its information systems and the experience of established members of the organization. Search is frequently passive in that, for example, there are alternatives offered for sale by service

organizations actively looking for organizations with problems. Finally there is a 'trap' search, which involves letting others know that you require an answer to a problem. The design of solutions is a complex and iterative process. The problem is broken into smaller parts which are handled in a sequential manner, with decisions to move on to the next 'stage' effectively meaning that certain possibilities are ruled out as the decision progresses. Solutions may be custom-made or modified ready-made answers. The former approach is only used if the latter is not available, because it involves complex cycles of design and search activities which Mintzberg calls 'nested cycles'.

The final stage is that of selection. It is usually seen as the last step but as development involves breaking a decision into a series of sub-decisions, each of which requires a selection step, so selection can be part of development. Selection involves screening to eliminate unfeasible solutions and so this stage is often part of the search phase. Next comes evaluation, which was found to be insignificant in this study, with judgement being the most important technique, followed by bargaining between interested parties. Thirdly, selection involves choice, but Mintzberg warns that the ignorance of those with authority to choose and the bias of the sponsor should be remembered. Finally authorization ends the process, but it is not always internal and is not always given, so the whole process may begin again.

Mintzberg concludes by stressing three routines that support strategic decision-making. First, decision control routines are an organization's particular way of handling decisions. This idea of meta-decision-making involves both routine approaches and flexible and informal approaches. Secondly, in Mintzberg's study, communication routines were of dominant importance, for they provided the inputs and outputs for decision-making. These routines fell into three categories: exploration, which involved both scanning and passive review; investigation, which involved focusing information search, but was often informal and verbal; and dissemination, whose importance depended on the number of individuals involved. Thirdly, political routines involved bargaining between interested parties, persuasion of those necessary to get a project going and the co-option of unwilling participants on to the team, to ensure or encourage their involvement and commitment.

Finally, Mintzberg stresses the importance of dynamics in the decision process. He found no examples of undisturbed progression of a decision through the process stages he identified, because of interferences, feedback loops and dead ends. The process was sometimes speeded up, sometimes delayed and sometimes recycled.

Each of the models presented, in its own way, takes account of some of the aspects of limitations to full rationality, and analyses the decision into a series of stages and steps that are important. As models become 'richer' rather than 'general', so methods of overcoming constraints can be incorporated. In this way Mintzberg's model is particularly interesting. His idea of rational activity and the incorporation of many management features into the process is valuable. Work by Johnson,[35] drawing on Pondy,[36] suggests that real-life strategic decisions are incremental in nature and can be explained by unifying the rational model with an intuitive model. At the

same time, of course, it must be recognized that such a model loses its more general applicability. The point to remember is that a model is to be used. One of universal use cannot be expected. It is a question of choosing the most appropriate for the issue at hand.

Practical considerations

What practical reasons are there for studying decision processes? An analysis of the way decisions are taken within an organization can help to give an overall 'picture' of the process normally followed for each organization that develops its own distinctive way of doing things because of the influence of its culture. A model similar to that in Case study 1 can be developed to outline the stages followed. It is then possible to compare the model produced with an idealized model, such as that of Figure 3, to see whether stages have been missed out or disproportionate amounts of time and resources have been devoted to one stage. It can also be seen whether the process modelled is unnecessarily erratic. Once a complex decision is broken into stages it is easier to suggest specific improvements at particular points or stages. For example, perhaps the problem was not correctly specified at the problem definition stage, as Lyles[29] found was often true, or perhaps there was a lack of monitoring of results. The Glamorous Nightdresses case study seems to imply that disproportionate amounts of time and resources are devoted to authorization after the choice stage. The evidence that many firms do not use quantitative criteria suggests that the development of such criteria would be a benefit.

The interrelationships between the stages can be viewed, so that management can review the functioning of the whole decision-making process. It may be that there is a great deal of 'back-tracking' or recycling of events, so that stages are repeated. This can often be useful but it can be time-consuming and, if mechanisms can be developed to ensure repetition is undertaken only when essential, resources can be saved. The area of generation of alternatives is particularly suitable for this treatment as evidence suggests that frequently only one solution is considered. If this solution then becomes unsatisfactory the process must be repeated. A system which ensures that specified reasons for the rejection of an alternative, before it is compared with criteria, are listed then the same ground does not have to be covered again. For example, a major tractor company decided at a strategic level to contract out certain stages of production. The implementation of this resulted in the closure of a paint shop and the use of a paint finishing contractor. If this decision had not been investigated fully the service provided by the contractor might not have been of the required quality. Discovering an unsatisfactory service after the decision to close the in-house facility would necessitate very expensive back-tracking of the decision. The tendency at a strategic level to ignore the operational consequences will inevitably have strategic consequences by causing back-tracking.

The dynamism of the process must not be forgotten and frequently the systematic remodelling of a decision enables management better to coordinate and control the groups involved in making a decision.

Conclusion

This chapter has adopted the Harrison definition of a decision as 'a moment in an ongoing process of evaluating alternatives for meeting an objective'. It has suggested that, although different levels of decision-making are identified by various writers, in practice it is often difficult to distinguish between the levels. Some administrative decisions are unique but not of strategic significance and a number of operating decisions can in effect amount to a strategic change of direction. It has been argued that rational decision-making provides a useful model to improve business decision-making. An analysis of a number of writers on decision processes has led to the development of a model of a decision process that involves more stages than any individual writer advocates. A discussion of normative and positive models leads to the suggestion that both approaches are relevant to modelling business decision-making. This is amplified by the description of two examples from each methodological stance. Finally the practical usefulness of modelling a decision process is discussed and demonstrated in a case study.

Glamorous Nightdresses plc

This case is based on a multinational textile and clothing manufacturer. It first illustrates the problem of not clearly distinguishing between levels of decision-making and the tendency to refer decisions upwards. Secondly, it shows that certain stages of a decision process can be needlessly time- and resource-consuming.

A production problem arose at a factory making children's and ladies' wear. A new style of nightdress was proving difficult to embroider and an above average number of seconds was being produced. The factory manager was alerted to the problem by two control reports from the accounts department, which indicated that two styles of nightdress were producing higher than average (3 per cent) seconds. The seconds recovery supervisor gave the reason for the rejects as low-quality decorative stitching on hems and sleeves. The normal procedure in such a situation was for the supervisor to identify the machinists at fault and tell them to improve their standard of work or give extra training if required. However, in this instance the number of machinists at fault was so large that it was felt that the problem had another cause. At a weekly production meeting between the factory manager, chief designer, cutting room manager and purchasing controller/work study officer, which was chaired by the divisional chief executive (CE), it was agreed to search for the cause. The designer, the work study officer and machinists, in conjunction with the factory manager, agreed that the sewing machines in use (with the exception of one machine) could not produce the quality of finish required. The one machine could not cope with projected production volumes. Three alternative solutions were formulated:

1 *Buy a new sewing machine with top spreader facilities costing £2401.*

2 *Hire a suitable machine costing £1300 per annum.*

3 *Accept the drop in quality.*

The factory manager recommended alternative 1 and the divisional CE agreed. However, all capital expenditure had to be authorized by the front-line-reporting body's (FRB) chief executive officer (CEO). In addition, an authorized capital expenditure voucher (CEV) had to be signed by the divisional CEO, the sub-group CEO, the FRB finance director and the FRB CEO.

The CEV contains a financial analysis of the costs and benefits of the proposed capital expenditure together with a short narrative by the proposer, which shows the chain of command linked to the organizational chart for the company (Figure 9). The proposal showed an undiscounted payback of under two years and was authorized by all relevant people.

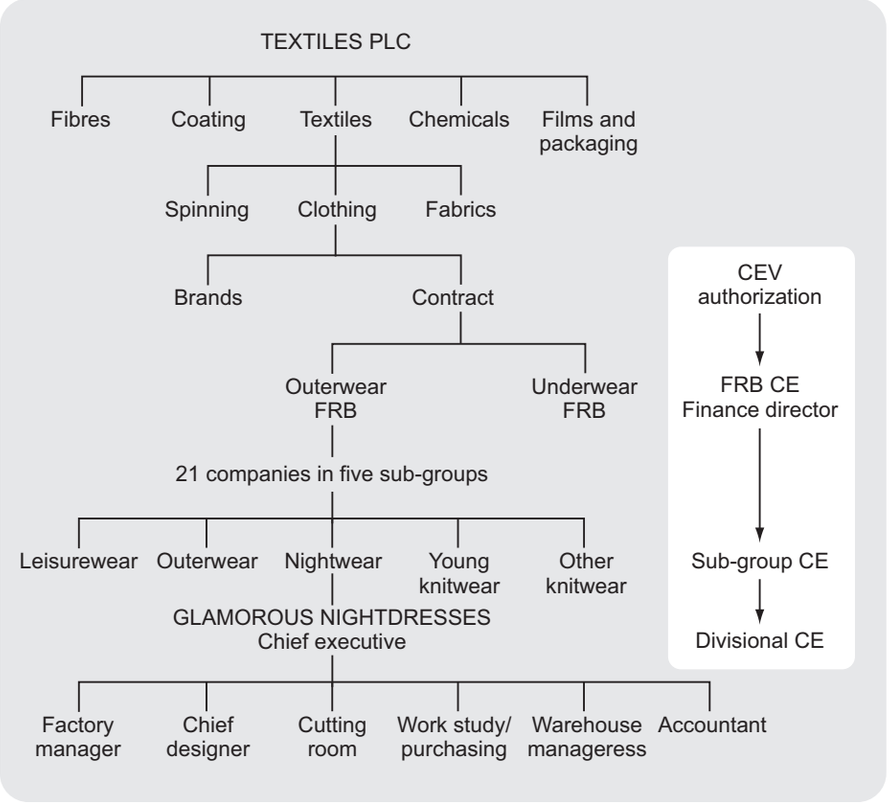

Figure 9: The chain of command of Glamorous Nightdresses

The model of the process in Figure 10 shows the stages followed and highlights the stages where resources have been devoted. Using Hofer and Schendel's analysis we can see the disproportionate time directed to choice. Given the amount of money involved (£2401) it would seem that the authorization process was needlessly lengthy and involved too much of the time of several highly paid executives. However, the desire to ensure that a coherent strategy is implemented often leads large firms to have extensive authorization procedures. Given that a policy of lower quality or rental could have been implemented without going

through such procedures the model helps to highlight areas where the decision-making process needs review.

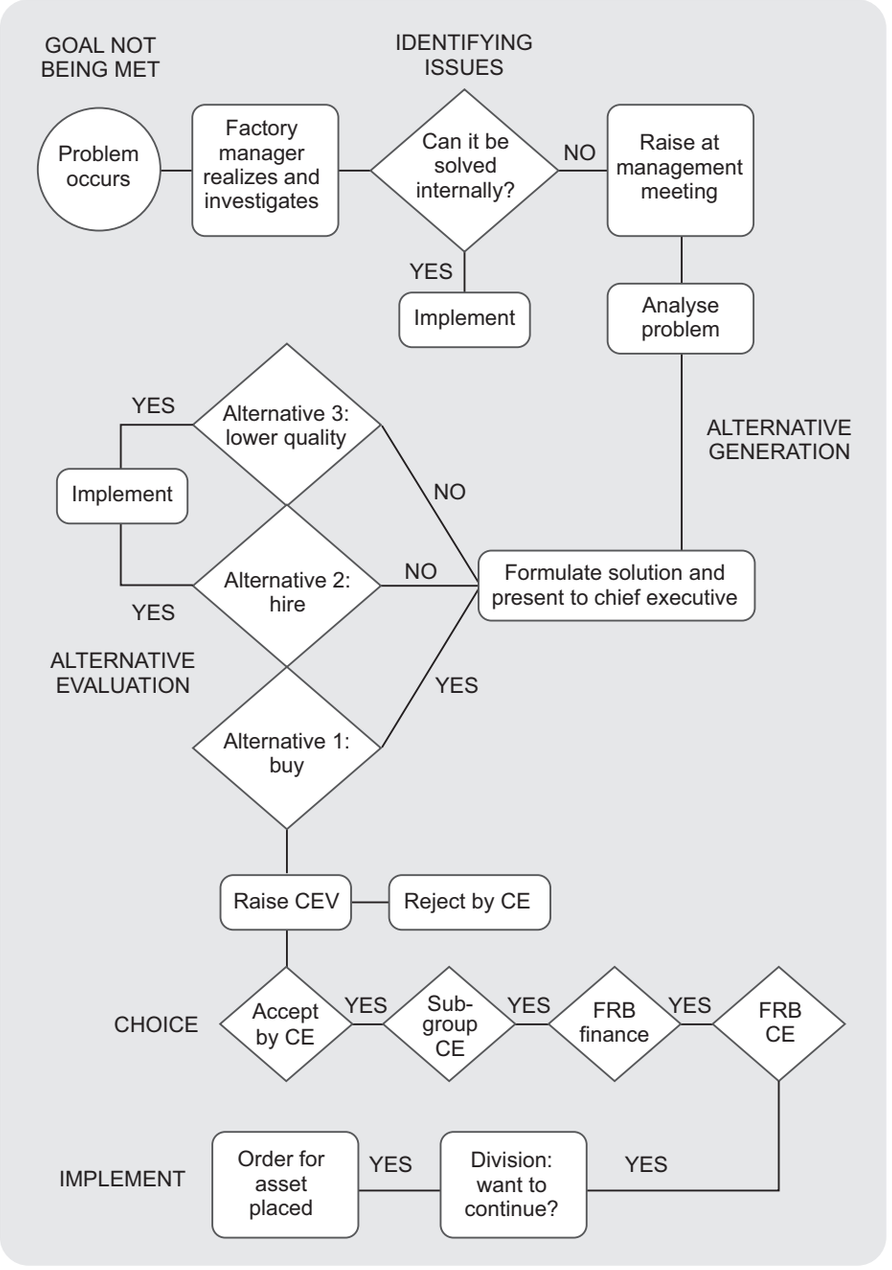

Figure 10: A model of the decision process at Glamorous Nightdresses

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Reading 17: Decision-making as a political process

Andrew M. Pettigrew

Pettigrew, A. M. (1973) 'Decision-making as a Political Process' in Salaman, G. (ed) (2001) *Decision Making for Business*, London, Sage Publications Limited.

The idea of analysing organizations as political systems is not yet a popular one. In 1962 Norton Long noted: 'People will readily admit that governments are organizations. The converse – that organizations are governments – is equally true but rarely considered (1962: 110). Long gives two main reasons for this neglect: first, a lack of concern with the 'political' structure of the organization and a consequent over-attention to the formal structure of power and legitimacy: secondly, a heavy reliance on a psychological orientation with a lack of emphasis on sociological analysis. Burns (1961) has also made a plea for the study of the 'political' in organizations. He raises the issue of the difficulty of studying such behaviour: 'The problem is no one regards himself as a politician, or as acting politically, except of course on occasions when he is led into accounts of successful intrigue and manoeuvering when he bolsters his self-esteem and reputation by projecting the whole affair into the safe social context of a game or joke' (1961: 260). There is, in addition, the problem that those who are politically involved usually claim that they are acting in the interests of the company as a whole. This is how they legitimate their behaviour.

Nevertheless, a few empirical studies of political behaviour in organizations have appeared. Dimock (1952) provides a rather extreme example. He sees the executive as a tactician and philosopher who 'must live by his wits, his competitive instincts, his understanding of social forces, and his ability as a leader' (1952: 290). The bureaux that Dimock talks of are engaged in conflict as a result of overlapping jurisdictions, competing loyalties, and incompatible objectives. Strauss (1962) in a study of lateral organizational relationships deals with what he calls 'office politics' and 'bureaucratic gamesmanship'. He describes the various tactics used by purchasing agents to control the inputs to their role and thereby increase their status. [. . .] Crozier (1964), dealing with the triadic relationship, demonstrates how a person with formally the lowest power and prestige is able, in part at least, to control the initiation of action by others. His main explanatory variables are uncertainty, immobility and commitment. The technical engineer, because of his control over the major source of uncertainty in the routine of factory life, his relative immobility and his high commitment to his job, is able to exert some power over his superiors. [. . .]

In the present study the organization is considered an open political system. The division of work in an organization creates sub-units. These sub-units develop interests based on specialized functions and responsibilities.

Although such sub-units have specialized tasks, they may also be interdependent. This interdependence may be played out within a joint decision-making process. Within such decision-making processes, interest-based demands are made. Given heterogeneity in the demand-generating process and the absence of a clearly set system of priorities between those demands, conflict is likely to ensue. Sub-units with differential interests make claims on scarce organizational resources. The extent of the claims is likely to be a reflection of the unit's perception of how critical the resources up for negotiation are to its survival and development. The success any claimant has in furthering his interests will be a consequence of his ability to generate support for his demand.

It is the involvement of sub-units in such demand- and support-generating processes within the decision-making processes of the organization that constitutes the political dimension. Political behaviour is defined as behaviour by individuals, or, in collective terms, by sub-units, within an organization that makes a claim against the resource-sharing system of the organization. [. . .]

As long as organizations continue as resource-sharing systems where there is an inevitable scarcity of those resources, political behaviour will occur: 'The specialization of function not only proceduralizes and so restrains power, it also creates functionaires with a function to defend and a constituency to represent and draw strength from' (Long, 1962: 114). If the dominant occupational ideology defines success as career mobility and if people continue to be rewarded for that mobility, they will attempt to influence the procedures for mobility established in any occupation.

One of the major hypotheses of this study is that such political behaviour is likely to be a special feature of large-scale innovative decisions. These decisions are likely to threaten existing patterns of resource-sharing. New resources may be created and appear to fall within the jurisdiction of a department or individual who has not previously been a claimant in a particular area. This department, or its principal representative, may see this as an opportunity to increase its, or his, status and rewards in the organization. Those who see their interests threatened by the change may invoke resistance in the joint decision process. In all these ways new political action is released and ultimately the existing distribution of power is endangered.

The impact of a large-scale computer installation, it is suggested, will have substantially similar consequences for the organization concerned. In the joint decision process involving the Old Guard and the New Guard (Kahn et al., 1964: 128), the issues that are likely to arise will have to do with the relative contribution that either side can claim for its knowledge or skill contributed as resources, and the right thereby to the greater or lesser share of command over total resources. In the present case, the control problem involving the inclusive leadership system and its innovating subsystem is complicated by the control problem within the innovating subsystem itself. In the 15 or so years in which computers have been used commercially, there have been dramatic changes in computer technology. These changes have not only kept user task environments in a considerable state of flux and uncertainty, but also brought changes in the occupational structure of the

industry. The relative statuses of the various occupational groups have changed: programmers no longer occupy the high status they once did. Status systems, however, are slow to adjust, and recognition frequently lags behind capabilities. Newer specialties are often more expansionist than older ones, since they have not been accepted and are still trying to prove themselves. To use Thompson's (1961) phrase, power conflicts thus arise over perceptions of 'the reality of interdependence'. In a changing technological environment the right to review or to be consulted may be distributed in a manner inconsistent with the distribution of ability. This may lead to jurisdictional struggles until a further balance in the state of interdependence is achieved.

[. . .] The theoretically most developed analyses of organizational decision-making, those of March and Simon (1958) and Cyert and March (1963), are lacking in certain respects. [. . .]

First, the above theories are virtually untestable on an aggregate basis because they are presented in a universal and non-structural form. Theories, even in a universal form, should be specified in a societal context and related to societal structures and organizations. Secondly, decisions are not made by individuals or by role occupants, but via processes which are affected by properties of the unit or units in which the decision is to be made. Information failures that characterize 'bounded rationality' are rooted in structural problems of hierarchy, specialization and centralization, and do not just reflect the malfunctioning of thought processes. Conflict in a joint decision-making process may arise not only as a result of differences in goals and perceptions but with regard to the transference of authority over a particular area from one sub-unit to another. While 'satisficing man' may be a considerable advance in realism over the economist's maximizing man, the former is never operationally defined. In consequence, the role that powerful interests might play in the search and choice processes tends to be played down. Finally, although Cyert and March (1963) discuss conflict they are never specific about its determinants. They offer only vague discussions of sub-goal identification. Their model of coalition formation, while smacking of realism, lacks depth of presentation. There is no mention of the organizational structure of the firm, nor therefore of the membership of the bargaining sub-groups in the coalition. Little attention is given to how and why coalitions are formed and changed, or to the generation of support and how the structure of the organization might limit such a process.

While our analysis has gone much further than Cyert and March in discussing the determinants of the political behaviour they describe, if it is going to add to existing work, an attempt must be made to explain processually the relationship between the strategies pursued by the various interested parties and the final decisional outcome. Such an analysis involves tracing out the generation of demands and the mobilization of support for those demands. Finally, for the sake of analytical precision the concept of politics requires differentiation into the elements of power and authority.

Power and organizational decision-making

In 1964, Kahn wrote: 'The descent from theory to data is often painful. With respect to power, there are a few extra twinges involved in that downward journey because the research results so far available are few and modest' (1964: 52). He then went on to describe three studies of superior–subordinate relationships and a study of control in a trade union, all carried out at Michigan. By 1968, Silverman was arguing [. . .] for 'an analysis of the balance of power within an organization and of the factors that govern it' (1968: 234). Mouzelis (1967) talked of feats already achieved as far as intra-organizational power relations were concerned: 'What is most needed ... is to combine in a more systematic way this new awareness of the internal power structure of an organization with the wider problems of power in modern societies' (1967: 162). [. . .]

As far as organizational studies of power are concerned, one of the main problems is gaining access to do research. In many cases, sociologists rely upon the co-operation and financial support of those who control the organizations they seek to study. As Mouzelis (1967: 163) has stated, the practical issue then becomes whether 'groups would systematically oppose and hinder the sociologists' attempts to bring into the open the power structure and political struggles taking place in the organization'. [. . .]

Aside from the practical problem of limited research access, the concept of power has received scant empirical attention because of controversy over its conceptual elaboration and operational definition. [. . .]

There are as many different definitions of the concepts of authority and power as there are of the concept of role. This is not the place to effect yet another survey of them. However, a number of important theoretical distinctions must be made if our analysis is to move off on a sound footing. For Talcott Parsons, authority refers to the legitimate position of an individual or group: 'Authority is essentially the institutional code within which the use of power as medium is organized and legitimized' (1967: 319). Authority is then, for Parsons, a basis of power, in fact the only basis of power, rather than a kind of power. The use of power is restricted entirely to the achievement of collective goals: 'Power rests on the consensual solidarity of a system ... in this sense it is the capacity of a unit in the social system, collective or individual, to establish or activate commitments to performance that contributes to, or is in the interest of, attainment of the goals of a collectivity' (1967: 504). Giddens (1968) holds that Parson's collectivistic orientation to power shares some of the basic difficulties and deficiencies of his general theory: 'By treating power as necessarily (by definition) legitimate, and thus starting from the assumption of consensus of some kind between power-holders and those subordinate to them, Parsons virtually ignores . . . the necessarily hierarchical character of power, and the divisions of interest which are frequently consequent upon it' (1968: 264). Clearly, positions of power offer to their incumbents definite material and psychological rewards, and thereby stimulate conflicts between those who want power and those who have it. This brings into play a multiplicity of possible strategies of coercion, deceit, and manipulation which can be used either to acquire or to hold on to power: 'Any sociological theory which treats such phenomena as "incidental", or as 'secondary and derived", and

not as structurally intrinsic to power differentials, is blatantly inadequate' (Giddens. 1968: 264). [. . .]

The formal structure of power and legitimacy is regarded as problematic. This issue has been expressed in the literature in a number of ways. Barnard (1938) talks of the authority of position and the authority of leadership, while Bass (1960) distinguishes between power of position and personal power. More recently, Peabody (1964) has discussed the differences between formal and functional authority. All these authors imply that authority requires to be fortified in interaction. A position may give a leader authority, but the exercise of authority requires interaction. It is at this point that the leader's problems begin. Blau (1955) has posited that a superior's ability to exercise authority depends on the willingness of his subordinates to obey him. The superior not only controls but is controlled. Crozier (1964: 150) similarly considers subordinates as 'free agents who can discuss their own problems and bargain about them, who not only submit to a power structure but also participate in that structure'.

[. . .] If certain groups within a social system compare their share of power, wealth and status with that of other groups and question the legitimacy of this distribution, discontent and overt conflict are likely to ensue. The critical consideration is, then, what factors lead groups and individuals to question at a certain point the legitimacy of the system of distribution of authority and rewards? A further source of discontent in certain poorly institutionalized social systems is the possibility that individuals may not know what either their superiors or their subordinates regard as legitimate behaviour.

The present question is, however, how superiors attain and sustain legitimacy. The key issue is the norms and values adhered to by both superior and subordinate. According to Blau (1964: 199): 'Compliance is a cost that is judged on the basis of social norms of fairness. Excessive demands lead to disapproval.' As a group representative the superior will be expected to some extent to symbolize the values and standards of the group. And yet the contact the superior has with the norms of the external environment, coupled with his need for some acceptance by that environment if he is to be an effective group representative, may place on him pressures to conform to norms contrary to his group's. Michels (1949: 311), quoting the example of the 'deproletarianization' of socialist leaders, suggests that this is a special problem for minority group leaders. Other empirical examples of this same phenomenon have been provided by Gluckman (1949) in discussing the village headman's role, and more recently by Kaplan (1959) and Evan (1965) in examining the research administrator's role. Data will be presented shortly to demonstrate that the head of a Management Services department is faced with a similar problem.

Evidence from experimental psychology has established that 'competence in helping the group achieve its goals, and early conformity to its normative expectations for members, provide the potential for acting as a leader and being perceived as such' (Hollander and Julian, 1969). [. . .] Julian and Hollander (1966) found that, aside from the significance of task competence, a leader's 'interest in group members' and 'interest in group activity' were significantly related to group members' willingness to have him continue in that position. While it is doubtful that in a non-laboratory situation

subordinates could exert sufficient pressure to remove their superior, the above findings certainly support the conclusion that the leader's source of authority is perceived and reacted to as a relevant element in the leadership process.

In contrast to prestige and authority structures, power structures rest primarily not on a social consensus concerning expectations about privileges or rights between superiors and subordinates, but on the distribution of the resources by means of which compliance with demands can be enforced. Following Dahl (1957: 203), power involves 'A having power over B to the extent that he can get B to do something that B would not otherwise do'. Power is, then, a property of social relationships, not an attribute of the actor. An essential aspect of this theory of power is the notion of dependency. [. . .]

An examination of the determinants of dependency should uncover the power base of an actor in respect of his role set: 'The base of an actor's power consists of all the resources, opportunities, acts, objects that he can exploit in order to affect the behavior of another (Dahl, 1957: 203). Dependency is, then, a product of an imbalance of exchange between individuals and the ability of one actor to control others through his possession of resources. Such resources must not only be possessed by the power aspirant, but also be controlled by him. Bannester (1969: 386) makes this point succinctly: 'It is immaterial who owns the gun and is licensed to carry it; the question is who has his finger on the trigger.'

Mechanic (1962: 352) has shown that within organizations dependency can be generated by controlling access to the resources of 'information, persons and instrumentalities'. To the extent that these resources can be controlled, 'lower participants make higher-ranking participants dependent upon them. Thus, dependence together with the manipulation of the dependency relationship is the key to the power of lower participants' (1962: 256). Unfortunately there are few empirical examples describing such a process. Scheff (1961) analyses the failure of a state mental hospital to bring about intended reform because of the opposition of the hospital attendants. The power of the ward attendants largely derived from the dependence on them of the physicians. This dependence resulted from the physicians' short tenure, their lack of interest in administration, and the large amount of administrative responsibility they had to assume. An agreement developed between the physicians and the attendants whereby the attendants would take on some of the responsibilities and obligations of the physicians in exchange for increased power in decision-making processes concerning patients. If a physician failed to honour his part of the agreement, the attendants would disrupt his contact with patients by withholding information and being disobedient and generally unco-operative. Sykes (1961) quotes a similar example, this time describing the dependence of prison guards on inmates. Although guards could report prisoners for disobedience, too many reports from a particular guard would give his superiors the impression that he was ineffective. The result was a trading agreement whereby the guards allowed violation of certain rules in return for cooperative behaviour.

Control over information is a critical resource for mobilizing power in a decision-taking situation. McCleery (1960) has provided interesting data on

power relations in a prison. His main point is that the formal system of authority relations could be considerably modified by the location and control of communication channels. Because all reports had to pass through the custodial hierarchy, this group was able to subvert the industrial and reform goals represented by the Prison Professional Services and Industry Programs. The head of the custodial hierarchy, the prison captain, was for the same reason able to exert considerable control over decisions made by his immediate superior, die warden. McCleery concludes that while 'the institutional autocrat is not responsible to his subordinates, he is no less responsible than any other executive to those who define the premises of his discretion' (1960:51).

The pertinent research question [. . .] is: Under what conditions is a superior likely to be most dependent on his subordinates? Walter (1966), in a study of decision-making in two cities, confirmed his hypothesis that 'the influence of subordinates over superiors on non-programmed choices is greater than the influence of superiors over subordinates' (1966: 206). His reasons for this were somewhat inconclusive: 'This outcome is apparently a function of the subordinate's greater knowledge, or, perhaps, the shared presumption by superiors that subordinates know more than they do.'

Given our interest in innovative decision-making jointly involving executives and computer experts, what power the experts have over their immediate superior and the executives is likely to be consequent upon the amount of dependency in the relationship. The expert can maintain a power position over high-ranking persons in the organization as long as they are dependent upon him for special skills and access to certain kinds of information. It is expected that innovative decisions will be characterized by uncertainty. Such uncertainty can be used as a major power resource by the expert. Crozier (1964: 131) cites the example of the technical engineer who is able to control the actions of his director by setting technical limits on what it is and what it is not possible to do. Others also have referred to the role of uncertainty in power relations. [. . .] Zald (1962) found that the degree of uncertainty in the relation of administrative means to organizational ends was a contributory factor to both the power balance and the level of conflict in five correctional institutions. Gordon and Becker (1964) draw attention to the instability of expert power. They attribute shifts in power within hospitals from physicians to administrators to the impact of modern medical techniques. These enable administrators to specify the procedures and resources to be used in treatment. Specified procedures improve administrative co-ordination, but mounting conflict may be anticipated as physicians defend their discretionary prerogatives against the encroaching rules.

In a joint decision process the expert is unlikely to be omnipotent even with the most technically uncertain problem. There is the factor of political access. The position the expert occupies in the structure of relationships in the organization will affect his ability to control and direct the actions of others, as will his position in the communication structure of the organization. Furthermore, executives generally have ultimate power to hire and fire experts. This is likely to exert a major control over the power strategies of the experts. Also, a superior may attempt to reduce his dependence on any group of experts by arranging to pick up the specialist

information they possess from other sources. In doing so, however, he will create an exchange imbalance in his relationship with them. He may, of course, attempt to coerce his experts into giving him advice or, alternatively, resign himself to doing without it. Dahl (1967: 238) has noted that a further strategy used by leaders 'is to co-opt rivals into the central leadership group. Another is to buy them off, or to undercut their support by making concessions to their followers.' Georg Simmel (1950), in his discussion of coalition formation in triads, describes the strategy of divide and rule used by a leader faced with a coalition of subordinates. All these strategies may be used by an executive seeking to reduce his dependence on an expert group.

The expert, however, need not simply rely upon the presumed dependency of others that his expertise can give him. He can seek support for the demands he is making. Again, the amount of support a person achieves in a situation will be conditional on the structure and nature of his organizational relationships. Respect might be an important factor here, as will be general personal acceptability and particular feelings of indebtedness felt by relevant others. [. . .]

Crozier (1964) has analysed the evolution of power relationships in systems. He underlines the self-defeating nature of expert power:

> The invasion of all domains by rationality, of course, gives power to the expert who is an agent of this progress. But the expert's success is constantly self-defeating. The rationalization process gives him power, but the end results of rationalization curtail this power. As soon as a field is well covered, as soon as the first intuitions and innovations can be translated into rules and programs, the expert's power disappears (1964: 165).

Crozier also hypothesizes that, 'in the long run, power will tend to be closely related to the kind of uncertainty upon which depends the life of the organization' (1964: 164). It has already been hypothesized that innovative decisions will be characterized by uncertainty. Expert power might be expected to be maximal when the expert is involved in an innovative decision in that area of the business upon which the life of the organization depends.

Theoretical bearings

The analyses of organizational decision-taking proposed by March and Simon (1958) and Cyert and March (1963), while noteworthy for their political realism, have been found wanting. The present analysis seeks to complement existing work by exploring the nature of the 'political' in the context of an innovative decision process. For reasons already given, such political behaviour is likely to be especially pronounced in the uncertain task environment surrounding an innovative decision. The political dimension will be analysed with reference to authority and power relations in the decision process.

Particular emphasis will be given to the part played by individuals in the structuring of social action over time. By their ability to exert power over

others, individuals can change or maintain structures as well as the norms and expectations upon which these structures rest. An individual's behaviour is therefore governed not only by the structure of the situation in which he participates but also by his ability to shape and mould that structure to suit his own interests. He can do this only if he has sufficient power to impose his will on others despite their opposition. The weapons of such contests are the resources that individuals possess, control, and can manipulate, and the ties of dependency that they can form with relevant others.

Within decision-taking processes, power *strategies* are employed by the various interested parties through their *demands*. Strategies are the links between the intentions and perceptions of officials and the political system that imposes restraints and created opportunities for them (Wildavsky, 1964: 63). A demand 'is an expression of opinion that an authoritative allocation with regard to a particular subject matter should or should not be made by those responsible for doing so' (Easton, 1965: 38). The more complex, heterogeneous, and differentiated a political structure is, the more likely are disparate demands to be made. Such disparities are a product of organizational position, professional training, and adherence to sub-group values and reference groups. A joint decision process involving an inclusive leadership system and an innovative subsystem will be characterized by disparate demands. Not all demands can be met. A competitive struggle will develop in which the innovating subsystem (which may be differentiated itself) will attempt to utilize its various resources to generate support for its demands. Where a demand is voiced, who articulates it, who hears it, and how widely it is diffused are all matters of signal importance for the future stages of its career. The processing of demands and the generation of support are the principal components of the general political structure through which power may be wielded. The final decisional outcome will evolve out of the processes of power mobilization attempted by each party in support of its demand.

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Reading 18: Extract from 'Strategic decision making'

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Garbage can

First articulated by Cohen, March and Olsen (1972), the garbage can model describes decision making in highly ambiguous settings called organized anarchies. The model was largely a reaction to rational and political models of choice which Cohen and colleagues believed lacked sufficient sensitivity to decision making in a complex, unstable, ambiguous world.

Central to the garbage can perspective are organizations termed 'organized anarchies,' organisations beset by extreme ambiguity (Cohen *et al.* 1972). The ambiguity surfaces in three principal ways. One is problematic preferences: the inconsistent and ill-defined preferences that decision makers often possess. As the authors noted, decision makers are as likely to discover their goals through action as they are to understand them prior to choice. Second, organized anarchies have unclear technology. People have only a loose understanding of means and ends. Organizational participants gain knowledge by trial-and-error learning, but without clear understanding of underlying causes. Third, organized anarchies are characterized by fluid participation. Decision making participants come and go from the decision process, with their involvement depending upon their energy, interest and other demands on their time (Cohen *et al.*, 1972). Therefore, anticipating who will actually be involved in a decision is difficult.

The garbage can model describes the accidental or random confluence of four streams: (1) choice opportunities — occasions which call for a decision, (2) solutions — answers looking for problems, (3) participants — people with busy schedules who might pay attention, and (4) problems — concerns of people within and outside the organization. Thus, decision making occurs in a stochastic meeting of choices looking for problems, problems looking for choices, solutions looking for problems to answer, and decision makers looking for something to decide.

In comparison to political and rational models, the garbage can model calls attention to the importance of chance. What gets decided depends very strongly on timing and luck. Moreover, decisions themselves have a fuzzy character. They lack the clear beginning and end points of rational and political models. Garbage can participants wander in and out of the decision. Their preferences differ as well. The sharply-honed goals assumed by the political model and even the more vague ones of the boundedly rational perspective are missing as individuals are not sure about what they want and change their minds often anyway. Decisions are not the result of analysis by

boundedly rational individuals or the power of a coalition, but rather are a random confluence of events.

Research within the garbage can perspective follows three streams (Table 1). First, there are studies (e.g., Padgett, 1980; Carley, 1986; Masuch and LaPotin, 1989) which follow the simulation tradition of the original statement of the model. For example, Anderson and Fischer (1986) develop a more fine grained model of a garbage can process, achieving similar results to the original simulation (Cohen *et al.*, 1972). More typically, these studies introduce variations on the organized anarchy themes. For example, Padgett (1980) developed different assumptions about which decision makers can influence the decision and then showed the implications of that change.

The simulation tradition has generated some provocative ideas. However, field research has not kept pace. Instead of probing the simulation results, most field researchers have focused on description. Hence, the second stream of research uses case studies (e.g., Kreiner, 1976; Weiner, 1976; Olsen, 1976) to demonstrate the descriptive accuracy of the garbage can model, perhaps adding nuances such as deadlines. These case studies confirm elements of the perspective, but also suggest an alternative, less random model. We now turn to this evidence.

Organizations as anarchies

Empirical evidence suggests that some organizations can be accurately characterized as organized anarchies (e.g., Olsen, 1976; Kreiner, 1976; Levitt and Nass, 1989). The evidence is drawn primarily from government and education examples (March and Olsen, 1976), with more recent efforts applying the garbage can model to military organizations (March and Weissinger-Baylon, 1986).

Olsen's (1976) study of the selection of a new dean at a U.S. university provides a good illustration. Olsen reported that the preferences of the various decision makers were 'multiple, inconsistent, ill-defined, and changing.' At the outset, most participants desired a new dean who was young. They also preferred a person who was well-trained in mathematics, and a serious academic who could support the philosophy of the school. As candidates turned the school down, the criteria shifted to ones which could be met by the more realistic pool of candidates.

Olsen (1976) also described fluid participation, another characteristic feature of organized anarchies. Many people were engaged in the selection process, but in a part-time fashion. Further, he argued that the key decision makers switched over time from the faculty, to the dean and a few close associates, and finally to the vice chancellor as the school's problems in attracting candidates mounted.

Table 1: Summary of selected research: Garbage can model

Author(s)	Method	Sample	Description	Conclusions
Cohen, March and Olsen, 1972	Computer simulation	N/A	Introduces garbage can model of decision making in organized anarchies	Decision making as a combination of problems, solutions, people and opportunities
Kreiner, 1976	Case study	Danish experimental free school	Example of a garbage can process	Description of garbage can decision making
Olsen, 1976	Case study	Major American public university	Selection of a dean as rational conflict & garbage can	Evidence supports the garbage can model
Rommetveit, 1976	Case study	Norway	Decision to locate third medical school in Norway	Evidence supports the garbage can model
Weiner, 1976	Case study	San Francisco Unified School District	Decision process for desegregating elementary schools	Evidence supports garbage can; consequences of deadlines
Padgett, 1980	Mathematical model	N/A	Stochastic garbage can model for bureaucracy	Implications of ambiguity; managerial implications
Anderson and Fischer, 1986	Monte Carlo Simulation	N/A	Develops a Monte Carlo model of variation of garbage can	Results consistent with the garbage can
Carley, 1986	Computer simulation	N/A	Simulation measuring the efficiency of garbage can & structured processes	Measures of efficiency possible
March and Weissinger-Baylon 1986	Case studies	Military organizations	Applications of garbage can to military	Military does not fit pure garbage can models; garbage can needs structure to fit military
Pinfield, 1986	Case study	Canadian Federal Bureaucracy	Comparison of structured & garbage can models	Both models help understanding; decisions not as random as garbage can predicts
Magjuka, 1988	Field study	28 schools in 2 Illinois school districts	Comparison of garbage can & structural autonomy	Descriptive validity for garbage can; participation shows structural stability
Levitt and Nass, 1989	Cases study/ content analysis	Texbook publishing industry	Institutional & garbage can processes	Descriptive validity for the garbage can; institutional mechanisms affect decisions
Masuch and LaPotin, 1989	Computer simulation	N/A	Model of ambiguous choice under conditions of structure	Disorderly decisions, but due to commitment and cognitive limitations

Decision as a random confluence of streams

The heart of the garbage can model is the premise that decisions are the result of a random confluence of people, problems, solutions, and choice opportunities. Again, some of the empirical evidence is convincing. For example, Rommetveit (1976) put together a chart of changing participants, problems, solutions, and choice opportunities for an approximately 7-year decision to locate a medical school in Tromso, Norway. Over the course of the decision, problems such as how to improve the local region, reform medical education, and build a regional hospital arose. Similarly, solutions shifted from building a university in Tromso, to adding an extension of other universities, shifting clinical work to Trondheim and so forth.

Several case studies amplify the garbage can model. One set of results concerns deadlines. Decision making processes tend to become less like a garbage can as deadlines are imposed. For example, Weiner (1976) explored the impact of deadlines on the garbage can process to integrate the San Francisco school district. Deadlines forced the 'ejection' of extraneous garbage from the can and a focusing on the remaining issues. The number of participants decreased. But these fewer participants became more knowledgeable and their participation was more frequent. In addition, problems and solutions became clearly intertwined.

Related empirical results concern time perspectives. A number of authors (e.g., Kreiner, 1976; Olsen, 1976; Rommetveit, 1976) have observed that a longer time perspective improves the fit with the garbage can model, whereas a short time perspective is better captured by rational and political models of choice. Apparently as time progresses, the scope of decisions increases, the participants become more varied, and the number of solutions becomes larger.

Taken together, the above research supports the existence of organized anarchies and the garbage can decision making process (i.e., random confluence of independent streams). However, a closer look at this and other work suggests that the support is less than robust.

An alternative view

A good illustration is the empirical support for problematic preferences. For example, in the Olsen (1976) study of dean selection which is cited above, the importance, if not ranking, of criteria such as philosophical kinship to the school and academic leadership remained throughout the decision process. Thus, while there was some variation and ambiguity about what people wanted in a dean, there were common themes throughout the choice process. Similarly, Kreiner's (1976) study of decision making in a Danish free-school indicates that certain values such as Marxism and children's rights for self-determination were relevant throughout the decision process.

Participation is not always so random either. Again using Kreiner's (1976) study of a Danish free-school, although all parents and teachers could participate in decision making, a core group of six people dominated choice processes. Moreover, they faced a predictable group of opponents.

Some of the results for decision making as a random confluence of streams are also modest. For example, in Kreiner's (1976) study of decision making

within an experimental free-school, the story of the decision begins with the observation that two teachers in the third grade could not get along with one another and proceeds from there. At the end, the reader is told that the story exhibits a garbage can choice process, but without any real conceptual tie between the story and the model. Kreiner (1976: 170) simply concludes: 'We have described decision making in a standard garbage can situation.'

Another approach in the case studies has been to assert that, since small perturbations in circumstances could have dramatically changed the outcome of choices, the garbage can model must be accurate. For example, Olsen (1976) claims that the garbage can model provides a superior explanation to rational and political explanations of decision making because only the garbage can model can support the existence of multiple outcomes that could have happened under slightly different circumstances. However, such a backhanded argument seems better able to refute other theories than to confirm the garbage can.

Comparative research

More recently, a third stream of research on garbage can models (e.g., Pinfield, 1986; Magjuka, 1988; and Levitt and Nass, 1989) has compared the garbage can model with other perspectives. These studies partially affirm the descriptive accuracy of the garbage can model, but then show how alternative perspectives strongly challenge the model.

For example, Levitt and Nass (1989) found evidence for the existence of organized anarchies in their study of textbook publishing. But, once the research went beyond an individual case study description, other mechanisms imposed more order than the garbage can model allows. For example, the authors indicated that the institutional factors constrain or 'put a lid on' the garbage can.

Similarly, Pinfield (1986) studied the decision to develop a human resource strategy within the Canadian government. While Pinfield found some support for a garbage can interpretation, he also found that participation was not randomly fluid, but rather was a consequence of institutional roles, politics, and the phase of the decision process. Thus, participation was somewhat predictable. He also observed that streams of problems, people, choice opportunities and solutions were not independent, but rather linked together by the issue at hand. Further, individuals attempted (often successfully) to manage choice opportunities and the participation of others in the process (Pinfield, 1986).

Perhaps the strongest critique comes in another study of participation. Magjuka (1988) extensively studied participation in public school curriculum reform over several years using two school systems, several hundred teachers, and multiple levels of participation at the school and district levels. This author found that the garbage can was supported at the individual level. That is, individual teachers did come and go at random in the process of curriculum reform. However, overall patterns of participation were clearly predictable from psychological and demographic variables as well as from position in the social network. The author concludes (Magjuka, 1988: 256) that the results suggest an interpretation 'that does not support the Garbage Can or is in any sense congenial to the underlying thrust of the Garbage Can

theory. The results indicate that patterns of participation are purposive, rational, and predictable.'

Summary

To summarize, empirical research only modestly supports (1) the central idea of the garbage can perspective that organization anarchies exist. Similarly, the empirical research modestly confirms that (2) decisions occur as a result of chance intersection among changing problems, choice opportunities, solutions, and people (i.e., garbage can model). Finally, (3) the model is more robust as time frames become longer, deadlines are removed, and institutional forces are diminished.

Overall, the empirical support underlying organized anarchies and the garbage can model, which is often single case studies in book chapters, has modest methodological validity and is surprisingly soft. Thus, a central debate emerges. Does the garbage can model describe actual decision making or is it simply a labeling of the unexplained variance of other, more powerful, descriptions of strategic decision making? If the latter, it may more accurately be described as an extreme form of bounded rationality.

Finally, a synthesis of the empirical support for the three traditional paradigms suggests that strategic decision making is best described as a combination of boundedly rational and political insights. Bounded rationality shapes the cognitive limits and the looping of strategic decision processes, and the political perspective shapes the social context. While useful, the garbage can perspective is less empirically robust than these other perspectives.

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Reading 19: Cognitively skilled organizational decision making: making sense of deciding

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Balogun, J., Pye, A. and Hodgkinson, G. P. (2007) 'Cognitively skilled organizational decision making: making sense of deciding' in Hodgkinson, G. and Starbuck, W. H. (ed.) *The Oxford Handbook of Organizational Decision Making*, Oxford, Oxford University Press.

Introduction*

> Having lost its market dominance, the board of a FTSE100 retail company was under pressure from shareholders to improve performance. Eighteen months later, the Chief Executive appointed to bring about this agenda of cost cutting, reorganizing and downsizing, resigned. He explained how the board had also embraced change in this turn-around time by making its systems and processes more professional, in part through formalizing its decision making processes: there were now clear guidelines and protocols as to how proposals went through committee prior to reaching the main board.
>
> After a lengthy explanation of the details of these changes, he summarized and said: "... that was a change, a formalization of decisions. [Pause] To be honest with you, *it's bullshit* [laughs loudly] because what really happened was that the decisions would be made and discussions would be had and if there was anything controversial, the Deputy Chair would talk to the Chairman and if the Chairman didn't agree with it, then something would change."

This example characterizes the colorful picture of people doing their jobs in organizational contexts: there are structures, systems, and processes, and also frontstages and backstages, where different people with different agendas and personal interests use their differing power resources to influence and shape meaning, leading to a particular definition of the situation at a particular moment in time. And so it goes on. In this case, the Chief Executive (CE) recognized that for all he had the role, responsibility and in his view, the right ideas as to what had to change and how, ultimately he did not have sufficient power and influence nor eventually, the personal desire to persist: his reputation was worth more than this, so he resigned while he still could.

The authors of this chapter have many such examples in their studies of senior managers and change in organizations[1], which stand in stark contrast to the more static, two dimensional, colorless, and people-less examples that characterize much of the decision-making literature. The aim of this chapter is to bring the organizational cognition approach to decision making together with a sensemaking perspective on deciding, in an endeavor to bring real

people and processes into the picture to develop a more integrative understanding of how people "do decision making"—an enterprise which has both academic and practical relevance. The chapter begins by positioning this approach within decision-making research. It then explains the concepts of sensemaking and deciding, and sensereading and sensewrighting; explores why such skills are critical to processes of organizational decision making; and finally, why this is an important area for future research.

Decision-making research

Much research has investigated decision making from an "information processing" perspective. Most of this is lab-based and experimental, with a focus on the individual decision maker, enabling a greater understanding of the role of the individual decision makers' initial judgments and preferences in decision making (Hodgkinson and Maule 2002). In particular, it has informed understanding of managers' cognitive strategies for handling the mass of complex information available to them. There has been a focus, for example, on the role of heuristics and biases (Kahneman et al. 1982; Gigerenzer et al. 1999; Maule and Hodgkinson 2002). With the exception of research investigating processes of strategy development and strategic change (see, for example, Ranson et al 1980; Bartunek 1984; Smircich and Stubbart 1985; Johnson 1987), less attention has been paid to developing a more sociological or sensemaking perspective, concerned with how managers socially construct their organizational worlds and their competitive environments.

A sensemaking perspective points to the importance of understanding the conversational and social practices through which people constantly negotiate and renegotiate their social worlds (Gephart 1993; Pye 1993; Weick 1995; Balogun 2003; Balogun and Johnson 2004; Maitlis 2005). It pays attention to how people "deal with" (whether unconsciously or otherwise) constraints imposed by their information processing limitations and their organizational context, delving into the socio-political nature of organizations to show that the answer to better decision making does not necessarily lie with the provision of greater quantities of "more accurate," "objective" and timely data, but rather requires an understanding of the social processes of negotiation involved in deciding.

Some research on managerial and organizational cognition has sought to connect these two different traditions. Lant and Shapira (2001a, b), for example, distinguish computational and interpretive perspectives on organizational cognition, arguing that both are ultimately necessary in order to generate a more comprehensive account of organizational decision making and other cognitive processes. Yet little research actually does this. Since the computational perspective tends to focus on the individual decision maker, it remains limited. Of course, people enter group arenas with their own agendas and biases that can kick start political behaviors (Schwenk 1989). However, people do very often resolve these issues and do move on to make decisions. So how does this happen? This chapter argues that, to appreciate how people do or do not get their views accepted when competing logics collide requires greater understanding of the interaction between sensemaking and cognition, thus making sense of deciding.

Sensemaking and deciding

"Sensemaking is what it says it is, namely, making something sensible" (Weick 1995: 16). It is a social process of meaning construction and reconstruction that enables individuals through interacting with others to collectively create, maintain and interpret their world (Gioia and Chittipeddi 1991; Pye 1995; Balogun and Johnson 2004; Maitlis 2005). However, although the sensemaking perspective puts more emphasis on processes of social negotiation, much of the work on sensemaking and decision making focuses on disaster and inquiry sensemaking (Gephart 1993, 1997; Weick and Roberts 1993; Brown 2000). In addition, despite Weick's (1995) warning that sensemaking involves a power effect in which some voices are more privileged than others, there is still a lack of empirical study of the power dynamics which underlie the sensemaking process (Willmott 2002; Pye 2003; Weick et al. 2005).

While there might be little work on sensemaking and deciding per se, Brown's (2000) and Gephart's (1993, 1997) work on disaster and inquiry sensemaking does show how people and stakeholder groups position themselves to have their account of events accepted over the accounts of others, revealing the importance of understanding the role of agency in decision making. It supports other research (Gigerenzer et al. 1999) that suggests people do not just learn to overcome biases when they use heuristics, they innovate their own improvement heuristics that work for them. They learn to reconcile competing viewpoints in a way that enables them to re-interpret reality and reframe issues in situ.

However, to achieve this, individuals within groups engage in skilful sensegiving (Gioia and Chittipeddi 1991; Corley and Gioia 2004; Maitlis 2005), stage management and front and backstage activity (Goffman 1959; Mangham 1979, 1986; Pye 2002), so they can refashion the signals coming from other players and draw others into their agenda (Balogun et al. 2005). Hence, the distinction between sensemaking and sensegiving (Gioia and Chittipeddi 1991: 442), which defines sensegiving as a "process of attempting to influence the sensemaking and meaning construction of others toward a preferred redefinition of social reality," is useful because it introduces agency, adding a political dimension. Purely cognitive perspectives on sensemaking, with a focus on mental representation and modeling (e.g., Huff and Schwenk 1990) and a lesser concern for agency, cannot capture this much richer process. Integration with more sociological approaches, however, introduces a focus on the processes of social interaction that show how at times of change and uncertainty, people act in less preprogrammed ways, actively interpreting and shaping outcomes collectively. There is, in fact, an array of work that supports the need to understand more about how people are able to shape and influence the interpretations of others: ranging from strategic issue selling (Jackson and Dutton 1988; Dutton and Ashford 1993), through managerial agenda framing (Pitt et al. 1997), and framing as a leadership skill (Fairhurst 2005), to improvization (Mangham 1986) and the management of meaning (Pfeffer 1981; Smircich and Morgan 1982). An appreciation of this body of work is, therefore, central to developing understanding of how individuals work within groups to shape and influence organizational deciding.

The concept of framing is defined by Fairhurst and Sarr (1996: 3) as

the ability to shape the meaning of a subject, to judge its character and significance. To hold the frame of a subject is to choose one particular meaning (or set of meanings) over another. When we share our frames with others (the process of framing), we manage meaning because we assert that our interpretations should be taken as real over other possible interpretations.

This is a broader definition of framing than is usually the case in the decision-making literature and brings to the fore the political aspect often silently subsumed within the act of sensemaking. In so doing, it highlights the political nature of meaning construction and presentation (Hensmans 2003; Fiss and Zajac 2006) which is not just the prerogative of leadership. Many different stakeholders engage in "thought leadership" activity (Hodgkinson and Sparrow 2002), attempting to upwardly influence or in some cases contest the sensegiving of managers and offer alternative meanings or visions of reality; hence, intertwined and mutually reinforcing leader and stakeholder sensemaking shapes the processes and outcomes of organizational sensemaking (Maitlis and Lawrence 2007).

The sensemaking perspective also ensures attention to process; hence, this chapter is not concerned with decision making per se, but also the process of deciding, since this brings into play a "crucial set of elements, including self, action, interaction, interpretation, meaning and joint action" (Weick 1995: 41). It describes sensemaking as a dual, cyclical and ongoing process of sensereading and sensewrighting to better portray the aspect of skilled practice that is the focus of attention here and to clarify the relationship between sensemaking and sensegiving. When people are sensemaking, they are also sensegiving by giving off cues and interpretations they have made through their behavior and orientation towards action. It is not necessarily the case that others actually "pick up," "receive," or "accept" the sense that another is seeking to give: indeed, through their actions, people may give sense, both intentionally and unintentionally. As this chapter moves on to discuss, power relationships have an important role to play here.

Sensereading and sensewrighting as mutually constitutive processes

Mangham and Pye (1991) developed the metaphor of sensewrighting in their analysis of the behavior of top management teams running large organizations:

> We settled, finally, upon the notion of the executive as artist/scientist/craftsperson, someone who "reads" the circumstances in which he or she finds himself/herself and someone who "wrights" in the sense that a playwright "wrights" and a shipwright "wrights". Someone, that is, who shapes the material with which he or she works; someone who inherits and is shaped by a tradition and yet remains capable of going beyond that tradition and of shaping *it*; someone whose work reflects his or her understanding of the world at a particular moment in time, someone whose work, however, is never finished, always evolving ... enterprises are not usually haphazard arrangements of offices and people; the way they are set up and the people who are selected to occupy the offices

> communicate the wrighter's perspective on the world, his or her explanations of the way things are (or should be). (27–8)

The executives here were mostly FTSE 100 directors, skilled in the arts of intentional sensewrighting. However, there were occasions when even these practitioners could be seen to take action without awareness of sense given or the unintended side of sensewrighting. On such occasions they might act simply on the basis of routine or taken-for-granted assumptions about what is expected or is taken to be commonsense behavior around here, and in so doing, cultural norms or social mores. The classic phrase "dearly beloved, we are gathered here today ..." illustrates this point. Anyone with a Christian upbringing or who has ever watched a classic US western film need only hear this phrase to know the context and the types of behaviors expected of people in this setting. Users of this phrase can perform with confidence since they know with some certainty that it triggers a particular reaction from recipients. The giving of sense in circumstances where people are acting within existing social norms is not necessarily the kind of leadership and direction setting type of sensegiving described by Gioia and Chittipeddi (1991).

It is also important not to overlook the unintended consequences that arise from people operating on the basis of different sets of taken for granted world views that obscure power effects hidden in the relationships between individuals and that triggering particular responses to action and behavior. For example, Victor (a pseudonym) was the new CEO of a FTSE100 consumer goods multinational with a mandate from the board to effect a turnaround. An internal appointee who already knew many of the ills that needed curing, he spent the first three months talking to colleagues to gain their views and to get them on-side with a change program. He then tested some proposals with executive colleagues and found they were supportive of these ideas. The board also agreed with the proposed actions and so he set about implementing the plan. Progress was slower than intended but people seemed to know what was expected—after all, the CEO had heard people referring to "Victor's vision," so they knew there was a plan. However, after six months of progress which did not live up to ambition, Victor realized that despite his early consultations with executive colleagues, they essentially saw it as *his* plan and hence it did not have their full commitment.

So he started again, this time with a facilitated, three-day away day for the top 30 executives in the company to develop a new vision, one to which they could all sign up. Although the structural power positions and resources had not changed between these two change endeavors, the way the CEO enacted power changed significantly as he effected a shift of power balance: more than simply being encouraged to believe their views were important, now power to write the future was literally and metaphorically vested with the senior management team. The sequence of events, the actions taken and interpretations made together shaped the responses of participants, which in turn helped create a particular collective view (Pye 2005).

Interestingly, it is often the more accidental "unintended" aspect of sensewrighting that receives more attention than the intentional skilful aspect, in which the sensegiver may unwittingly (a) give a different sense to

that intended, as in Victor's case; or (b) like Gerald Ratner, give sense in addition to that which was intended. Ratner's infamous speech to a meeting of the Institute of Directors in London in 1991 unintentionally wiped millions off the value of his high street retail company almost over night. In response to a suggestion of a colleague to add in a few jokes, he explained to the audience that he could sell jewelry and other items cheaply because it was "total crap": the press took this to mean that everything Ratner's sold was rubbish, and this ultimately cost Ratner his job as well as a significant chunk of his personal wealth.

The Ratner case illustrates the mutually constitutive aspect of sensewrighting and sensereading. When using terms like "sensegiving" or "managing meaning," there is an implication of actor intentionality and recipient passivity. That is, it implies that those in charge are able to engage in a series of actions that have a particular and intended impact on those on the receiving end: in other words, that leaders can "place" meanings on the recipients. In reality, the intent of the person attempting to "do" sensegiving and the interpretations and response of those on the receiving end remain only loosely coupled, unless participants make use of what are normative behaviors for that particular context. Thus to understand how the cognitively skilled practitioner shapes processes of deciding requires not only getting to grips with processes of sensewrighting but also acknowledging how these efforts are shaped and limited by processes of sensereading (Pye 1995). Clearly, sensereading is an active process, not a passive one, intimately intertwined with sensewrighting which in turn is located in a particular context where particular norms pertain at a particular time. Cognitively skilled practitioners know they are acting within limitations and, at best, can only limit the range of "random response" (Peckham 1979; Sederberg 1984). In other words, they aim to reduce the number of different interpretations that might arise. As Mangham and Pye (1991: 28) observed:

> we know roughly what to expect from others in the enterprise in which we work and they know, roughly, what to expect from us. What they do and what we do, therefore, is shaped by these mutual expectations. The entire enterprise is created and sustained through a dialectical process with our responses both creating and being created by the responses of others.

Hence the sense made of an action or utterance depends on the context of recipients and their existing understandings and interpretations. Change research in particular is increasingly revealing the limitations of senior management hegemony and control. Balogun and Johnson (2005) argue:

> Those lower down in organizations are active shapers of the way initiatives develop. Senior managers may be institutionally empowered to introduce novel templates in an attempt to redirect understandings, but their hegemony may be constrained by alternative recipient narratives.

It is, therefore, more appropriate to talk of attempting to "align interpretations" (Balogun and Johnson 2004; Balogun 2006) than managing meaning.

Skilful practitioners: influencing meaning and aligning interpretations

To understand the relevance of viewing the way chief executives or others behave during deciding in terms of limiting the range of random responses through ongoing sensewrighting and sensereading, it is important to stay with the argument that people cannot *give* sense, per se. The next illustration is of a chief executive appointed to a FTSE 100 manufacturing company, to head a much-needed phase of strategic renewal, building on a period of radical change, with shareholders and the annual results calendar driving much of the timing. However, within a few weeks of taking up his appointment, he set off to Australia for a fortnight, to complete a series of outstanding engagements from his previous employment, leaving his new team to come up with a strategic plan by the time of his return. For some, this could be seen as a complete abdication of his responsibility as leader of the enterprise; for others, it could be seen as maximizing the wealth of corporate experience and insight embodied in the senior management team. His actions and the responses of his team together sustained the latter view, consistently defining his role as facilitator rather than director of change and with hindsight, team members expressed how empowered and valued they felt in taking forward strategic change within the company.

While leaders may not be able to land a particular "sense" on an individual's desk, depending on their power resources and the quality of their relationships, leaders may be able to limit the range of alternative senses available to others, so as to increase the likelihood that they can ultimately achieve some alignment in interpretations. Framing a position or argument is important, and some senior decision makers do it very skilfully, sometimes almost without knowing or noticing and sometimes with a lot of forethought and stage management—almost game playing. For example, the chairman who says, "Let's pool our views on this one. I think we should do ... how about you?" probably knows exactly how she or he is limiting and shaping the response of others. In our experience, skilled practitioners, like this chairman, appreciate the subtleties of power and influencing.

Hardy (1996) offers some theorizing to help make sense of influencing occurs by drawing on Lukes (1974), distinguishing between three types of power—resource, process, and meaning. Resource power is to do with overt decision making, enacted through the use of resources, such as funds, information, or credibility; for example, the capacity to hire, fire, reward, punish, provide funds, expertise, and so on. In addition, those who control the agendas of meetings, for example, are able to draw on process power so that other actors are effectively prevented from participating and, therefore, influencing decision making.

The third dimension—meaning—is to do with symbolic power and the use of symbols, rituals, language, and co-option, for example, to shape perceptions, cognitions, and preferences (Pfeffer 1981). Symbolic power involves an unobtrusive "ability to define reality, not only for oneself, but for others" (Hardy 1985: 390). As such, it is more about inhibiting opposition or getting cooperation through a process of symbol construction designed to legitimize one's own actions and delegitimize those of opponents (Pettigrew 1992) than it is about defeating declared opponents. It is less

about agenda setting, for example, than shaping the language and thought processes through which any agenda item is constructed and examined. Symbolic power is similar to the notion of dramaturgical power (Mangham 1986; Clark 1995) that conceives of individuals as performers or actors on a stage, presenting a (different) character to various audiences, inviting them to believe in the reality of the performance. This is where the skills of improvizational artistry can create opportunities for sensewrighting (Mangham 1986). It places a focus on the process through which people seek to work with props, scripts, norms, resources, language, characters, and characterization to shape meaning.

All three types of power are closely interrelated and interwoven in daily life such that it is unhelpful to seek to distinguish them. However, it is the third type of power that is most interesting for studies of deciding—not just because of its obvious relevancy to framing, sensereading, and sensewrighting, but also because the idea of power as creating legitimacy warrants greater attention (Hardy and Clegg 1996). This is in part because despite the fact that writers have paid attention to the concept of meaning power, they still tell us little about how skilled practitioners actually work with it. How those with resource and process power at their disposal act to influence is fairly well understood and transparent to both to academics and practitioners. For example, if someone can affect materially others' interests (e.g., promotion chances and future pay rises), they are unlikely to be challenged by such potentially vulnerable individuals. Yet how skilful people shape meanings and interpretations to suppress evident conflict and inhibit potential conflict through the more subtle and hidden means of symbolic power, limiting the range of responses, is less clear to both of these communities.

Bringing together the notion of the power of meaning with the concept of framing highlights the need for decision makers to operate within dynamic and shifting power relations, since the exercise of this third aspect of power is a skill available to both leaders and others (Pye 2005). Power can no longer be conceived of just in terms of a (relatively) autonomous subject (e.g., a leader or a senior manager) mobilizing different dimensions of power in the form of resources, processes and meaning. Individual managers become an effect of power constructed by resources, processes and meanings (Balogun et al. 2005). This systemic view sees power as diffused throughout the organizational social system (Clegg 1989; Lawrence et al. 2007), exists relationally, as something that rather than as a property vested in or possessed by individual, autonomous actors. Mangham (1986) draws on a boardroom dialogue to illustrate this point. In the conversation two characters, Paul (Managing Director) and George (Finance Director) are locked in a debate about the financial situation of their company. Paul becomes increasingly annoyed with George as he refuses to back down in response to Paul's "cues" suggesting that George should adopt Paul's interpretation of the figures (we are doing OK) as opposed to his own (we are heading for "a thumping great loss"). George does give in—but the point is that there is only a power relation between Paul and George because George is prepared to yield. The consequences of not yielding could be bad for George but he could choose not to do so if he were prepared to go

against the established and taken for granted norms of interaction within the senior management team.

Power needs to be studied as a socially situated activity, since even those who are skilful manipulators of different power dimensions are subject to the taken-for-granted or naturalized acceptance of received wisdom, both within and beyond their own organizations (Hardy 1996). To be skilled at sensewrighting, it is also necessary to be skilled at sensereading—in other words, to be able to understand the social order in one's particular sphere of operation, and to use it to good effect. In this way, some people who may not be nominally as powerful as others may still exercise significant influence.

Balogun et al. (2005) show how change agents adept at sensereading use their knowledge and skill to exercise greater sensewrighting ability. One of their change agents described his organization as run by "money men", in other words, an organization with a culture that places priority on the bottom line, and then explained how he got their attention for his programs,

> The issue with pensions, for example, is for us a couple of hundred million pound impact and the value of the pension fund is about the same as the market capitalisation of the fund. So that gets senior management attention ... In the US you have very high medical costs ... 25% of the profits were related to a cost you need to control.

He also described how he manipulated a meeting to get support from (resistant) others,

> I think this time I had a pretty strong and clear message and one of my managers was great and played "good cop, bad cop". I was the bad cop. I gave the tough message and set her up to be more consulting and help people get through it.

This research into change agents shows the importance of activities such as stage management, agenda aligning and selling, gathering intelligence, and managing up: the more constrained people perceive themselves to be from their reading of their context of action (in the sense that they are not vested with more overt resource and process power), the more they need to rely on backstage activity and improvisation (Mangham and Pye, 1991). Like other research, it shows the role of language is critical in developing shared action, if not shared meaning, through alignment with a common goal; although coordinated action is not necessarily underpinned by shared meaning (Pye 1993), it can result from shared communication mechanisms (Donnellon et al. 1986), Those in charge can exercise managerial hegemony, in as far as it exists, through goal alignment towards the support of a particular set of actions that would not have received support otherwise. However, a focus on supposedly "privileged voices" (Weick 1995) may obscure the complete story of deciding (Gore et al. 2006).

Individual actors must not be overlooked in this analysis as identity affects improvisation. "From the perspective of sensemaking, who we think we are (identity) as organizational actors shapes what we enact and how we interpret, which affects what outsiders think we are (image) and how they treat us, which stabilizes or destabilizes our identity." (Weick et al. 2005:

22). Pattriotta and Spedale (2006) draw on this argument to illustrate how deciding is shaped by processes of identity construction. They present a case study of a task force comprising different groups of experts convened by an oil company to develop a framework for a full field development study. The case shows how the task force was distracted from its convened purpose, into a struggle between the different experts as to the identities they wanted to portray (and the roles they therefore wanted to take in the task force). Each expert jockeyed for position by challenging the identities presented by the other experts, whilst simultaneously presenting themselves as an expert in their particular field, but also as able to cover the range of activity required in the task force. So, for example, one member challenged the strategist about his relevance to the group given the remit of the task force. They sometimes resorted to direct attacks on the competence of other task force members to legitimize themselves and simultaneously delegitimize others. Pattriotta and Spedale also show how task force members drew on their identities as "experts" to legitimize their definition of particular terms above the interpretations of others.

As these case examples illustrate, the study of deciding must not be divorced from consideration of the decision makers involved: it must consider not just the information processing focus on, for example, an individual's personal preferences, biases and heuristics, but also decision makers' identities (projected and imposed) and their social skills and capabilities. Each decision maker is working within a tangled web of individual and collective cycles of sensereading and sensewrighting. Cognitively skilled decision makers usually negotiate and seek to shape this jumbled net of meanings and shifting power relations in such a way as to broadly gain acceptance for their position and get some form of shared support for action or a particular point of view from the different parties involved. However, as the opening case of the FTSE 100 retail CEO illustrated, there are occasions when competing logics do not get resolved or reconciled and the range of responses becomes too random and widespread, such that shared meaning or support for action is not sustained. At this point, the cognitively skilled actor who lacks strong allies (a key power resource) may decide to walk away and ultimately, as happened in this case, watch the identities of the chairman and the deputy chair change dramatically as the power balance shifted further towards shareholders, leading to a very different definition of the situation.

In conclusion: researching deciding

Although computational and interpretive perspectives on organizational cognition are both necessary in order to generate a more comprehensive account of organizational decision making and other cognitive processes (Lant and Shapira 2001a, b), presently these perspectives remain largely disconnected from one another. This chapter has argued that drawing on sociological insights is one way of achieving the integration that is much needed to advance understanding and the practice of organizational deciding; providing a conception that is both more inclusive (i.e. putting the organization and the manager into organizational cognition and decision making) and injecting greater agency and process orientation into the equation. The aim has been to highlight an oft-overlooked aspect of

decision-making research—the aligning of interpretation and influencing processes, conceived here in terms of sensereading and sensewrighting, as exercised by skilled practitioners. It is only in following the shifting dynamics of sensereading and sensewrighting over time and in context that it is possible to observe and monitor skilful practice, and its impacts and outcomes. Conventional analyses of decision making are not only more static, they lose the significance of time and context that are crucial to sense made and lack the colorful characters, who breathe life into the processes of deciding. Thus this chapter has argued the focus should be on making sense of deciding rather than decision making, acknowledging the interrelationship between cognitively skilled practitioners and continuing organizational processes rather than as a series of separate decision-making episodes.

The inclusion of a sociological lens on decision making is consistent with the broader practice turn in sociology and management research, and in particular, the growing strategy as practice perspective (Whittington 2006; Balogun et al. 2007; Jarzabkowski et al. 2007; Johnson et al. 2007). This perspective argues for a return to a study of strategists, their day to day activities and practices, and how these activities influence strategic outcomes. It builds on the practice turn and the interest in "rehumanising management" to conceive of strategizing as a situated social activity. This places a focus on strategic practitioners (their skills, knowledge, identities, personalities, etc), their practices (the resources, concepts, and discourses on which strategists draw from within their organizations but also more broadly institutionally and socially), and their praxis (the day to day activities of strategists).

Reviews of research within this perspective to date (Balogun et al. 2007; Jarzabkowski et al. 2007) reveal that it is hard to maintain all three of these aspects in simultaneous focus during research. The area in which there is least understanding is probably the practitioner and the impact of themes such as, their identities or their skills and knowledge, on what they do. This is a challenge that research on deciding also faces. Yet as this chapter highlights, to understand deciding, researchers need to grasp not only such aspects as an individuals' levels of self-awareness about what he or she projects but also how others read those individuals and the outcomes this creates. There is a difference between "naive" practitioners who do not understand what images they project on to others, and skilled practitioners who not only understand but are able to manipulate such images as and when required. This observation returns us to our point of departure—to individual people—the skilled decision makers who often have to work as a collective, within a mesh of dynamic and shifting power relationships. It also accords with the underlying ethos of research on naturalistic decision making (Lipshitz et al. 2006). While simulations can and do reveal certain aspects of the decision-making process, and provide more detail on particular aspects of that process, understanding the cognitively skilled decision maker also requires more studies of deciding and those doing that deciding in "real world settings." This in turn points to studying deciding as situated practice through ethnographic or ethnomethodological approaches (Alby and Zucchermaglio 2006) also common in studies of naturalistic decision making. The authors of this chapter hope the case made here for making

sense of deciding will provide some much needed lifeblood for nurturing such future research.

Endnote

1 These include: a study of top management teams and board members of large UK listed plcs (Pye 2002); a study of a top management team managing chance in an NHS acute hospital (Bate et al. 2002); a study of change agency (Balogun et al. 2005); and a study of strategy making based on scenario planning (Hodgkinson and Wright 2002, 2006).

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Reading 20: Intuition in strategic decision making: friend or foe in the fast-paced 21st century?

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Executive overview

Many executives and managers embrace intuition as an effective approach to important decisions. Indeed, recent surveys and business press articles indicate broad support for the use of intuition when making strategic decisions. The need for quick decisions, the need to cope with demands created by complex market forces, and the assumed benefits of applying deeply held knowledge combine to create strong perceived value for the intuitive approach. Intuition, however, has not been subjected to sufficient review, particularly in a forum for executives and other managers. This article responds to the need for critical evaluation. Utilizing holistic hunch and automated expertise as two fundamental definitions, our review evaluates intuition's costs and benefits in light of an organization's goals. Drawing evidence from the fields of behavioral decision making, strategic decision making, and mental modeling, our conclusions suggest intuition is a troublesome decision tool. To contribute to effective managerial practice, we offer tactics that decision makers can use to make intuitive judgments and choices less troublesome.

> "The really valuable thing is intuition."
>
> Albert Einstein

In the 1950s, a previously insignificant moped and motorcycle company named Honda exploded onto the Japanese scene using effective production technologies and offering customers aesthetically pleasing designs. By the decade's end, after having captured the hearts and minds of the Japanese with its small 50cc motorcycle, Honda had moved past its toughest competitors to capture the largest share of the domestic market. With a strong domestic base as the foundation, Honda's leadership turned the firm's attention to the U.S. market. Two emissaries were dispatched to investigate:

> We dropped in on motorcycle dealers who treated us discourteously and in addition gave the general impression of being motorcycle enthusiasts who, secondarily, were in business. There were only 3,000 motorcycle dealers in the United States at the time and only 1,000 of them were open five days a week. The remainder were open on nights and weekends. Inventory was poor, manufacturers sold motorcycles to dealers on consignment, the retailers provided consumer financing, after-sales service was poor. It was discouraging. . . . My other

> impression was that everyone in the United States drove an automobile – making it doubtful that motorcycles could ever do very well in the market.[1]

From the perspective of the business fundamentals associated with successful market entries, what Honda's advance scouts found was discouraging. In spite of this, the scouts believed that Honda could achieve success. Ignoring the competitive obstacles that were discovered in the U.S. market, ignoring the fact that success in Japan had been built largely on small cycles while Americans demanded large cycles, ignoring Toyota's recent failure in the U.S. market, and ignoring biting skepticism from key government officials and others, the leader of the Japanese discovery team pushed forward:

> I reported my impressions to Fujisawa [co-head of Honda] — including the seat-of-the-pants target of trying, over several years, to attain a 10 percent share of U.S. imports. He didn't probe that target quantitatively. We did not discuss profits or deadlines or breakeven. Fujisawa told me if anyone could succeed, I could and authorized $1 million for the venture.[2]

In the minds of many, this well-known tale of Honda's entry into the U.S. motorcycle market illustrates intuition's power in strategic decision making. Honda's scouts saw a discouraging picture but felt they and their firm could be successful in spite of the odds. The discouraging analyses from government officials didn't sway them from feeling they had the resolve and capabilities required to achieve competitive success. They felt that risking some of Honda's precious resources to pursue "success against all odds" made sense. In hindsight, with knowledge of the story's resolution, it's easy to construct rational arguments for why Honda should have moved forward. At the time, however, the course of action the firm should have followed wasn't as clear.

Additional examples of intuition in strategic decision making are all around us. Ignoring recommendations from advisors, Ray Kroc purchased the McDonalds brand from the McDonald brothers: "I'm not a gambler and I didn't have that kind of money, but my funny bone instinct kept urging me on." Ignoring numerous naysayers and a lack of supporting market research, Bob Lutz, former president of Chrysler, made the Dodge Viper a reality: "It was this subconscious, visceral feeling. And it just felt right." Ignoring the fact that 24 publishing houses had rejected the book and her own publishing house was opposed, Eleanor Friede gambled on a "little nothing book," called *Jonathan Livingston Seagull*: "I felt there were truths in this simple story that would make it an international classic."[3]

Consistent with these stories, many academic researchers, business writers, executives, and managers champion intuition as a key part of strategic decision-making effectiveness. One noted intuition researcher,[4] for example, assembled an edited volume filled with testimonials supporting intuition. A set of business authors[5] highlighted the faith that Herb Kelleher, the legendary founder and former CEO of Southwest Airlines, placed on intuition, originality, and creativity. Kathleen Eisenhardt,[6] a well-known strategy researcher, argued that collective intuition among members of a management team contributes to the group's ability to quickly recognize

strategic issues such as evolving environmental opportunities and threats. Leonard and Sensiper,[7] also well-known strategy researchers, suggested that intuition plays a role in a firm's efforts to innovate. This is significant, in that innovation is a potential source of an important competitive advantage for companies across industries as they compete in the increasingly complex global economy. Finally, a chronologist of what some perceive to be history's greatest management decisions argued that intuition played a key role in each instance (e.g., Akito Morita's decision to develop the Sony Walkman in spite of internal opposition, Johnson & Johnson's rapid decision to pull Tylenol from store shelves at a cost of $100 million).[8]

With success stories readily available, and with common sense suggesting intuition's necessity in times of change, intuitively dominated decisions are likely to increase in the fast-paced 21st century. Indeed, recent commentaries in the business press and in the applied academic literature support this assertion, as do many surveys of executives and managers.[9] In a recent survey of executives, search-firm Christian and Timbers found that almost half of corporate executives use intuition more than formal analysis to run their companies.[10]

On the face of it, greater reliance on intuitively dominated decisions would seem to be a good thing. But is it? Are the popular stories of intuition representative of all or even the majority of such stories? Are the common-sense arguments and the limited systematic empirical data supporting intuition's use in the face of change as sound as they seem? Importantly, intuitive decision makers cannot explain why they feel the way they do or why they make the choices they make. Through recent interviews in several major U.S. companies, Hayashi,[11] for example, showed that executives could not articulate how they made decisions that defied logical analysis. As noted by Leonard and Sensiper,[12] the common element of "knowing" that results from tacit knowledge and intuition "is the inability of the knower to totally articulate all that he or she knows." In sum, at the core of intuition is a set of insights and understandings that is not known fully to its owner.

Given the conditions surrounding intuitive decisions, can we conclude confidently that sound thought processes are at work? Beyond this, what is the significance, if any, of the deficiencies that are ascribed to some intuitively derived decisions (e.g., impatience, rapid decision closure, and failure to solidly consider all relevant decision situation. facts)?[13] As some argue, is the value of decisions put at risk when they are made on the basis of intuition? If so, should intuition be pulled more selectively and less frequently from the manager's tool kit to make decisions, especially those with strategic implications? Research in fields such as behavioral decision making, strategic decision making, experimental economics, and mental modeling suggest caution.[14]

Our purpose in this article is to offer decision makers a critical review of intuition in the context of strategic decisions. Decisions involving significant allocations of resources that require time to implement and affect the firm's chosen competitive space are examples of ones commonly thought to have important strategic implications. We believe this review's contents have the potential to contribute to improvements in managerial practice in terms of the making of effective decisions. This review should be timely because

intuition has attracted increased attention in practitioner-oriented articles over the past several years, but with a decidedly positive bias.

Our analysis carefully frames basic questions about intuition's structure, process, and effectiveness. First, we present two fundamental definitions of intuition. This is a crucial first step, because intuition has been defined in different ways. Many authors and managers, however, either use a generic definition or mix very different definitions together, making it difficult to generate usable insights about any particular type of intuition. Next, we examine intuition's value to strategic decision makers as they (1) attempt to explore for new technologies and strategies, and (2) attempt to further exploit their organization's existing technologies and strategies. By using the explore-exploit framework from the field of organizational learning, we explicitly take into account what an organization is trying to accomplish in its decision-making processes. Combining two leading definitions of intuition with this framework provides a useful lens through which to view intuition. Finally, we offer managerial tactics to address the pitfalls of intuition that were identified through our critical analysis.

What is intuition?

Neither the opposite of rationality nor a random process of guessing, intuition corresponds to thoughts, conclusions, or choices produced largely or in part through subconscious mental processes.[15] Although informative, this description belies intuition's richness—as a concept and as a mental tool that is separate from explicit logic and judgment.

At a minimum, intuition can be conceptualized in two distinct ways: as holistic hunch and as automated expertise.[16] Perhaps the most popular conception of the term, intuition as holistic hunch corresponds to judgment or choice made through a subconscious synthesis of information drawn from diverse experiences.[17] Here, information stored in memory is subconsciously combined in complex ways to produce judgment or choice that feels right. Novel approaches, changes in directions, and/or actions that run counter to prevailing thinking or data are often involved. "Gut feeling" is often used to describe the final choice. In the Honda story presented earlier, the advance U.S. scout team had just this type of feeling. Similarly, Ray Kroc when purchasing the McDonald's name and Bob Lutz when pursuing the Viper felt they were right and that they would be successful, despite evidence and opinion to the contrary.

The subconscious process involved in holistic hunch is not well understood. Roy Rowan,[18] a noted intuition researcher, described the process as:

> Intuition is knowledge gained without rational thought. And since it comes from some stratum of awareness just below the conscious level, it is slippery and elusive, to say the least. … New ideas spring from a mind that organizes experiences, facts, and relationships to discern a [mental] path that has not been taken before.

Intuition as automated expertise is less mystical, corresponding to recognition of a familiar situation and the straightforward but partially subconscious application of previous learning related to that situation. This form of intuition develops over time as relevant experience is accumulated in

a particular domain (e.g., investment banking where a number of situations become familiar over time). Early on, explicit analysis is used to identify and process key factors, but as experience increases over time, such analysis becomes more rudimentary while subconscious processing of the details emerges as a larger component. Learning to ride a bicycle, drive a car, and manage an investment portfolio can all exhibit this progression. Essentially, accumulated expertise leads to some steps in the analysis being dropped while others are completed in a rapid, subconscious fashion.[19] When, for example, a veteran firefighter approaches a burning building, she/he will typically recognize a pattern and select an approach to fighting the fire that fits the pattern. In selecting the approach, expertise is brought to bear but without a full-blown explicit analysis of the situation. Much of the mental work occurs subconsciously, as becomes clear when veteran firefighters are asked to explain their thought processes.

They simply cannot do so without a great deal of probing and prompting by a researcher, reporter, or other interested party.[20]

Overall, the key to automated expertise lies in a person's quick identification of a familiar situation, and subsequent automatic access and application of stored knowledge related to the situation. Unlike holistic hunch, novel insights, new syntheses of information, and inspired conclusions are not major parts of the story. In his famous example of chess grandmasters, Herbert Simon,[21] a Nobel Laureate, put it this way:

> Recognizing the pattern [on the chess board] brings to the grandmaster's mind at once moves that may be appropriate to the situation. It is this recognition that enables the professional to play very strong chess at a rapid rate. Previous learning that has stored the patterns and information associated with them in memory makes this performance possible. This, then, is the secret of the grandmaster's intuition.

Table 1 summarizes our descriptions of the two types of intuition.

Table 1: Types of intuition

Type of Intuition	Definition	Example
Holistic Hunch	Judgment or choice made through a subconscious process involving: (a) synthesis of diverse experiences, (b) novel combinations of information, and (c) strong feelings of being right	Chrysler's decision to develop an automobile very different from others at the company – the Dodge Viper
Automated Expertise	Judgment or choice made through a partially subconscious process involving (a) steps borne of past situation-specific experiences, (b) a replay of past learning, and (c) a feeling of familiarity	Chevy Chase Bank making routine commercial loan decisions for existing large customers

What is intuition's value?

For many, intuition is intrinsically appealing. After all, it characterizes the heroic gambler in the case of intuition as holistic hunch and the well-traveled expert in the case of automated expertise. With respect to the use of intuition to make strategic decisions, though, the reality is more complex. Below, we explore the value of holistic hunch and automated expertise in situations where an organization is focused on exploring the environment for new technologies and strategies. We then examine the value of these two forms of intuition in situations where an organization is focused on exploiting existing ways of doing things. Our analysis suggests that holistic hunch, if handled properly, can be valuable for exploration while automated expertise can be valuable as a starting point for exploitation but must be made explicit for decision-making success.

Exploring for new technologies and strategies

In the glow of increasing returns to experience, an organization may overemphasize its current technology and strategy while failing to prepare for alternative futures. This is the old problem of adapting to current circumstances while failing to maintain a reasonable amount of ongoing flexibility for the future. One way to avoid the problem of overemphasizing current technology and strategy is for the firm to commit significant resources to a goal of exploration, which involves "search, variation, risk-taking, experimentation, play, flexibility, discovery, [and] innovation."[22] More generally, exploration involves searching for and trying new ways of doing things. Although organizations may go too far, thereby risking too much experimentation, exploration is important in coping with possible and actual dramatic change in the environment.

Nypro, a world class plastic injection molding company, is a good example of an organization with a history of periodic exploration. To compete effectively, Nypro has experimented with clean-room technology, advanced technology for molding multiple types of plastic in a single molding operation, and a strategy for economically extending its work into the low volume segment of the industry.[23] In many instances, Nypro's actions have been novel to the industry, and have been created to cope with, stay ahead of, or perhaps even shape an industry's changing dynamics in ways that are highly beneficial to its own competitive success.

Intuition as holistic hunch when exploring

Intuition as holistic hunch could play a supportive role when an organization has adopted exploration as a goal. Playing hunches often involves actions consistent with exploration: 1) risk-taking; 2) experimentation with novel approaches; and/or 3) variation in an organization's experiences through departures from current practice. Indeed, of the four circumstances we examine (hunch in situations of exploration and exploitation and automated expertise in situations of exploration and exploitation), intuition as holistic hunch in combination with an exploration goal would seem to provide the best opportunity for positive outcomes of intuitively driven decisions. In spite of this optimistic observation and subsequent expectation, obstacles do exist.

As the stories we used in the opening of this article suggest, hunches can pay off in substantial ways. Research on the Mann Gulch fire jumper disaster further illustrates the point,[24] and connects hunches more explicitly to exploration. In the 1949 Mann Gulch disaster, a smoke-jumping crew parachuted to a remote, western U.S. fire believed to be relatively small. Following the collection of their dispersed tools and a quick meal, they began to move in the direction of the fire. About 30 minutes later, the leader of the group, a man named Dodge, realized the fire had jumped from one side of the gulch to the other and was moving towards the group at a rapid rate. After ordering his men to turn and work their way up the side of the gulch Dodge sensed the severity of the situation and the need for a novel approach. He then acted on gut feel. Rather than continue to try to move away from the fire, now advancing through the tall grasses at approximately 600 feet per minute with 30-foot high flames, Dodge told his crew to drop their tools and join him in an area he had just set on fire. His tactic of burning grasses to reduce combustible fuel, and lying in the burned area while the primary fire passed, was not part of fire training at the time, nor had Dodge had any prior experience with it. Dodge needed to take a risk, create variance from plan, and experiment with a new direction. His hunch, based on past experience with fire but not a straightforward replay of past learning, proved wise.

The Mann Gulch story, however, also points up the danger of untested gut instinct in exploration. Dodge saved his life by acting on intuition, but none of his crew followed his lead. Instead, they ignored his instructions and ran for the ridge at the top of the gulch. Most of them perished. Because individuals acting on or attempting to sell hunches to other involved parties are often unable to say exactly why the hunch makes sense, commitment to the hunch by others may be problematic, certainly in the short run.

A second problem, infrequently discussed in articles written for executives and managers, is that hunches are often flawed. Although generally positive on intuition, the author of a recent article[25] did point out that "[Executives] ... will be the first to admit that their instincts, are often plain wrong." In another article, this one taking an overall negative stance, the author summed up the state of the world very accurately: "We remember the examples of hunches that pay off but conveniently forget all the ones that turn out badly."[26] Examples include FedEx's Fred Smith launching ZapMail and America Online's Pittman believing that advertising revenue rather than subscriptions would be the key to success.

A high rate of failure, though, is not necessarily bad for exploration. Failure, and learning from it, is part of the exploratory approach, because not all experiments can be expected to yield positive results. With a great deal at stake, however, and with an outcome distribution that seems to have many substantial failures, some substantial successes, and not much in the middle, decision makers must seek ways to maximize decision success as a vital component of minimizing the firm's downside risk. We return to this point below.

Intuition as automated expertise when exploring

Exploration finds firms seeking new technologies and strategies. Because automated expertise involves the application of previous experiences and approaches in familiar ways and places, it would seem to fall short in providing the raw material for exploration. It is simply the wrong tool from the toolbox. This is not to say that firms consistently avoid over-reliance on automated expertise when exploration is called for. Clearly, U.S. Steel in the face of mini-mill technology and General Motors in the face of Japanese innovations used automated expertise in many areas of their firms, including upper-echelon management, when they held onto outdated technologies and strategies for too long. In such cases, business executives often fail to see that familiar situations have fundamentally changed, creating a need for novel decisions and actions.

Suggested managerial actions

Exploration is critical for organizational success. For some companies, a substantial amount of exploration is required to remain viable in the face of an environment that changes dramatically on a frequent basis. Firms competing in fast-cycle markets, where it is extremely difficult to sustain competitive advantages, are examples of such companies. For other firms, less exploration is required. In both cases, nurturing effective exploration is difficult. Intuition as hunch can play an important role in the process, but it must be managed carefully. Intuition as automated expertise is not likely to be helpful in promoting exploration.

To make acting on hunches as useful as possible, the problem of limited commitment among those affected by the decision and the problem of high failure rate must be directly confronted. To handle low commitment, inspirational stories and an organizational culture supporting risk taking and failure are two promising tactics. Story telling is a key tool of persuasion and influence, because good stories capture the imagination and trigger emotional responses.[27] Importantly, good stories often follow a simple formula that executives and managers can easily master. A typical story begins with a central character or organization that is basically doing well. Next, a key event occurs that threatens success. From this point, the story is about efforts to understand and effectively confront the forces opposing the individual's or organization's success. In the words of Robert McKee, a world renowned screenwriting coach, a good story "describes what it is like to deal with these opposing forces, calling on the protagonist to dig deeper, work with scarce resources, make difficult decisions, take action despite risks, and ultimately discover the truth."[28] Thus, in the context of selling a choice based on hunch, the key would be to craft a story describing threatening forces that are forcing bold action. McKee has found emotional engagement and commitment to be highest when a story involves threatening forces and the possibility of a better future after overcoming those forces.

Beyond telling an inspirational story to help sell a strategic decision made on the basis of hunch, upper-echelon executives could develop an organizational culture supportive of risk taking and failure. Such a culture promotes the idea that winners take risks and sometimes fail. This type of culture may make it easier to gain commitment for hunch-driven experiments

at all levels of the organization, since viewing experimentation positively would be commonplace. To create the appropriate culture, top leaders can openly and consistently support individuals who have played a hunch and lost, and they can ensure career mobility for those people.[29]

Importantly, the culture described above does not value thoughtless playing of hunches. Peter Drucker, the noted management thinker, put it this way: "I believe in intuition only if you discipline it. The 'hunch' artists, the ones who make a diagnosis but don't check it out with facts, with what they observe, are the ones ... who kill businesses."[30] Individuals who thoughtfully play hunches are not ignorant of available data and other facts. They simply have made the judgment that data and facts are incomplete, somehow misleading, or otherwise fail to provide effective, clear guidance.

Several academic frameworks suggest intuition as hunch is important in situations calling for exploratory behaviors, and in most cases these frameworks call for careful consideration of the hunches prior to their being acted upon. A framework focused on organizational interpretative styles,[31] for example, suggests using trial and error driven by "intuition and hunch" if an active approach to an unanalyzable environment is desired. A framework focused on strategic planning suggests intuition as hunch is important when planning for ambiguous futures.[32] An important framework focused on self-designing organizations implies that intuition as hunch is important for organizations attempting to promote risk-taking and adaptability.[33] In all of these frameworks, conversations among key individuals and collective understandings are important. Unexamined intuition is not valued.

Turning from the commitment problem to the problem of failure rate, ensuring action independence and combining fast feedback with slow learning are two meaningful tactics.[34] Action independence simply means an experiment that fails will not burn the house down. In other words, the possible negative effects of a hunch-based decision should be manageable. Betting the entire firm on a hunch is not wise. Using "probes" to test a market and to assess competitors' reactions to hunch-based decisions can positively inform the wisdom of various future decision possibilities. In the stories used to open this article, failure would not have brought disastrous effects. Honda, for example, probably would have survived as a company if its foray into the U.S. motorcycle market had failed. The firm would have been wounded, and the costs would not have been trivial, but Honda likely would have survived. Toyota survived after having this type of U.S. failure in the late 1950s.

Combining fast feedback with slow learning simply means that executives and managers should closely monitor the results of a hunch-based decision (fast feedback) but should not be quick to reverse the decision even if initial results are not as positive as hoped for (slow learning). A fact of organizational life is that new approaches, changes in direction, and so on have significant learning curves. Allowing events to unfold, especially under the protection of action independence, has the potential to yield substantial dividends.

For a summary of our arguments and advice related to intuition as a tool for exploration, see the first column of Figure 1. Next, we examine intuition in situations where exploitation is the goal.

	Exploration Focus	Exploitation Focus
Holistic Hunch	Likelihood of departure from past practices inherent in holistic hunch can yield positive outcomes in a situation calling for discovery, innovation, risk-taking, and experimentation, but problems related to low commitment and a high failure rate must be confronted Advice: To overcome the commitment problem, use story telling and a culture supportive of risk-taking and failure; to deal with the high failure rate, create action independence, and adopt an approach of fast feedback but slow learning	Mystical characteristics of holistic hunch yield difficult to predict outcomes in a situation calling for straightforward use of past learning Advice: Rebuild decision process to limit role of hunch
Automated Expertise	Emphasis on past learning in automated expertise yields disappointing outcomes in a situation calling for discovery, innovation, risk taking, and experimentation Advice: Rebuild decision process to limit role of automated expertise	Reliability and validity problems associated with automated expertise yield somewhat unpredictable outcomes in a situation calling for straightforward use of past learning Advice: Raise decision process to an explicit level through standard decision tools such as devil's advocacy, multi-attribute decision analysis, root-cause analysis, and/or the tactic of seven why's

Figure 1: Intuition in organizations

Exploiting existing technologies and strategies

Over time, investments in existing technologies and strategies tend to accumulate as organizations seek to leverage past decisions and outcomes. Essentially, organizations exhibit increasing returns to experience, promoting sustaining rather than dramatic changes in current ways of doing things, or what economists call path dependence. With prior decisions and investments being leveraged, exploitation of current capabilities can be positive, at least in the immediate and possibly the intermediate future.[35] Exploiting existing capabilities involves working in familiar terrain, where events and outcomes can be evaluated against a backdrop of substantial prior learning.

Intuition as automated expertise when exploiting

As an adaptive process, exploitation finds organizations and their decision makers focusing on issues related primarily to execution and building on past investments. Efficiency improvements in organizational routines, refinements to how key tasks are performed, and incremental market responses and initiatives are the emphases as organizations seek success by exploiting existing capabilities. Given this, the first take might be that intuition as automated expertise complements the exploitation of current capabilities. Use of automated expertise in decision making involves the application of previous learning in a straightforward, albeit partially subconscious, fashion. Patterns and situations where previous learning applies are recognized and the learning is used without the individual(s) being fully aware of the underlying mental work. Breaking away in radically new directions is not part of the story. Such characteristics of automated

expertise seem perfectly matched to situations where the organization's goal is to exploit existing capabilities. Several problems exist, however, for organizations relying on this form of intuition in strategic and more general decision making.

Reliability, which corresponds in this context to the consistency with which a decision maker uses past learning over time, is one problem for intuition as automated expertise. Memory failures, fatigue, information overload, and distractions can create inconsistencies in how a manager or executive uses prior learning when that learning and its application are not raised to an explicit level.[36] Such inconsistency creates judgment errors.

Although not directly focused on strategic decision making, the long-standing research tradition focused on unaided expert judgment illustrates the problem. In this research tradition, experts are asked to evaluate cases that are representative of those found in their daily work. Because these experts are asked to evaluate a number of cases and to use their experience, some subconscious processing likely takes place (i.e., automated expertise is used). In one study, for example, radiologists judged the extent of malignancy in gastric ulcers.[37] With the same X-rays being presented to the same individuals for a second evaluation after one week, the typical radiologist's consistency was only .59 on a zero to one scale.[38] Thus, initial diagnoses of potential cancers were changed frequently. In another study, tax accountants judged the degree of legality for various capital-gain treatments.[39] With the same tax cases being presented for a second evaluation after a month or two, the typical accountant's consistency was .77. In a third study, auditors judged degree of financial control.[40] With the same audit cases being presented for a second evaluation after only a few minutes, the typical auditor's consistency was .59.

Summarizing research on the reliability of unaided professional judgment, a recent study[41] reported average consistency of only .61 across medical, meteorological, human-resource, and business decision making. This lack of reliability could be costly as the implied errors cause deaths, criminal fines, billions of dollars in business losses, and so on.

Validity is a second problem for automated expertise. Beyond random inconsistencies in the application of past learning (the reliability issue), fundamental difficulty in fully understanding key cause-effect relationships causes poor judgments/ choices for managers and executives who do not raise issues to an explicit level.[42] Again, research on unaided expert judgment illustrates the issue.

In a study of stock market returns, security analysts exhibited predictive validity of only .23,[43] meaning the correlation between the typical analyst's predictions of market returns and actual market returns was only .23. Statistically removing the analysts' random inconsistencies (the reliability problem) yielded a slightly improved validity of .29. A formal mathematical model that was independent of the analysts, however, had a predictive validity of .80. The difference between .29 and .80 represents systematic error in the analysts' judgments of the companies under examination. In, a study of the number of annual advertising pages in a magazine, executives involved in forecasting ads and ad revenue exhibited predictive validity of .74.[44] Statistically removing the executives' random inconsistencies yielded a

slightly improved validity of .82. A mathematical model that was independent of the executives had a predictive validity of .94. Although the difference between .82 and .94 may seem somewhat small, it corresponds to a difference in error-rate of 320 pages per year on a base of only 2800 annual advertising pages (approximate). This discrepancy in predictions from automated expertise vs. an explicit model has large effects because predicted ad pages determine writer staffing plans, production plans, and other plans.

Medical doctors determining life expectancy of terminal cancer patients, loan officers determining which firms will become bankrupt, and agency managers evaluating the probable success of insurance agents provide additional examples of unaided judgment falling short in contests with more explicitly derived solutions.[45]

An analysis of the old *Saturday Evening Post* provides additional insights into the validity problem. Confronted with profitability issues, executives at the Curtis Publishing Company implemented a number of changes in promotional expenditures and advertising rates. These changes, however, did not prevent ultimate failure. In fact, many of the actions made the situation worse.

Essentially, the executives appear to have failed to comprehend the complex relationships that linked promotional expenditures and advertising rates to profitability.[46] Lack of explicit discussion and analysis of deeply held assumptions did not help in better understanding cause-effect relationships that had existed for years. As promotional expenditures were increased to attract new readers and improve profitability, ad rates were increased to help pay for the additional expense. The various increases in promotional expenditures had the desired effect of increasing trial readers. The various increases in ad rates, however, had complex and to some degree unexpected effects. These ad-rate increases had the desired effect of enhancing ad revenue, but they also had the effect of reducing the absolute number of ad pages and this led management to repeatedly cut the number of article pages, based on longstanding and standard industry policy. Cuts in article pages resulted in fewer trial readers becoming regular readers (who paid full subscription price) and more regular readers failing to renew their subscriptions. Thus, more and more money had to be spent on promotion in an effort to gain and retain readers. Over the last 12 years of the magazine's life, promotional expenditures increased 130 percent (in constant dollars) while the number of readers increased only 62 percent.

The increased cost of promotion for a magazine that was becoming smaller and smaller, and therefore less and less attractive, took its toll on profitability. In the words of an organizational researcher who studied these issuer.[47]

> The policy elite of the old *Saturday Evening Post* seemed oblivious to the recursive relationships that tightly coupled readers, advertising sales, and magazine pages. It resulted in an unstable system. Whether readership of the magazine increased or decreased, the same result was obtained—profits dropped.

Bringing the story to a close:

> It is a perceptual enigma that a complex organization (like the Curtis Publishing Company) can coordinate such a rich array of highly specialized activities (from editing to printing) and yet formulate its major policy decisions on out-of-date maps of causality containing untested beliefs and the simplest of arguments.

The executives at the Curtis Publishing Company could have benefited from an explicit review of their cause-effect beliefs.

Intuition as holistic hunch when exploiting

Organizations exploiting existing technologies and strategies are unlikely to derive substantial benefits from an emphasis on intuition as holistic hunch. Intuition as hunch is simply the wrong tool from the toolbox. As noted earlier, exploitation operates in the context of familiar terrain with known, and relatively predictable problems and challenges. This means that uncertainty reduction rather than ambiguity elimination is the key.[48] In situations characterized by uncertainty as opposed to ambiguity, managers and executives know what the issues are, know what questions to ask, and know what data to collect and analyze. Raising thoughts, arguments, issues, and data to an explicit level tends to pay dividends under these conditions; relying upon hunches does not.[49] A recent study provided evidence consistent with this conclusion: project teams engaged in exploitation learned and performed more effectively with clear structure in place.[50]

Suggested managerial actions

Organizations can successfully emphasize exploitation of existing technologies and strategies in industries that are relatively stable, assuming their competitive advantages continue to create value for customers. Even in industries characterized by significant change over time, organizations may be able to emphasize exploitation in some time periods and for some strategic decisions. In both cases, however, intuition defined in any fashion appears to work against effective exploitation of current capabilities. Based on logic and evidence, we reject the common sense notion that intuition as automated expertise supports exploitation while intuition as hunch does not. Instead, we believe that both types of intuition are problematic. Automated expertise, however, can play a positive role as a starting position if it is subsequently raised to an explicit level for updating and review. Below, we offer more specific advice.

Automated expertise should be treated with caution in an organization emphasizing exploitation of its current capabilities. As illustrated above, the potential pitfalls of subconscious processing are many. To avoid the pitfalls, we suggest the following steps. First, executives should assess the emphasis placed on automated expertise in strategic decision making. In undertaking this assessment, a simple question can be used: To what extent are key decision makers able to describe the factors that have led to particular positions on issues and to particular preferences for courses of action? If an individual involved in a decision can *quickly* and *easily* discuss a rich web of relevant explanatory factors, particularly when no warning of the question

is given, then automated expertise is probably not the key driver. If such factors are available in, or easily returned to, the conscious mind of an individual, then intuition is probably not the key driver for that person. If key decision makers have difficulty discussing explanatory factors, but can do so after prompting and probing, then automated expertise may be involved, and is probably involved if the decision context has an exploitation focus, such as when decision makers are considering investments in the next incremental innovation for existing technology or are handling the latest supply disruption for a key but scarce raw material. Because these types of decisions cover familiar territory and well-worn issues, automated expertise could very easily come into play.

If a determination is made that automated expertise is being emphasized to a substantial degree, managers can adopt tactics designed to generate a more explicit process. A host of standard decision tools can be usefully employed to surface unarticulated knowledge and beliefs. Devil's advocacy and multi-attribute decision analysis are general examples, while root-cause analysis and the tactic of seven whys are examples from the TQM movement. In general, these tools force decision makers to be explicit about their beliefs and ideas. Beyond these standard tools, simple conversation might be useful. Talking about beliefs and ideas can help surface knowledge that has not been explicit. Techniques focused on surfacing cognitive maps might also be useful.[51]

In the context of advice to make knowledge explicit, it as important to contrast automated expertise and tacit knowledge. Automated expertise generally refers to subconscious knowledge and processing that was once part of conscious thought. Over time, conscious thought has become less necessary in applying this knowledge. Tacit knowledge, as we define the term, involves knowledge that has never been held in the conscious mind. Here, the decision maker has never consciously known all that s/he knows. Unlike automated expertise, which develops through explicit learning, tacit knowledge develops through implicit learning that bypasses the conscious mind altogether.[52] Further, surfacing what was once held at a conscious level would seem to be much easier than surfacing knowledge that has never been consciously processed. Indirect methods, however, may be helpful in accessing and surfacing tacit knowledge, including the use of visuals and symbols.[53]

Although the use of visuals and symbols may seem distant from sound business practice, it has a long history of success, and is worth a few comments here. Leonardo da Vinci, Thomas Edison, and Albert Einstein used drawings, diagrams, and graphs as crucial aids in capturing and expressing their understandings. Richard Feynman, Nobel laureate in physics, preferred to think visually and changed the path of quantum electrodynamics by emphasizing diagrams rather than the more typical written formulae.[54] The process design for the Nissan Infiniti J-30 provides a concrete business example. Japanese designers had been more sensitive to the front-end of this car than their American counterparts. They had had difficulty, however, communicating their reasons and their ideas, partly because of language issues, but partly because of preferences based on collective tacit knowledge that probably had never been explicit.[55] This tacit knowledge had been built up over several years and had not been tested

within the Japanese group itself, and when the knowledge had to be communicated to another group of people, difficulties ensued. Predominantly through sketching exercises, the Japanese were ultimately able to surface and make their knowledge explicit enough to communicate to the Americans. After a great deal of time and effort, the Americans understood that a slightly turned-down grill combined with narrow headlights led to a sour look and lower level of cultural intelligence in the eyes of the Japanese designers. Without the use of sketches, surfacing and communicating the tacit knowledge may not have occurred.

For a summary of our arguments and advice related to intuition as a tool for exploitation, see the second column in Figure 1.

Conclusions

Although intuition has been defined in many different ways, two definitions capture what is fundamental. When conceptualized as holistic hunch, intuition is capable of providing benefits but only when firms are emphasizing exploration. Even in this case, there are many pitfalls. When conceptualized as automated expertise, intuition left at a subconscious level does not appear to provide unequivocal benefits to firms.

If intuition brings many risks and problems, why do managers use it in strategic decision making? The answer is simple – intuition has a certain allure. As discussed earlier, holistic hunch brings to mind the heroic gambler while automated expertise brings to mind the well-traveled expert. Adding to the allure, folk tales in the media and elsewhere continue to suggest power, elegance, and at least occasional success in intuitive decisions. Further, intuition can speed up decision making, which can be important in a complex, changing world. Finally, and perhaps most importantly, intuition may be the only possible approach when resources are constrained, resources such as managerial time and funds for decision support.

Given the evidence and analysis presented as part of our efforts, we hope that executives and managers will use intuition selectively and cautiously, especially when making strategic decisions. However, the practicalities of the situation are that intuition's allure is strong. We also realize that intuition has a legitimate role to play in some decision circumstances. For example, managers should consider playing hunches when exploration for new strategies and technologies is the goal, and when the costs of failure, both personal and organizational, can be absorbed without significantly affecting the firm's financial viability. Even under these circumstances, tactics such as inspirational story telling, action independence, and slow learning coupled with fast feedback are crucial. Further, playing hunches should not be the only technique used to promote exploration, because the likelihood of success is too low. Other techniques that could be used include structured creativity exercises designed to explicitly promote novel combinations of diverse concepts, ideas, and thoughts.[56] Organizations with strategic-level managers who tend to avoid this type of alternative technique while overemphasizing hunches could benefit from the addition of colleagues who are more analytical.

Managers should consider using automated expertise only when two conditions are met: 1) exploitation of existing strategies and technologies is

the goal; and 2) time or other resource constraints clearly prevent raising knowledge to an explicit level. Only in this very limited set of circumstances would automated expertise seem reasonable for strategic decision making. With a great deal at stake, surfacing existing knowledge for thorough examination is crucial. Standard decision tools such as devil's advocacy and the tactic of seven whys are appropriate techniques to use to surface knowledge.

Returning to the paper's opening, we can ask if intuition is the "really valuable thing" as Albert Einstein proposed. Our analysis suggests that despite the increasing interest and the generally positive evaluations in articles written for executives and managers, intuition presents itself as a troubling tool. By utilizing two important definitions of intuition and explicitly considering an organization's goals, intuition's pitfalls become clear. We hope the ideas offered in this article represent another useful step in the path of assessing intuition's ability to facilitate effective strategic decision making.

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Reading 21: The hidden traps in decision making

John S. Hammond, Ralph L. Keeney and Howard Raiffa

Hammond, J. S., Keeney, R. L. and Raiffa, H. (2006) 'The hidden traps in decision making', *Harvard Business Review*, vol. 84, issue 1.

Before deciding on a course of action, prudent managers evaluate the situation confronting them. Unfortunately, some managers are cautious to a fault – taking costly steps to defend against unlikely outcomes. Others are overconfident – underestimating the range of potential outcomes. And still others are highly impressionable – allowing memorable events in the past to dictate their view of what might be possible now.

These are just three of the well-documented psychological traps that afflict most managers at some point, assert authors John S. Hammond, Ralph L. Keeney, and Howard Raiffa in their 1998 article. Still more pitfalls distort reasoning ability or cater to our own biases. Examples of the latter include the tendencies to stick with the status quo, to look for evidence confirming one's preferences, and to throw good money after bad because it's hard to admit making a mistake.

Techniques exist to overcome each one of these problems. For instance, since the way a problem is posed can influence how you think about it, try to reframe the question in various ways and ask yourself how your thinking might change for each version. Even if we can't eradicate the distortions ingrained in the way our minds work, we can build tests like this into our decision-making processes to improve the quality of the choices we make.

Making decisions is the most important job of any executive. It's also the toughest and the riskiest. Bad decisions can damage a business and a career, sometimes irreparably. So where do bad decisions come from? In many cases, they can be traced back to the way the decisions were made – the alternatives were not clearly defined, the right information was not collected, the costs and benefits were not accurately weighed. But sometimes the fault lies not in the decision-making process but rather in the mind of the decision maker. The way the human brain works can sabotage our decisions.

Researchers have been studying the way our minds function in making decisions for half a century. This research, in the laboratory and in the field, has revealed that we use unconscious routines to cope with the complexity inherent in most decisions. These routines, known as *heuristics,* serve us well in most situations. In judging distance, for example, our minds frequently rely on a heuristic that equates clarity with proximity. The clearer an object appears, the closer we judge it to be. The fuzzier it appears, the farther away we assume it must be. This simple mental shortcut helps us to make the continuous stream of distance judgments required to navigate the world.

Yet, like most heuristics, it is not foolproof. On days that are hazier than normal, our eyes will tend to trick our minds into thinking that things are more distant than they actually are. Because the resulting distortion poses few dangers for most of us, we can safely ignore it. For airline pilots, though, the distortion can be catastrophic. That's why pilots are trained to use objective measures of distance in addition to their vision.

Researchers have identified a whole series of such flaws in the way we think in making decisions. Some, like the heuristic for clarity, are sensory misperceptions. Others take the form of biases. Others appear simply as irrational anomalies in our thinking. What makes all these traps so dangerous is their invisibility. Because they are hardwired into our thinking process, we fail to recognize them – even as we fall right into them.

For executives, whose success hinges on the many day-to-day decisions they make or approve, the psychological traps are especially dangerous. They can undermine everything from new-product development to acquisition and divestiture strategy to succession planning. While no one can rid his or her mind of these ingrained flaws, anyone can follow the lead of airline pilots and learn to understand the traps and compensate for them.

In this article, we examine a number of well-documented psychological traps that are particularly likely to undermine business decisions. In addition to reviewing the causes and manifestations of these traps, we offer some specific ways managers can guard against them. It's important to remember, though, that the best defense is always awareness. Executives who attempt to familiarize themselves with these traps and the diverse forms they take will be better able to ensure that the decisions they make are sound and that the recommendations proposed by subordinates or associates are reliable.

The anchoring trap

How would you answer these two questions?

Is the population of Turkey greater than 35 million?

What's your best estimate of Turkey's population?

If you're like most people, the figure of 35 million cited in the first question (a figure we chose arbitrarily) influenced your answer to the second question. Over the years, we've posed those questions to many groups of people. In half the cases, we used 35 million in the first question; in the other half, we used 100 million. Without fail, the answers to the second question increase by many millions when the larger figure is used in the first question. This simple test illustrates the common and often pernicious mental phenomenon known as *anchoring.* When considering a decision, the mind gives disproportionate weight to the first information it receives. Initial impressions, estimates, or data anchor subsequent thoughts and judgments.

Anchors take many guises. They can be as simple and seemingly innocuous as a comment offered by a colleague or a statistic appearing in the morning newspaper. They can be as insidious as a stereotype about a person's skin color, accent, or dress. In business, one of the most common types of anchors is a past event or trend. A marketer attempting to project the sales of a product for the coming year often begins by looking at the sales

volumes for past years. The old numbers become anchors, which the forecaster then adjusts based on other factors. This approach, while it may lead to a reasonably accurate estimate, tends to give too much weight to past events and not enough weight to other factors. In situations characterized by rapid changes in the marketplace, historical anchors can lead to poor forecasts and, in turn, misguided choices.

Because anchors can establish the terms on which a decision will be made, they are often used as a bargaining tactic by savvy negotiators. Consider the experience of a large consulting firm that was searching for new office space in San Francisco. Working with a commercial real-estate broker, the firm's partners identified a building that met all their criteria, and they set up a meeting with the building's owners. The owners opened the meeting by laying out the terms of a proposed contract: a ten-year lease; an initial monthly price of $2.50 per square foot; annual price increases at the prevailing inflation rate; all interior improvements to be the tenant's responsibility; an option for the tenant to extend the lease for ten additional years under the same terms. Although the price was at the high end of current market rates, the consultants made a relatively modest counteroffer. They proposed an initial price in the midrange of market rates and asked the owners to share in the renovation expenses, but they accepted all the other terms. The consultants could have been much more aggressive and creative in their counterproposal – reducing the initial price to the low end of market rates, adjusting rates biennially rather than annually, putting a cap on the increases, defining different terms for extending the lease, and so forth – but their thinking was guided by the owners' initial proposal. The consultants had fallen into the anchoring trap, and as a result, they ended up paying a lot more for the space than they had to.

» What can you do about it? The effect of anchors in decision making has been documented in thousands of experiments. Anchors influence the decisions not only of managers, but also of accountants and engineers, bankers and lawyers, consultants and stock analysts. No one can avoid their influence; they're just too widespread. But managers who are aware of the dangers of anchors can reduce their impact by using the following techniques:

- Always view a problem from different perspectives. Try using alternative starting points and approaches rather than sticking with the first line of thought that occurs to you.
- Think about the problem on your own before consulting others to avoid becoming anchored by their ideas.
- Be open-minded. Seek information and opinions from a variety of people to widen your frame of reference and to push your mind in fresh directions.
- Be careful to avoid anchoring your advisers, consultants, and others from whom you solicit information and counsel. Tell them as little as possible about your own ideas, estimates, and tentative decisions. If you reveal too much, your own preconceptions may simply come back to you.
- Be particularly wary of anchors in negotiations. Think through your position before any negotiation begins in order to avoid being anchored by the other party's initial proposal. At the same time, look for

opportunities to use anchors to your own advantage – if you're the seller, for example, suggest a high, but defensible, price as an opening gambit.

The status-quo trap

We all like to believe that we make decisions rationally and objectively. But the fact is, we all carry biases, and those biases influence the choices we make. Decision makers display, for example, a strong bias toward alternatives that perpetuate the status quo. On a broad scale, we can see this tendency whenever a radically new product is introduced. The first automobiles, revealingly called "horseless carriages," looked very much like the buggies they replaced. The first "electronic newspapers" appearing on the World Wide Web looked very much like their print precursors.

On a more familiar level, you may have succumbed to this bias in your personal financial decisions. People sometimes, for example, inherit shares of stock that they would never have bought themselves. Although it would be a straightforward, inexpensive proposition to sell those shares and put the money into a different investment, a surprising number of people don't sell. They find the status quo comfortable, and they avoid taking action that would upset it. "Maybe I'll rethink it later," they say. But "later" is usually never.

The source of the status-quo trap lies deep within our psyches, in our desire to protect our egos from damage. Breaking from the status quo means taking action, and when we take action, we take responsibility, thus opening ourselves to criticism and to regret. Not surprisingly, we naturally look for reasons to do nothing. Sticking with the status quo represents, in most cases, the safer course because it puts us at less psychological risk.

Many experiments have shown the magnetic attraction of the status quo. In one, a group of people were randomly given one of two gifts of approximately the same value – half received a mug, the other half a Swiss chocolate bar. They were then told that they could easily exchange the gift they received for the other gift. While you might expect that about half would have wanted to make the exchange, only one in ten actually did. The status quo exerted its power even though it had been arbitrarily established only minutes before.

Other experiments have shown that the more choices you are given, the more pull the status quo has. More people will, for instance, choose the status quo when there are two alternatives to it rather than one: A and B instead of just A. Why? Choosing between A and B requires additional effort; selecting the status quo avoids that effort.

In business, where sins of commission (doing something) tend to be punished much more severely than sins of omission (doing nothing), the status quo holds a particularly strong attraction. Many mergers, for example, founder because the acquiring company avoids taking swift action to impose a new, more appropriate management structure on the acquired company. "Let's not rock the boat right now," the typical reasoning goes. "Let's wait until the situation stabilizes." But as time passes, the existing structure becomes more entrenched, and altering it becomes harder, not easier. Having

failed to seize the occasion when change would have been expected, management finds itself stuck with the status quo.

» **What can you do about it?** First of all, remember that in any given decision, maintaining the status quo may indeed be the best choice, but you don't want to choose it just because it is comfortable. Once you become aware of the status-quo trap, you can use these techniques to lessen its pull:

- Always remind yourself of your objectives and examine how they would be served by the status quo. You may find that elements of the current situation act as barriers to your goals.
- Never think of the status quo as your only alternative. Identify other options and use them as counterbalances, carefully evaluating all the pluses and minuses.
- Ask yourself whether you would choose the status-quo alternative if, in fact, it weren't the status quo.
- Avoid exaggerating the effort or cost involved in switching from the status quo.
- Remember that the desirability of the status quo will change over time. When comparing alternatives, always evaluate them in terms of the future as well as the present.
- If you have several alternatives that are superior to the status quo, don't default to the status quo just because you're having a hard time picking the best alternative. Force yourself to choose.

The sunk-cost trap

Another of our deep-seated biases is to make choices in a way that justifies past choices, even when the past choices no longer seem valid. Most of us have fallen into this trap. We may have refused, for example, to sell a stock or a mutual fund at a loss, forgoing other, more attractive investments. Or we may have poured enormous effort into improving the performance of an employee whom we knew we shouldn't have hired in the first place. Our past decisions become what economists term *sunk costs* – old investments of time or money that are now irrecoverable. We know, rationally, that sunk costs are irrelevant to the present decision, but nevertheless they prey on our minds, leading us to make inappropriate decisions.

Why can't people free themselves from past decisions? Frequently, it's because they are unwilling, consciously or not, to admit to a mistake. Acknowledging a poor decision in one's personal life may be purely a private matter, involving only one's self-esteem, but in business, a bad decision is often a very public matter, inviting critical comments from colleagues or bosses. If you fire a poor performer whom you hired, you're making a public admission of poor judgment. It seems psychologically safer to let him or her stay on, even though that choice only compounds the error.

The sunk-cost bias shows up with disturbing regularity in banking, where it can have particularly dire consequences. When a borrower's business runs into trouble, a lender will often advance additional funds in hopes of providing the business with some breathing room to recover. If the business

does have a good chance of coming back, that's a wise investment. Otherwise, it's just throwing good money after bad.

One of us helped a major U.S. bank recover after it made many bad loans to foreign businesses. We found that the bankers responsible for originating the problem loans were far more likely to advance additional funds – repeatedly, in many cases – than were bankers who took over the accounts after the original loans were made. Too often, the original bankers' strategy – and loans – ended in failure. Having been trapped by an escalation of commitment, they had tried, consciously or unconsciously, to protect their earlier, flawed decisions. They had fallen victim to the sunk-cost bias. The bank finally solved the problem by instituting a policy requiring that a loan be immediately reassigned to another banker as soon as any problem arose. The new banker was able to take a fresh, unbiased look at the merit of offering more funds.

Sometimes a corporate culture reinforces the sunk-cost trap. If the penalties for making a decision that leads to an unfavorable outcome are overly severe, managers will be motivated to let failed projects drag on endlessly – in the vain hope that they'll somehow be able to transform them into successes. Executives should recognize that, in an uncertain world where unforeseeable events are common, good decisions can sometimes lead to bad outcomes. By acknowledging that some good ideas will end in failure, executives will encourage people to cut their losses rather than let them mount.

» What can you do about it? For all decisions with a history, you will need to make a conscious effort to set aside any sunk costs – whether psychological or economic – that will muddy your thinking about the choice at hand. Try these techniques:

- Seek out and listen carefully to the views of people who were uninvolved with the earlier decisions and who are hence unlikely to be committed to them.
- Examine why admitting to an earlier mistake distresses you. If the problem lies in your own wounded self-esteem, deal with it head-on. Remind yourself that even smart choices can have bad consequences, through no fault of the original decision maker, and that even the best and most experienced managers are not immune to errors in judgment. Remember the wise words of Warren Buffett: "When you find yourself in a hole, the best thing you can do is stop digging."
- Be on the lookout for the influence of sunk-cost biases in the decisions and recommendations made by your subordinates. Reassign responsibilities when necessary.
- Don't cultivate a failure-fearing culture that leads employees to perpetuate their mistakes. In rewarding people, look at the quality of their decision making (taking into account what was known at the time their decisions were made), not just the quality of the outcomes.

The confirming-evidence trap

Imagine that you're the president of a successful midsize U.S. manufacturer considering whether to call off a planned plant expansion. For a while you've been concerned that your company won't be able to sustain the rapid pace of growth of its exports. You fear that the value of the U.S. dollar will strengthen in coming months, making your goods more costly for overseas consumers and dampening demand. But before you put the brakes on the plant expansion, you decide to call up an acquaintance, the chief executive of a similar company that recently moth-balled a new factory, to check her reasoning. She presents a strong case that other currencies are about to weaken significantly against the dollar. What do you do?

You'd better not let that conversation be the clincher, because you've probably just fallen victim to the confirming evidence bias. This bias leads us to seek out information that supports our existing instinct or point of view while avoiding information that contradicts it. What, after all, did you expect your acquaintance to give, other than a strong argument in favor of her own decision? The confirming-evidence bias not only affects where we go to collect evidence but also how we interpret the evidence we do receive, leading us to give too much weight to supporting information and too little to conflicting information.

In one psychological study of this phenomenon, two groups – one opposed to and one supporting capital punishment – each read two reports of carefully conducted research on the effectiveness of the death penalty as a deterrent to crime. One report concluded that the death penalty was effective; the other concluded it was not. Despite being exposed to solid scientific information supporting counterarguments, the members of both groups became even more convinced of the validity of their own position after reading both reports. They automatically accepted the supporting information and dismissed the conflicting information.

There are two fundamental psychological forces at work here. The first is our tendency to subconsciously decide what we want to do before we figure out why we want to do it. The second is our inclination to be more engaged by things we like than by things we dislike – a tendency well documented even in babies. Naturally, then, we are drawn to information that supports our subconscious leanings.

» **What can you do about it?** It's not that you shouldn't make the choice you're subconsciously drawn to. It's just that you want to be sure it's the smart choice; You need to put it to the test. Here's how:

- Always check to see whether you are examining all the evidence with equal rigor. Avoid the tendency to accept confirming evidence without question.
- Get someone you respect to play devil's advocate, to argue against the decision you're contemplating. Better yet, build the counterarguments yourself. What's the strongest reason to do something else? The second strongest reason? The third? Consider the position with an open mind.
- Be honest with yourself about your motives. Are you really gathering information to help you make a smart choice, or are you just looking for evidence confirming what you think you'd like to do?

- In seeking the advice of others, don't ask leading questions that invite confirming evidence. And if you find that an adviser always seems to support your point of view, find a new adviser. Don't surround yourself with yes-men.

The framing trap

The first step in making a decision is to frame the question. It's also one of the most dangerous steps. The way a problem is framed can profoundly influence the choices you make. In a case involving automobile insurance, for example, framing made a $200 million difference. To reduce insurance costs, two neighboring states, New Jersey and Pennsylvania, made similar changes in their laws. Each state gave drivers a new option: By accepting a limited right to sue, they could lower their premiums. But the two states framed the choice in very different ways: In New Jersey, you automatically got the limited right to sue unless you specified otherwise; in Pennsylvania, you got the full right to sue unless you specified otherwise. The different frames established different status quos, and, not surprisingly, most consumers defaulted to the status quo. As a result, in New Jersey about 80% of drivers chose the limited right to sue, but in Pennsylvania only 25% chose it. Because of the way it framed the choice, Pennsylvania failed to gain approximately $200 million in expected insurance and litigation savings.

The framing trap can take many forms, and as the insurance example shows, it is often closely related to other psychological traps. A frame can establish the status quo or introduce an anchor. It can highlight sunk costs or lead you toward confirming evidence. Decision researchers have documented two types of frames that distort decision making with particular frequency:

Frames as gains versus losses. In a study patterned after a classic experiment by decision researchers Daniel Kahneman and Amos Tversky, one of us posed the following problem to a group of insurance professionals:

You are a marine property adjuster charged with minimizing the loss of cargo on three insured barges that sank yesterday off the coast of Alaska. Each barge holds $200,000 worth of cargo, which will be lost if not salvaged within 72 hours. The owner of a local marine-salvage company gives you two options, both of which will cost the same:

Plan A: This plan will save the cargo of one of the three barges, worth $200,000.

Plan B: This plan has a one-third probability of saving the cargo on all three barges, worth $600,000, but has a two-thirds probability of saving nothing.

Which plan would you choose?

If you are like 71% of the respondents in the study, you chose the "less risky" Plan A, which will save one barge for sure. Another group in the study, however, was asked to choose between alternatives C and D:

Plan C: This plan will result in the loss of two of the three cargoes, worth $400,000.

Plan D: This plan has a two-thirds probability of resulting in the loss of all three cargoes and the entire $600,000 but has a one-third probability of losing no cargo.

Faced with this choice, 80% of these respondents preferred Plan D.

The pairs of alternatives are, of course, precisely equivalent–Plan A is the same as Plan C, and Plan B is the same as Plan D – they've just been framed in different ways. The strikingly different responses reveal that people are risk averse when a problem is posed in terms of gains (barges saved) but risk seeking when a problem is posed in terms of avoiding losses (barges lost). Furthermore, they tend to adopt the frame as it is presented to them rather than restating the problem in their own way.

Framing with different reference points. The same problem can also elicit very different responses when frames use different reference points. Let's say you have $2,000 in your checking account and you are asked the following question:

Would you accept a fifty-fifty chance of either losing $300 or winning $500?

Would you accept the chance? What if you were asked this question:

Would you prefer to keep your checking account balance of $2,000 or to accept a fifty-fifty chance of having either $1,700 or $2,500 in your account?

Once again, the two questions pose the same problem. While your answers to both questions should, rationally speaking, be the same, studies have shown that many people would refuse the fifty-fifty chance in the first question but accept it in the second. Their different reactions result from the different reference points presented in the two frames. The first frame, with its reference point of zero, emphasizes incremental gains and losses, and the thought of losing triggers a conservative response in many people's minds. The second frame, with its reference point of $2,000, puts things into perspective by emphasizing the real financial impact of the decision.

» What can you do about it? A poorly framed problem can undermine even the best-considered decision. But any adverse effect of framing can be limited by taking the following precautions:

- Don't automatically accept the initial frame, whether it was formulated by you or by someone else. Always try to reframe the problem in various ways. Look for distortions caused by the frames.
- Try posing problems in a neutral, redundant way that combines gains and losses or embraces different reference points. For example: Would you accept a fifty-fifty chance of either losing $300, resulting in a bank balance of $1,700, or winning $500, resulting in a bank balance of $2,500?
- Think hard throughout your decision-making process about the framing of the problem. At points throughout the process, particularly near the end, ask yourself how your thinking might change if the framing changed.
- When others recommend decisions, examine the way they framed the problem. Challenge them with different frames.

The estimating and forecasting traps

Most of us are adept at making estimates about time, distance, weight, and volume. That's because we're constantly making judgments about these variables and getting quick feedback about the accuracy of those judgments. Through daily practice, our minds become finely calibrated.

Making estimates or forecasts about uncertain events, however, is a different matter. While managers continually make such estimates and forecasts, they rarely get clear feedback about their accuracy. If you judge, for example, that the likelihood of the price of oil falling to less than $15 a barrel one year hence is about 40% and the price does indeed fall to that level, you can't tell whether you were right or wrong about the probability you estimated. The only way to gauge your accuracy would be to keep track of many, many similar judgments to see if, after the fact, the events you thought had a 40% chance of occurring actually did occur 40% of the time. That would require a great deal of data, carefully tracked over a long period of time. Weather forecasters and bookmakers have the opportunities and incentives to maintain such records, but the rest of us don't. As a result, our minds never become calibrated for making estimates in the face of uncertainty.

All of the traps we've discussed so far can influence the way we make decisions when confronted with uncertainty. But there's another set of traps that can have a particularly distorting effect in uncertain situations because they cloud our ability to assess probabilities. Let's look at three of the most common of these uncertainty traps:

The overconfidence trap. Even though most of us are not very good at making estimates or forecasts, we actually tend to be overconfident about our accuracy. That can lead to errors in judgment and, in turn, bad decisions. In one series of tests, people were asked to forecast the next week's closing value for the Dow Jones Industrial Average. To account for uncertainty, they were then asked to estimate a range within which the closing value would likely fall. In picking the top number of the range, they were asked to choose a high estimate they thought had only a 1% chance of being exceeded by the closing value. Similarly, for the bottom end, they were told to pick a low estimate for which they thought there would be only a 1% chance of the closing value falling below it. If they were good at judging their forecasting accuracy, you'd expect the participants to be wrong only about 2% of the time. But hundreds of tests have shown that the actual Dow Jones averages fell outside the forecast ranges 20% to 30% of the time. Overly confident about the accuracy of their predictions, most people set too narrow a range of possibilities.

Think of the implications for business decisions, in which major initiatives and investments often hinge on ranges of estimates. If managers underestimate the high end or overestimate the low end of a crucial variable, they may miss attractive opportunities or expose themselves to far greater risk than they realize. Much money has been wasted on ill-fated product-development projects because managers did not accurately account for the possibility of market failure.

The prudence trap. Another trap for forecasters takes the form of over-cautiousness, or prudence. When faced with high-stakes decisions, we tend

to adjust our estimates or forecasts "just to be on the safe side." Many years ago, for example, one of the Big Three U.S. automakers was deciding how many of a new-model car to produce in anticipation of its busiest sales season. The market-planning department, responsible for the decision, asked other departments to supply forecasts of key variables such as anticipated sales, dealer inventories, competitor actions, and costs. Knowing the purpose of the estimates, each department slanted its forecast to favor building more cars – "just to be safe." But the market planners took the numbers at face value and then made their own "just to be safe" adjustments. Not surprisingly, the number of cars produced far exceeded demand, and the company took six months to sell off the surplus, resorting in the end to promotional pricing.

Policy makers have gone so far as to codify overcautiousness in formal decision procedures. An extreme example is the methodology of "worst-case analysis," which was once popular in the design of weapons systems and is still used in certain engineering and regulatory settings. Using this approach, engineers designed weapons to operate under the worst possible combination of circumstances, even though the odds of those circumstances actually coming to pass were infinitesimal. Worst-case analysis added enormous costs with no practical benefit (in fact, it often backfired by touching off an arms race), proving that too much prudence can sometimes be as dangerous as too little.

The recallability trap. Even if we are neither overly confident nor unduly prudent, we can still fall into a trap when making estimates or forecasts. Because we frequently base our predictions about future events on our memory of past events, we can be overly influenced by dramatic events – those that leave a strong impression on our memory. We all, for example, exaggerate the probability of rare but catastrophic occurrences such as plane crashes because they get disproportionate attention in the media. A dramatic or traumatic event in your own life can also distort your thinking. You will assign a higher probability to traffic accidents if you have passed one on the way to work, and you will assign a higher chance of someday dying of cancer yourself if a close friend has died of the disease.

In fact, anything that distorts your ability to recall events in a balanced way will distort your probability assessments. In one experiment, lists of well-known men and women were read to different groups of people. Unbeknownst to the subjects, each list had an equal number of men and women, but on some lists the men were more famous than the women while on others the women were more famous. Afterward, the participants were asked to estimate the percentages of men and women on each list. Those who had heard the list with the more famous men thought there were more men on the list, while those who had heard the one with the more famous women thought there were more women.

Corporate lawyers often get caught in the recallability trap when defending liability suits. Their decisions about whether to settle a claim or take it to court usually hinge on their assessments of the possible outcomes of a trial. Because the media tend to aggressively publicize massive damage awards (while ignoring other, far more common trial outcomes), lawyers can

overestimate the probability of a large award for the plaintiff. As a result, they offer larger settlements than are actually warranted.

» **What can you do about it?** The best way to avoid the estimating and forecasting traps is to take a very disciplined approach to making forecasts and judging probabilities. For each of the three traps, some additional precautions can be taken:

- To reduce the effects of overconfidence in making estimates, always start by considering the extremes, the low and high ends of the possible range of values. This will help you avoid being anchored by an initial estimate. Then challenge your estimates of the extremes. Try to imagine circumstances where the actual figure would fall below your low or above your high, and adjust your range accordingly. Challenge the estimates of your subordinates and advisers in a similar fashion. They're also susceptible to overconfidence.
- To avoid the prudence trap, always state your estimates honestly and explain to anyone who will be using them that they have not been adjusted. Emphasize the need for honest input to anyone who will be supplying you with estimates. Test estimates over a reasonable range to assess their impact. Take a second look at the more sensitive estimates.
- To minimize the distortion caused by variations in recallability, carefully examine all your assumptions to ensure they're not unduly influenced by your memory. Get actual statistics whenever possible. Try not to be guided by impressions.

Forewarned is forearmed

When it comes to business decisions, there's rarely such a thing as a no-brainer. Our brains are always at work, sometimes, unfortunately, in ways that hinder rather than help us. At every stage of the decision-making process, misperceptions, biases, and other tricks of the mind can influence the choices we make. Highly complex and important decisions are the most prone to distortion because they tend to involve the most assumptions, the most estimates, and the most inputs from the most people. The higher the stakes, the higher the risk of being caught in a psychological trap.

The traps we've reviewed can all work in isolation. But, even more dangerous, they can work in concert, amplifying one another. A dramatic first impression might anchor our thinking, and then we might selectively seek out confirming evidence to justify our initial inclination. We make a hasty decision, and that decision establishes a new status quo. As our sunk costs mount, we become trapped, unable to find a propitious time to seek out a new and possibly better course. The psychological miscues cascade, making it harder and harder to choose wisely.

As we said at the outset, the best protection against all psychological traps – in isolation or in combination – is awareness. Forewarned is forearmed. Even if you can't eradicate the distortions ingrained into the way your mind works, you can build tests and disciplines into your decision-making process that can uncover errors in thinking before they become errors in judgment. And taking action to understand and avoid psychological traps can have the added benefit of increasing your confidence in the choices you make.

Reading 22: Emotions and rational deliberations

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Emotions

[E]motions, or more generally affective experiences, are at the top of every conceivable means-ends hierarchy. But the process of rational deliberation, which is instrumental in choosing the best means in order to reach a given goal, can also be disturbed by emotions. For instance, a purchasing manager screening potential suppliers may discard a company because of a personal dislike for one of its agents. This emotion may stand in the way of reaching the ultimate goal in the manager's means-ends hierarchy, for example, the enjoyment of the social approval, status and material benefits that come with excellent task accomplishment.

Emotions also play a role in risky decisions. Risk-taking involves feelings of anxiety, fear, stimulation and joy. The satisfaction of success is augmented by the riskiness of the decision that led to it. The threat of failure and the anticipation of mastery are part of the pleasures of success (March and Shapira, 1988: 84). These feelings may lead to more risky choice behaviour than objectively warranted.

When decision makers let themselves be guided predominantly by their emotions the quality of the decision process tends to be poor. At the awareness stage, the formulation of the problem may be coloured by negative or positive emotions. Furthermore, the range of alternatives taken into consideration may be unduly restricted, the search for information biased, and the consequences of the preferred course of action not well examined (Janis, 1989: 71). Emotions are widely seen as disturbing rational decision processes (Etzioni, 1988: 103).

Emotions are strong affective reactions to persons or situations, but also milder affective experiences, such as moods, have a bearing on the decision-making process. When people are in a happy mood, they tend to see good outcomes as more likely, and bad outcomes as less likely, compared with their view in a neutral mood. Conversely, when they are sad, people view negative events as more likely and good outcomes as less likely (Etzioni, 1988: 103).

Level of emotional involvement

It would be wrong to see emotions only as a negative factor in the cognitive decision process. True enough, a high level of: emotional involvement, for example, as a result of feelings of guilt, anxiety, or embarrassment, can be counterproductive (Simon, 1987). But on the other hand, emotional involvement is also a powerful motivator of human behaviour. If there is a

complete lack of emotional involvement (apart from some far-removed ultimate end), a decision maker is unlikely to go through all the painstaking deliberations necessary to come to a reasoned decision. Consequently, the relationship between emotion and rational decision making is more complex.

Etzioni, on the basis of the available literature, postulates a curvilinear relationship between the level of affect and the level of rationality (Etzioni, 1988: 104). At low levels of affect or emotional involvement decision makers exert less cognitive effort than necessary for the task. Consequently, a programmed response may be given where a newly designed solution would be more appropriate, or the need for decision making may remain altogether unnoticed. At very high levels of emotional involvement, rational deliberations may be bypassed completely, and a response based on emotions only may be given (Janis, 1989: 77; Simon, 1987: 62). At intermediate levels of emotional involvement, however, there is sufficient motivation for going through the mental strains associated with elaborate thought processes. At the same time, the emotional involvement is not so strong as to override more instrumental reasoning and calculation. Consequently, the effective level of rationality in the decision-making process is assumed to be optimal in this situation (see Figure 1).

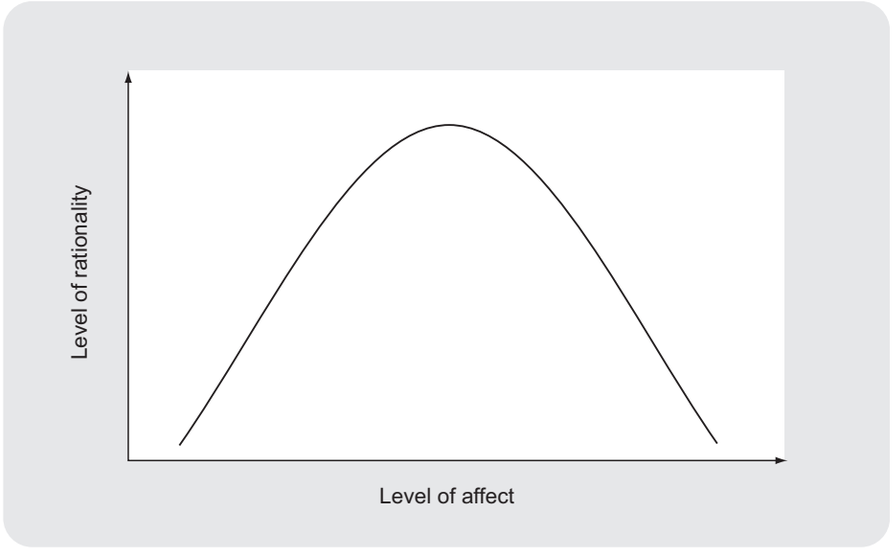

Figure 1: The relationship between level of affect and rationality of decision making

Stress and decision making

The level of stress, frustration, or conflict stands in the same relation to rational decision making as emotive affect. High levels of stress contribute to *cognitive strain*: the breakdown of the decision maker's cognitive processes due to information overload. But at very low levels of stress, decision makers may become bored, and pay too little attention. Or decision makers start looking for ways to make their task more interesting, in order to raise their level of emotive arousal. This may lead to excessive risk taking. Experiments indicate that the optimal level of stress depends on the nature of

the task. The more complex the task, the lower the optimal level of emotive arousal (Etzioni, 1988: 104; Taylor, 1975).

Janis distinguishes five patterns of decision-making behaviour (Janis, 1989: 78–80). At very low levels of stress either **unconflicted inertia** or **unconflicted change** is to be expected. In the first case, no need for decision making is perceived, and routines that foster recommitment to the existing policy are relied upon. In the second case the need for decision making is recognized, but because of the low level of arousal simple decision rules that allow quick decisions are followed, without much deliberation. At intermediate levels of stress **vigilant decision making** takes place. In this style of decision-making policy makers, within their cognitive constraints, carry out to the best of their ability the various steps of a complete decision-making process. At very high levels of stress **defensive avoidance** or **hypervigilance** take place. Defensive avoidance occurs when a situation is seen as very threatening, while no feasible solution seems to be at hand. Problem avoidance or procrastination are the most likely outcomes. In the case of hyper-vigilance the threatening situation is escaped from as rapidly as possible by accepting the first alternative that promises to be satisfactory. The chosen option is bolstered uncritically and unfavourable aspects are ignored.

Causality of cognition and affection

We do not know very much about the causal relations between cognitive and affective aspects of (decision) behaviour (Van Veldhoven, 1988). Many models of decision making focus on cognition while neglecting affect. But psychological research suggests that affective reactions often precede cognitive deliberations (Van Raaij, 1988). In these cases the agenda for the cognitive decision-making process is set by the first affective reaction. On the other hand, careful consideration of pros and cons can also alter a person's feelings. In that case cognition changes affect. [I]t seems most fruitful to conceptualize the relationship between cognitive appraisal and affective experience as a continuous loop system (Cadland, 1977). Both spheres of the mind constantly influence one another, and it seems impossible to state which of the two is more important than, or anterior to, the other.

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Reading 23: Humble decision making

Amitai Etzioni

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Decision making in the 1990s will be even more of an art and less of a science than it is today. Not only is the world growing more complex and uncertain at a faster and faster pace, but the old decision-making models are failing, and we can expect their failure to accelerate as well.

If executives once imagined they could gather enough information to read the business environment like an open book, they have had to dim their hopes. The flow of information has swollen to such a flood that managers are in danger of drowning; extracting relevant data from the torrent is increasingly a daunting task. Little wonder that some beleaguered decision makers – even outside the White House – turn to astrologers and mediums.

Yet from this swelling confusion, a new decision-making model is evolving, one more attuned to a world that resembles not so much an open book as an entire library of encyclopedias under perpetual revision. This new approach – in fact a very old approach in modern dress – understands that executives must often proceed with only partial information, which, moreover, they have had no time to fully process or analyze. I call this model "humble decision making."

In a simpler age, the principle governing business decisions was held to be rationalism. Rationalists argued that decision makers should and *could* explore every route that might lead to their goal, collect information about the costs and utility of each, systematically compare these various alternatives, and choose the most effective course. Executives were then urged to throw the full power of their leadership behind the chosen path. The rule was: Implement!

How do you make a decision when there's too much data and too little time?

Overcome every adversity! This called for the kind of assertiveness shown by Israeli army commanders when they order subordinates to storm and take a roadblock: "I don't care if you go over it, under it, around it, or through it, just see that it's ours by the end of the day."

Today's typical executive finds it quite impossible to pursue decisions this aggressively. For example, it is no longer enough to understand the U.S. economy; events in Brazil, Kuwait, Korea, and a score of other countries are likely to affect one's decisions. Explosive innovation in fields like communications, biotechnology, and superconductivity can take companies by surprise. Unexpected developments can affect the cost of everything from raw materials to health care – witness the oil shocks of the 1970s and the spread of AIDS in the 1980s. Economic forecasts are proving to be much

less reliable than they used to be (or, perhaps, than we used to think they were). Deregulation, computer-driven program trading, foreign hot money in the U.S. economy – all add unpredictability.

Rationalist decision makers simply need to *know* much more than ever before. Of course, with computers our capacity to collect and to semiprocess information has grown, but information is not the same as knowledge. The production of knowledge is analogous to the manufacture of any other product. We begin with the raw material of facts (of which we often have a more than adequate supply). We pre-treat these by means of classification, tabulation, summary, and so on, and then proceed to the assembly of correlations and comparisons. But the final product, conclusions, does not simply roll off the production line. Indeed, without powerful overarching explanatory schemes (or theories), whatever knowledge there is in the mountain of data we daily amass is often invisible.

And our prevailing theories – in economics, for instance – are proving ever less suitable to the new age. Artificial intelligence may someday make the mass production of knowledge an easy matter, but certainly not before the year 2000.

In short, the executives of today and tomorrow face continuing information overloads but little growth in the amount of knowledge usable for most complex managerial decisions. Decision makers in the 1990s will continue to travel on unmarked, unlit roads in rain and fog rather than on the broad, familiar, sunlit streets of their own hometowns.

Actually, decision making was never quite as easy as rationalists would have us think. Psychologists argue compellingly that even before our present troubles began, human minds could not handle the complexities that important decisions entailed. Our brains are too limited. At best, we can focus on eight facts at a time. Our ability to calculate probabilities, especially to combine two or more probabilities – essential for most decision making – is low. And the evidence shows that we learn surprisingly slowly. We make the same mistakes over and over again, adjusting our estimates and expectations at an agonizing crawl, and quite poorly at that.

Moreover, we are all prone to let our emotions get in the way – fear, for one. Since all decisions entail risks, decision making almost inevitably evokes anxiety. Decision makers respond in predictable ways that render their decisions less reasonable. Irving L. Janis and Leon Mann have treated this subject at some length in their book, *Decision Making*. Common patterns include defensive avoidance (delaying decisions unduly), overreaction (making decisions impulsively in order to escape the anxious state), and hypervigilance (obsessively collecting more and more information instead of making a decision).

Political factors are another complicating consideration, partly because we try to deny their importance. One study reports that most executives see their decisions as professional, even technocratic, but rarely as political. While they acknowledge that political considerations may enter into dealings with a labor union or a local government and that “bad” political corporations do exist, few are willing to recognize that all corporations are political entities and, consequently, that most if not all important decisions have a political

dimension. For example, it is not enough to dream up a new product, market, or research project; we must consider how to build up bases of support among vice presidents, division leaders, and others.

Half the choices you make every day are, in theory, impossibly complex

By disregarding the emotions and politics of decision making, rationalism has taught executives to expect more of themselves than is either possible or, indeed, desirable. Implicit in the rationalistic decision model is the assumption that decision makers have unqualified power and wisdom. It ignores the fact that other individuals, too, set goals for themselves and seek to push them through. For ethical reasons, we should not want to override them, and for practical reasons, we cannot do so. Successful decision-making strategies must necessarily include a place for cooperation, coalition building, and the whole panorama of differing personalities, perspectives, responsibilities, and powers.

So even before the world turned ultracomplex and superfungible, our intellectual limitations were such that wholly rational decisions were often beyond our grasp. Recognition of this fact led students of decision making to come up with two new approaches that are, in effect, counsels of despair.

The first of these is called incrementalism, a formal title for what is otherwise known as the science of muddling through. Incrementalism advocates moving not so much toward a goal as away from trouble, trying this or that small maneuver without any grand plan or sense of ultimate purpose. It has two attractive strengths. First, it eliminates the need for complete, encyclopedic information by focusing on limited areas, those nearest to hand, one at a time. And, second, it avoids the danger of grand policy decisions by not making any. Its main weakness is that it is highly "conservative"; it invariably chooses a direction close to the prevailing one. Grand new departures, radical changes in course, do not occur, however much they may be needed.

The second counsel of despair is openly opposed to reflection and analysis. It calls on executives to steam full speed ahead and remake the world rather than seek to understand it. Building on the perfectly accurate observation that many things are exceedingly difficult to predict – which product will sell, what the result of an ad campaign will be, how long R&D will take – executives are advised not to sit back and await sufficient information but to pick the course favored by their experience, inner voice, intuition, and whatever information is readily available – and then to commit. Pumping enough resources, dedication, and ingenuity into the course they have fixed on can make it work, can render an underprocessed decision right.

While more heroic and appealing to the executive self-image than incrementalism, this go-for-it approach is the decision maker's equivalent of "Damn the torpedoes, full speed ahead!" It is a hidden rather than an open counsel of despair, but it does despair of knowing the world and approaching it sensibly. And it is much more likely to end in shipwreck than in victory, especially in ever more treacherous seas.

Yet another approach – rarely described but not as uncommon as it ought to be – is what we might call rational ritualism, where executives and their staffs take part in an information dance whose prescribed moves include the data *pas de deux* and the interpretation waltz, except that the information used is generally poor (arbitrarily selected or from undependable sources) and often vastly overinterpreted. Usually most of those involved (or all of them) know the data is unreliable and the analysis unreal but dare not say that the emperor is naked. Instead, they make ritualistic projections – and know enough to ignore them.

A less explicitly recognized approach to decision making has been with us for centuries. Effective managers have made use of it since business began. Because this approach is particularly well suited to the new age of data overload and pell-mell change, it deserves a new look and, though still evolving, the respectability that a clear formulation can give it. I call it humble decision making, but a more descriptive title might be adaptive decision making or mixed scanning, since it entails a mixture of shallow and deep examination of data – generalized consideration of a broad range of facts and choices followed by detailed examination of a focused *subset* of facts and choices.

Mixed scanning contrasts strongly with two prevailing models of decision making – rationalism and incrementalism. We have already seen that the rationalist model, which requires full scanning of all relevant data and choices, is often impossible to heed. It requires the collection of enormous quantities of facts, the use of analytic capabilities we do not command, and a knowledge of consequences that are far away in time. Many of those who despair of its usefulness tend to favor incrementalism, or muddling through.

"Damn the torpedos! Full speed ahead!" is a good way to sink a business

But incrementalism, too, contains a self-defeating feature. Theoretically, incremental decisions are either tentative or remedial – small steps taken in the "right" direction whenever the present course proves to be wrong. But the moment decision makers evaluate their small steps – which they must do in order to determine whether or not the present course is right – they must refer to broader guidelines. These wider criteria are not formulated incrementally but have all the hallmarks of grand, *a priori* decisions, which incrementalism seeks to avoid. Yet without such guidelines, incrementalism amounts to drifting, to action without direction.

Mixed scanning, as the term suggests, involves two sets of judgments: the first are broad, fundamental choices about the organization's basic policy and direction; the second are incremental decisions that prepare the way for new, basic judgments and that implement and particularize them once they have been made. Thus mixed scanning is much less detailed and demanding than rationalistic decision making, but still broader and more comprehensive than incrementalism – and less likely to be limited to familiar alternatives.

Rationalism is a deeply optimistic approach that assumes we can learn all we need to know; mixed scanning is an adaptive strategy that acknowledges our inability to know more than part of what we would need to make a

genuinely rational decision. Incrementalism is profoundly cautious and avoids decisions based on partial knowledge; mixed scanning seeks to make the best possible use of partial knowledge rather than proceed blindly with no knowledge at all.

The oldest formal use of mixed scanning is medical. It is the way doctors make decisions. Unlike incrementalists, physicians know what they want to achieve and which parts of the organism to focus on. Unlike rationalists, they do not commit all their resources on the basis of a preliminary diagnosis, and they do not wait for every conceivable scrap of personal history and scientific data before initiating treatment. Doctors survey the general health of a patient, then zero in on his or her particular complaint. They initiate a tentative treatment, and, if it fails, they try something else.

In fact, this is roughly the way effective managers, too, often make decisions. Business data are rarely unequivocal. Driving in fog and rain has always called for caution as well as a clear sense of destination, and the rules for humble yet effective decision making are much the same for doctors and executives.

Focused trial and error is probably the most widely used procedure for adapting to partial knowledge. It has two parts: knowing where to start the search for an effective intervention, and checking outcomes at intervals to adjust and modify the intervention. This approach differs significantly from what we might call outright trial and error, which assumes no knowledge at all, and from fine-tuning searches, which can occur only when knowledge is high and uncertainty low.

Focused trial and error assumes that there is important information that the executive does not have and must proceed without. It is not a question of understanding the world "correctly," of choosing a logical procedure on the basis of facts, but of feeling one's way to an effective course of action despite the lack of essential chunks of data. It is an adaptive, not a rationalistic, strategy.

Tentativeness – a commitment to revise one's course as necessary – is an essential adaptive rule. Physicians tell their patients to take a medicine for *x* number of days, to call them at once if the symptoms grow worse rather than better, to return after some set interval for another examination. Such safeguards permit the doctor to adjust the intervention if it proves to be ineffective or counterproductive. A good doctor does not invest prestige and ego in the treatment prescribed. On the contrary, what distinguishes good physicians from poor ones is precisely their sensitivity to changing conditions, their pronounced willingness to change directions on the basis of results, their humility in the face of reality.

Executives often render decisions on matters less well understood than many medical conditions. Hence executives, even more than physicians, are best off when they refuse to commit to an initial diagnosis and so refuse to risk dignity and stature on what is inevitably an uncertain course, By viewing each intervention as tentative or experimental, they declare that they fully expect to revise it.

A year ago, some American bankers may have thought it sounded grand to announce that they would play an important role in the new, post-1992

Europe, Now that the great difficulties of such a course have become more evident, those bankers who announced only that they would try to find a way to work within the European Community seem wiser and more prudent.

Procrastination is another adaptive rule that follows from an understanding of the limits of executive knowledge. Delay permits the collection of fresh evidence, the processing of additional data, the presentation of new options. (It can also give the problem a chance to recede untreated.) Rarely is missing the next board meeting as detrimental as it seems. If one can make a significantly strong case at a later board meeting or rezoning hearing or town meeting, the result will justify the delay.

Decision staggering is one common form of delay. If the Federal Reserve believed the discount rate should rise by 3%, it would still not make the adjustment all at once. By adjusting the rate half a point at a time, the Federal Reserve can see a partial result of its intervention under conditions similar to those in which the rest of the intervention, if necessary, will take place.

Fractionalizing is a second corollary to procrastination. Instead of spreading a single intervention over time, it treats important judgments as a series of subdecisions and may or may not also stagger them in time. For example, a company concerned about future interest rates might raise half its needed equity now by issuing a bond and the other half later by selling an asset. Both staggering and fractionalizing allow the company to relate turning points in the decision process to turning points in the supply of information.

In decision making, humility is another word for staying loose

Hedging bets is another good adaptive rule. For instance, the less investors know about a specific company, the wiser it is to spread their investments among several stocks, The less certain they are of the stock market in general, the wiser they are to spread their investments among different instruments and areas – bonds and real estate, for example. Hedging bets will never produce a bonanza to compare with the lucky all-or-nothing, eggs-in-one-basket coup, but it is much more likely to improve long-term yield and security.

Maintaining strategic reserves is another form of hedging bets. The stock market investor with a cash reserve after the crashes of 1929 or 1987 was in an excellent position to capitalize on those disasters. In a predictable, rational world, no company would need idle resources. In fact, large reserves can be a dangerous invitation to an LBO. But in a world where we have learned to expect the unexpected, we need reserves to cover unanticipated costs and to respond to unforeseen opportunities.

Reversible decisions, finally, are a way of avoiding overcommitment when only partial information is available. The simplest response to the energy crisis of the early 1970s, for example, was to turn down the thermostat during the winter and raise it during the summer. It had the additional virtue of being fully reversible in seconds. Conservation measures were more difficult to take back, but were often only moderately expensive, and a

subsequent lowering of energy prices did not render them counterproductive, even if it did reduce the return on invested capital. Changing an energy source, on the other hand, was often a complex and expensive reaction to the crisis and costly to reverse. Yet a number of companies did convert from oil to coal in the 1970s and now wish they could recall a decision made on the basis of inadequate information and executive overconfidence.

This list of adaptive techniques illustrates several essential qualities of effective decision making that the textbook models miss: flexibility, caution, and the capacity to proceed with partial knowledge, to name just three. Only fools make rigid decisions and decisions with no sense of overarching purpose, while the most able executives already practice more humble decision making than I could possibly preach. They will, I predict, apply the good sense and versatility of this tested, realistic model ever more widely as the world grows more and more difficult to manage.

Reading 24: Foundations for making smart decisions

Ralph L. Keeney

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Making good decisions

Making good decisions is fundamental to the success of every industrial engineer. Important decisions must be made throughout the design, development, and production or implementation of every product and service. Industrial engineers are or should be involved in many of these decisions. It is almost a truism that the industrial engineer who routinely makes good decisions will succeed.

To make good decisions, start by sharpening your objectives and delving into alternatives.

What tools does our profession offer to guide us in decision-making? Most of us have taken courses in engineering economy, statistical methods, operations research, and project management. However, the elegant ideas in these courses are not used as often as they should be. But why?

There are many possible reasons. The literature tends to focus on the mathematical aspects of models that are of greatest interest to quantitative jocks and researchers. The impression is that the ideas can be applied in the real world only by specialists. The vast majority of decision makers are not informed by the theory, even if they have had one or two courses in the field, they feel the ideas are not operational in the real world. Fortunately, this can be changed for the better.

The fact is that no quantitative model can be developed or used without a qualitative foundation that describes what is important to include in the quantitative model. This article discusses how to develop a quality foundation for engineering decisions.

Making informed decisions

Vast strides have been made during the past 50 years to improve both the art and science of decision-making. With my colleagues John Hammond and Howard Raiffa, I have recently searched through this material to identify the ideas most useful to guide decision-making. We've tried to distill all the current knowledge into practical guidelines to help decision-makers make smart choices.

The root ideas need to be based on sound theory and yet be accessible to all thoughtful decision-makers regardless of their training or specialty. To strike

this delicate balance, our work led us to stress qualitative guidance for how to think clearly to make a smart choice rather than quantitative analysis to make an optimum decision. We concluded that it is worthwhile to quantify important concepts like probabilities of events, desirabilities of consequences, and tradeoffs among competing objectives. But for nonspecialists the main use of the numbers should be to improve thinking and sharpen communication about these critical notions in the decision for which they matter, rather than use in any subsequent mathematical analysis.

Our review led us to specify eight key elements for making smart choices (see [Box 1]). The first five elements, Problem, Objectives, Alternatives, Consequences, and Tradeoffs (with the acronym PrOACT serving as a reminder to be proactive), constitute the core of our way of thought. The remaining elements of uncertainty, risk tolerance, and linked decisions are basic notions to industrial engineers. Perhaps less well-known to our community is the body of knowledge on psychological traps that distort our thinking about decisions. Behavioral decision theorists have developed and documented these ideas, which should be a part of any core knowledge to guide decision-making. We worked on ways to avoid the traps or minimize their impact.

Box 1: Key elements of smart choices

Problem: Define your decision problem so that you will solve the right problem.

Objectives: Clarify what you're really trying to achieve with your decision.

Alternatives: Create better alternatives to choose from.

Consequences: Describe how well each alternative meets your objectives.

Tradeoffs: Make tough compromises when you can't achieve all your objectives at once.

Uncertainty: Identify and quantify the major uncertainties affecting your decision.

Risk tolerance: Account for your appetite for risk.

Linked decisions: Plan ahead by effectively coordinating current and future decisions.

Sources: *Smart choices: A practical Guide to Making Better Decisions*, Harvard Business School Press, Boston, 1999.

It is useful to recognize that most practical problems can be analyzed without going through the full gamut of the eight elements. Often, clear thinking on one element may resolve the decision completely. Sometimes you just need to understand your objectives, create that "Aha!" alternative, get your tradeoffs straight, or know what the chances of some events really are. Then you can make a smart choice and move on.

An important observation from our investigation was the inadequate attention of almost all decision approaches to develop a logical foundation for making a good decision. Once you have identified the right decision problem, this foundation is the structure provided by specifying the objectives and creating the alternatives that you will consider—the second and third steps of our approach. When either objectives or alternatives are inadequate, you are often, led to a poor decision. When they are clearly stated and complete, many decisions can be resolved without the need for further analysis. In the other cases, the objectives and alternatives provide the foundation for developing an appropriate quantitative model to provide additional insight to guide the decision.

Specifying and organizing objectives

Remember the old saying, "If you don't know where you're going, any route will get you there"? Too often, decision-makers don't specify their objectives clearly and fully. As a result, they fail to get where they want to go.

This unfortunate circumstance occurs for three main reasons. First, *many people spend too little time and effort on the task of specifying objectives.* They feel they already know what they want and need. Without further reflection, they immediately pick an alternative that seems to "solve" their problem and they move on. Only later, when things turn out less well than anticipated, do they realize that they didn't really understand their objectives after all By then, of course, it's too late.

Second, *getting it right isn't easy.* Objectives don't just pop up in nice neat lists. While you might think you know what you want, some of the most important objectives may not be at all obvious. Only hard thinking, perhaps even soul searching, will reveal what really matters. This kind of self-reflective effort perplexes many people and makes them uncomfortable. But the more relentlessly you probe beneath the surface of "obvious" objectives, the better the decisions you'll ultimately make.

Third, decision-makers often *take too narrow* a *focus.* Their list of objectives is limited, omitting important considerations that become apparent only after they have made a decision. They concentrate on the tangible and quantitative (e.g., cost, availability) over the intangible and subjective (e.g., features, ease of use). "Hard" concerns drive out the "soft." In addition, they tend to stress the short-term (e.g., investment recovery) over the long-term (e.g., sustained product profitability).

Strategic thinkers since Benjamin Franklin in 1772 have long emphasized the need to clarify objectives as a key step in making informed decisions. More recently, Tom Peters and Robert Waterman refer to their "one all-purpose bit of advice for management" in the pursuit of excellence as "figure out your value system." However, figuring out a value system requires more than simply listing objectives. Identifying and organizing objectives is an art, but it's an art you can practice systematically by following these five steps:

Step 1: Write down all the concerns you want to address through your decision. In making your list, don't worry about including major concerns with ones that seem trivial. This is early in the process: Too much orderliness will only inhibit your creativity.

Also, it is all right to say the same thing in different ways. Rephrasing the same concern may help you uncover important nuances. Use as many ways as you can think of to jog your mind about present, future, and even hidden concerns. Expand your list by trying some of these techniques:

- Compose a wish list. Describe as completely as you can everything that you could ever want from this decision. What would make you really happy?
- Think about the worst possible outcome. What do you most want to avoid?
- Consider a great—even if unfeasible—alternative. What's so good about it?
- Consider a terrible alternative. What makes it bad?
- Think about how you would explain your chosen alternative to someone. How would you justify it?
- Ask people who have faced similar situations what they considered when making their decisions.

When facing a group decision, first have each person involved follow the above suggestions individually. Then combine the lists, using the varied perspectives to expand and refine first-take ideas. By initially freeing each person to search his or her mind without being limited by others' thoughts, you'll gel a more comprehensive list that more accurately reflects everyone's concerns.

Using these techniques and others of your own devising, you'll accumulate pages of notes describing what you most care about in the decision you face.

Step 2: Convert your general concerns into succinct objectives. The dearest and most easily communicated form for objectives is a short phrase consisting of a verb and an object, such as "Minimize economic costs," "Mitigate environmental damage," and so on.

Step 3: Separate ends from means to establish your fundamental objectives. Having drawn up your initial, rough list of objectives, you can now organize them. The challenge is to distinguish between objectives that are means to an end and those that are ends in themselves.

The best way to separate means from ends is to follow the advice of the common Japanese saying, "You don't really understand something until you ask five times, 'Why?'" Simply ask "Why?" and keep asking it until you can't go any further.

Take hazardous-material shipping as an example. One obvious objective is to "minimize accidents during shipment." But is this objective an end or a means? Let's ask "Why?" and find out.

So why do you want to minimize accidents?

Because it will reduce emissions of hazardous material.

Why is this important?

It will limit human exposure to the hazardous material.

Why is this important?

Because exposure can damage people's health.

And why is health damage an important concern?

Health damage just *is* important. It's an end objective that you are concerned with; everything else is a means of getting there.

Asking "Why?" will lead you to what you really care about—your fundamental objectives, as opposed to your means objectives. *Means objectives* represent way stations in the progress toward a *fundamental objective*, the point at which you can say, "I want this for its own sake. It is a fundamental reason for the interest in this decision." Fundamental objectives constitute the broadest objectives directly influenced by your decision alternatives.

Separating means and fundamental objectives is critical because both kinds of objectives play important but different roles in the decision-making process.

Each means objective can serve as a stimulus for generating alternatives and can deepen your understanding of your decision problem. Asking how you might minimize accidents during shipment of hazardous material, for example, could lead to several good alternatives that limit any health effects of exposure to that waste, such as designing special casks or vehicles for transporting the waste.

Many poor choices result from falling back on a default alternative.

Only fundamental objectives should be used to evaluate and compare alternatives. Sure, you want to do better in terms of your means objectives. But why? Only to do better in terms of your fundamental objectives. If you use a fundamental objective and its supporting means objectives to evaluate decision alternatives, you will give too much weight to that particular fundamental objective in your final choice.

Step 4: Clarify what you mean by each objective. At this point, you should have a solid list of fundamental objectives. For each fundamental objective, ask "What do I really mean by this?" Asking "What?" enables you to identify the components of your objective and better understand it. This will help you state the objective precisely and see how to fulfill it clearly. In addition, when it comes time to choose, you'll be prepared to appraise how well the objective will likely be achieved.

For many objectives, the bottom-line meaning will be obvious. "Minimize cost," for example, means just that: Spend the least possible number of dollars. The meaning of other objectives can be more elusive. You want to "minimize health effects" from a certain air pollutant. But exactly which health effects? And to whom? You might want to "maximize your company's image." But what do you mean by company image? In whose eyes? Think hard about such questions to clarify your objectives.

Step 5: Test your objectives to see if they capture your interests. Having clarified and organized your objectives, it's time to test them. Use your list

to evaluate several potential alternatives, asking yourself if you would be comfortable living with the resulting choices. If not, you may have overlooked or misstated some objectives. Reexamine them. A second useful test is to sec if your objectives would help you explain a prospective decision to someone else. If using your objectives as reasons and explanations would be difficult, you probably need to spend more time refining the objectives. What's unclear? What's missing?

Creating alternatives

The alternatives represent the range of potential choices you'll have for pursuing your objectives. Because of the central importance of alternatives, you need to establish a high standard for them. Two important points should be kept in mind. First, *you can never choose an alternative you haven't considered.* A new chemical process that would render your hazardous material relatively harmless may be an ideal solution to your problem, but if you're unaware of it, you cannot choose it. Second, *no matter how many alternatives you have, your chosen alternative can be no better than the best of the lot.* Thus, the payoff from seeking good, new, creative alternatives can be extremely high.

Unfortunately, people don't tend to think enough about their decision alternatives. Just as they assume they know their objectives (even when they don't), so they assume they know the options open to them. Too many decisions, as a result, are made from a poor set of alternatives. While the common denominator in all these cases is lack of thought, the essential problem can take many forms.

One of the most common pitfalls is business as usual. Because many decision problems are similar to others that have come before, choosing the same alternative beckons as the easy course. You have been scheduling your shop floor using the same software for five years, so it is easy to keep using it. But should you consider the potential gains of a newly available system? Business as usual results from laziness and an over-reliance on habit. With only a modest amount of effort, attractive new alternatives might be found.

But sometimes so-called new alternatives represent nothing more than incrementalizing—making small and sometimes meaningless changes to previously devised alternatives. This year's research budget may differ from last year's, but only by a few percent for each major project. Don't just tweak the status quo. Step back and develop alternatives that reflect original thinking and different perspectives.

Many poor choices result from falling back on a default alternative. Suppose you are not particularly satisfied with your supplier for an important part in a production process. A staff member has been searching for alternatives, but he is busy and knows that the current supplier will continue to be there. The result is that you end up with the default alternative of using the current supplier. Remember, every decision problem has multiple alternatives, even if it doesn't seem to at first. What people really mean when they say "no alternatives" is "no alternatives better than the default option"—yet. Creating fresh alternatives requires some focused thinking.

Choosing the first possible solution is another pitfall. Suppose you've experienced significant loss of revenue because of delays in shipping inventory from your manufacturing facility to your major distribution warehouses. It is clear that a substantial increase in your trucking fleet would solve this problem, so you buy more trucks and hire more drivers. But this alternative is very expensive. Perhaps a little more thought would have resulted in the design of a much-improved product information system that would do the job at least as well and much cheaper. Develop a new habit: Once you find a possible solution, look further—generate new alternatives that could lead to a better solution.

Generating a good set of alternatives is not all that difficult, but it takes time and thought. Try some of these techniques to make the most of your efforts:

- Use your objectives and ask "How?" Since objectives drive decisions, use them to guide your search for good alternatives. Ask yourself, "How can I achieve the objectives I've set?" Do this separately for each objective, including both means objectives and fundamental objectives.

  Asking "Why?" took you from means to ends; asking "How? will take you from ends back to means, leading you toward alternatives. After all, alternatives are the ultimate means. How would you fulfill the fundamental objective "Minimize the time until the new distribution center is operational"? One answer: by minimizing the time needed to get construction permits. How? By hiring an attorney who knows local regulations and local bureaucrats. This is an alternative.

- Challenge constraints. In our thinking about many decision problems, we use constraints that limit our alternatives. However, most constraints are not absolute. For example, you might decide that component parts should be delivered weekly, since you've grown accustomed to such delivery. But you find a high-quality, less expensive supplier that can guarantee delivery every 10 days. It doesn't meet your assumed constraint, but it may be a much better alternative.

  To ensure that you examine all viable alternatives, assume that a constraint doesn't exist. Then create alternatives that reflect its absence. A utility company, for example, assumed that its proposed new power plant had to be on a waterway to ensure a sufficient supply of cooling water. Working within this constraint, it found that all of its alternatives would cost more than $1.5 billion and result in significant environmental damage. Under pressure from environmentalists, the utility removed the waterway constraint and took a fresh look at its alternatives. Freed from its self-imposed straightjacket, it identified an inland site that required pumping water a modest 12 miles. The result: a $1.2 billion facility that caused only minimal environmental damage.

One way to increase the chance of finding good, unconventional alternatives is to set targets that seem beyond reach.

- Set high aspirations. One way to increase the chance of finding good, unconventional alternatives is to set targets that seem beyond reach. High aspirations force you to think in entirely new ways rather than sliding by with modest changes to the status quo.

  In the late 1980s, for example, many companies sought to lower costs by reducing the size of their support staffs. A common aspiration was a 15 percent to 20 percent cost reduction. By automating formerly manual processes, some companies managed to lay off enough people to cut their costs the desired amount. They were delighted—until they heard about competitors who had set cost-reduction goals of 50 percent and had met them. Forced to think in new ways, these companies outsourced some of their support functions entirely, transforming their corporate structures. Setting high aspirations stretches your thinking.

- Do your own thinking first. Before consulting others about alternatives, give your own mind free reign. Some of your most original ideas may be suppressed if exposed to others' ideas and judgments before they have been fully formed. Sometimes ignorance is bliss, so let loose your own creativity for a while. Once you buy into another person's line of thinking, especially someone expert in the matter at hand, your own thoughts may be prematurely knocked out of the running. Noted MIT professor Norbert Wiener, one of the creative geniuses of the 20th century, always spent time thinking through a new scientific problem on his own before reading the existing academic literature.
- Learn from experience. You shouldn't let yourself be constrained by history, but you should certainly try to learn from it.

  Find out what others have done in similar situations, and if you have faced similar decisions before, reconsider the alternatives you devised then. Don't, however, limit your alternatives to those previously considered: You don't want to fall into the business-as-usual trap.

Don't limit your alternatives to those previously considered: You don't want to fail into the business-as-usual trap.

A professional opportunity

Making good decisions is a fundamental skill. Yet, few industrial engineers have had the opportunity to develop their decision-making skills in the manner that we learn other skills such as tennis, golf, or playing a musical instrument For other skills, we break our subject of interest (e.g., tennis) into elements (e.g., serve, backhand, forehand, and net play). We next learn how to execute each element and we practice frequently in simple situations. Then we try to integrate these elements in interesting situations (a tennis

game) to play better and better. Recognize that even world-class tennis players have coaches, work on the elements, practice, and strive to improve.

For most people, good decision-making is more important than tennis for their career and life, it is worth treating decision-making as a skill and working to improve it.

The elements of decision-making described here allow you to sharpen your objectives and create better alternatives. They are easy to use and require no special training, but they do require some hard thinking. They allow all team members as well as management and clients (when engineers are consultants) to participate meaningfully. This not only contributes to a more complete set of objectives and a more inspired set of alternatives, but it enhances the necessary acceptance of the process by participants.

Reading 25: Strategy as strategic decision making

Kathleen M. Eisenhardt

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Many executives realize that to prosper in the coming decade, they need to turn to the fundamental issue of strategy. What is strategy? To use a simple yet powerful definition from *The Economist*, strategy answers two basic questions: "Where do you want to go?" and "How do you want to get there?"[1]

Traditional approaches to strategy focus on the first question. They involve selecting an attractive market, choosing a defensible strategic position, or building core competencies. Only later, if at all, do executives address the second question. Yet in today's high-velocity, hotly competitive markets, these approaches are incomplete. They overemphasize executives' ability to analyze and predict which industries, competencies, or strategic positions will be viable and for how long, and they underemphasize the challenge of actually creating effective strategies.

Many managers of successful corporations have adopted a different perspective on strategy that Shona Brown and I call "competing on the edge."[2] At the heart of this approach lies the recognition that strategy combines the questions of "where" and "how" to create a continuing flow of temporary and shifting competitive advantages. Executives from a variety of firms echo this perspective. John Browne, CEO of British Petroleum, stated, "No advantage and no success is ever permanent. The winners are those who keep moving."[3] Michael Dell, CEO of Dell, commented, "The only constant in our business is that everything is changing. We have to be ahead of the game."[4] But creating a series of shifting advantages is challenging. It requires effective strategic decision making at several levels: at the unit level, to improvise business strategy; at the multibusiness level, to create collective strategy and cross-business synergies; and at the corporate level, to articulate major inflection points in strategic direction.

This article describes strategy as strategic decision making, especially in rapidly changing markets. Its underlying assumption is that "bet the company" decisions — those that change the firm's direction and generate new competitive advantages — arise much more often in these markets. Therefore, the ability to make fast, widely supported, and high-quality strategic decisions on a frequent basis is the cornerstone of effective strategy. To use the language of contemporary strategy thinking, strategic decision making is the fundamental dynamic capability in excellent firms.

These ideas come from more than a decade of research on strategy in high-velocity markets. During one phase of that research, Jay Bourgeois and I examined top-management teams and their decisions in twelve entrepreneurial firms in Silicon Valley. Using questionnaires and open-ended interview questions, we studied decision speed, conflict over goals and key

decision areas, executive power, and politics. In addition, we traced the multiple strategic decisions and firm and decision performance. During a second phase of research, Shona Brown and I studied six matched pairs of European, Asian, and North American multibusiness firms (six dominant and six modestly successful ones) in the broader context of strategy. We gathered data on strategic decision making and other critical processes at multiple levels within these more complex firms.

In both studies, dear differences stood out between the strategic decision-making processes in the more and less effective firms. Strikingly, these differences counter commonly held beliefs that conflict shows down choice, politicking is typical, and fast decisions are autocratic. In other words, these findings challenge the assumption of trade-offs among speed, quality, and support. Instead, the most effective strategic decision makers made choices that were fast, high quality, and widely supported. How did they do it? Four approaches emerged from this research and my other work with executives. Effective decision makers create strategy by:

- Building collective intuition that enhances the ability of a top-management team to see threats and opportunities sooner and more accurately.
- Stimulating quick conflict to improve the quality of strategic thinking without sacrificing significant time.
- Maintaining a disciplined pace that drives the decision process to a timely conclusion.
- Defusing political behavior that creates unproductive conflict and wastes rime.

Build collective intuition

One myth of strategic decision making in high-velocity markets is that there is no time for formal meetings and no place for the careful consideration of extensive information. Executives, the thinking goes, should consider limited, decision-specific data, concentrate on one or two alternatives, and make decisions on the fly.

Effective strategic decision makers do not follow that approach. They use as much as or more information than ineffective executives, and they are far more likely to hold regularly scheduled, “don’t miss” meetings. They rely on extensive, real-time information about internal and external operations, which they discuss in intensive meetings. They avoid both accounting-based information because it tends to lag behind the realities of the business and predictions of the future because these are likely to be wrong. From extensive, real-time information, these executives build a collective intuition that allows them to move quickly and accurately as opportunities arise.

A good example is Mercury (all company names in the study are pseudonyms), a highly successful computer venture whose management team is known for its ability to reposition the firm adroitly as opportunities shift. How do they do it? These managers claim to “measure everything.” They examine an array of key operating performance metrics that they collectively track monthly, weekly, and sometimes daily: inventory speed, multiple cash-

flow measures, average selling price of products, performance against sales goals, manufacturing yields, customer-acquisition costs, and gross margins by product and geographic region. They prefer operating information to more refined, accounting-based numbers. They also pay attention to innovation-related metrics such as sales from new products; time-related metrics such as trends in average sales size per transaction: rates such as number of new product introductions per quarter; and durations such as the time it lakes to launch a product globally.

In addition to internal operations information, the managers at Mercury track external information: new product moves by competitors, competition at key accounts, technical developments within the industry, and industry "gossip." Mercury's top-management team members play key roles in gathering and reporting these data. Each has areas of information for which he or she is responsible. For example, the vice president of marketing tracks product introductions and exits by the competition. The vice president of R&D reports the latest information on the "technical pulse" of the industry.

Sharing information at "must attend" meetings is an essential part of building collective intuition. The interplay of ideas during these meetings enhances managers' understanding of the data. At Saturn, a global leader in multiple technology-based businesses, the managers of each major business meet every four weeks in a day-long meeting to review the operating basics in their businesses and the state of the industry. Travel is frequent and necessary, but managers do not miss this meeting. As at Mercury, the emphasis is on real-time information, internal and external. In addition, each meeting covers one or two critical strategic issues facing either an individual business or the group of businesses as a whole. The result is a forum for signaling collaborative opportunities across businesses and for shaping the collective strategy.

In contrast, less successful top-management teams rarely meet with their colleagues in a group. Meetings are infrequent or skipped because of travel commitments. These executives typically make fewer and larger strategic choices. When they do turn their attention to important decisions, they rely on market analyses and future trend projections that are idiosyncratic to the particular decision. The result is groups of strangers who have difficulty engaging with one another productively. While they may each be knowledgeable in their own areas of responsibility, they do not develop collective intuition.

For example, at Aspen, a mediocre computer firm, the managers say they communicate frequently with the CEO but not with each other. One executive sketched herself as an "intelligent observer," detached from her colleagues. Another confided, "I don't really know the rest of the team." In one decision that involved a reconfiguration of the product mix in several manufacturing plants, the senior executives delegated the analysis to staff and did not return to the topic for four months. During the interim, the staff painstakingly assembled plant performance metrics that were routine at the more successful firms. The executive team then commissioned more analyses while they familiarized themselves with the issues.

Why do real-time information and "must attend" meetings lead to more effective strategic decision making? Intense interaction creates teams of

managers who know each other well. Familiarity and friendship make frank conversation easier because people are less constrained by politeness and more willing to express diverse views. The strategic decision process then moves more quickly and benefits from high-quality in-formation. For example, one manager at Mercury described the interactions as "open and direct." Another explained more graphically, "We get it out on the table and yell about it."

In addition, with intense interaction, managers naturally organize antipodal team-member roles, such as short-term versus long-term or status quo versus change.[5] At Mercury, for example, the vice president of marketing was seen as "constantly thinking about the future" whereas the vice president of engineering was considered to be the keeper of the status quo. Describing the interplay of their relationship, the engineering vice president said, "I depend on her to watch out for tomorrow — I look out for today." A range of perspectives improves decision quality by ensuring that managers consider different sides of the issue.

Most important, when intense interaction focuses on the operating metrics of today's businesses, a deep intuition, or "gut feeling," is created, giving managers a superior grasp of changing competitive dynamics. Artificial intelligence research on championship chess players indicates how this intuition is formed. These players, for example, develop their so-called intuition through experience. Through frequent play, they gain the ability to recognize and process information in patterns or blocks that form the basis of intuition. This patterned processing (what we term "intuition") is faster and more accurate than processing single pieces of information. Consistent with this research, many effective decision makers were described by their colleagues as having "an immense instinctive feel," "a high quality of understanding" and "an intuitive sense of the business." This intuition gives managers a head start in recognizing and understanding strategic issues.

Stimulate quick conflict

In high-velocity markets, many executives are tempted to avoid conflict. They assume that conflict will bog down the decision-making process in endless debate and degenerate into personal attacks. They seek to move quickly toward a few alternatives, analyze the best ones, and make a quick choice that beats the competition to the punch.

Reality is different. In dynamic markets, conflict is a natural feature of high-stakes decision making because reasonable managers will often diverge in their views on how the marketplace will unfold. Furthermore, as research demonstrates, conflict stimulates innovative thinking, creates a fuller understanding of options, and improves decision effectiveness. Without conflict, decision makers commonly miss opportunities to question assumptions and overlook key elements of the decision. Given the value of conflict, effective strategic decision makers in rapidly changing markets not only tolerate conflict, they accelerate it.

One way that executives accelerate conflict is by assembling executive teams that are diverse in age, gender, functional background, and corporate experience. At Venus, a high-growth venture in Silicon Valley, the executive

team ranges in age from late twenties to mid-fifties. The group includes several Europeans and a woman. Two members hold PhDs in electrical engineering and computer science, respectively. The president has an economics degree, an MBA, and manufacturing experience. The vice president of engineering came from a competitor, while the senior sales executive is a well-traveled industry veteran who had been at a number of firms before settling at Venus several years ago.

Like their counterparts at other successful firms, these executives say that they argue much of the time. The vice president of finance stated, "We all have different opinions." Another executive observed, "The group is very vocal. They all bring their own ideas." Particularly striking are the differences in perspectives across the age groups. The older executives usually rely on their expertise from the industry and from other companies to understand strategic choices. They have strong industry connections that pave the way for valuable collaborations with other firms. The younger executives bring in fresh ideas about how to compete and how to exploit the latest technology.

An alliance decision served to demonstrate the difference in outlook. Several of the experienced managers had been involved with both successful and unsuccessful alliances. They described an alliance as a "marriage between equals." The younger managers framed alliances as a way to gain money and credibility. Their take was that alliance partners were temporary "fellow travelers," not lifetime partners. They saw partners simultaneously as friends and foes. The Venus team engaged in extensive debate about alliances. The result was an innovative, alliance-led growth strategy that synthesized the flexible strategic thinking of the younger team members with the realism of the more mature managers. Describing these interactions, the vice president of marketing commented. "We scream a lot, laugh, and resolve the issues."

Another way that effective strategic decision makers accelerate conflict is by using "frame-breaking" tactics that create alternatives to obvious points of view. One technique is scenario planning: teams systematically consider strategic decisions in the light of several possible future states. Other techniques have executives advocate alternatives that they may or may not favor and perform role-plays of competitors. The details of the techniques are not crucial. Rather, the point is to use and switch among them to prevent stale thinking.

Jupiter, a multibusiness technology firm that has made highly successful acquisitions, provides a good illustration of how the techniques work. One acquisition included a stray business that was not part of the rationale for the purchase. The strategic decision focused on what to do with this business. Managers explored alternatives by creating scenarios of possible futures — such as the Unix operating system prevailing over Microsoft NT or wireless phones becoming more essential than PCs — and then considering how each alternative would play out. They also role-played different competitors to anticipate their responses. In addition, team members used the scenarios to do what is known as "backcasting" to extend their thinking. They envisioned their preferred future (i.e., one in which their firm dominated the market) and then thought backwards about how this ideal future might evolve.

Perhaps the most powerful way to accelerate conflict is by creating multiple alternatives. The idea is to develop alternatives as quickly as possible so that the team can work with an array of possibilities simulta-neously. As one executive at Jupiter commented, "We play a larger set of options than most people." It is considered entirely appropriate for executives to advocate options that they may not prefer simply to encourage debate.

The executive team at Jupiter, for example, launched its decision-making process to deal with the stray business by quickly developing several alternatives for that business. One called for the acquired business to operate as a new stand-alone division. The second option was to graft the business onto an existing Jupiter strategic business unit; the two businesses could then leverage a common marketing channel. A third option was to combine the business with an existing one with a complementary technology; this combination of businesses would then have sufficient scale to develop the technologies into a more viable business. The final option was to sell the business. Jupiter's executive team quickly compared options, explored them using the frame-breaking tactics noted above, and chose the third. As one executive observed, "There should be three or four solutions to everything." Added another, "We have a preference for working a multiple array of possibilities instead of just a couple."

Why do diverse teams, frame-breaking techniques, and multiple alternatives lead to faster conflict and ultimately more effective decisions? The rationale for diverse teams is clear: these teams come up with more varied viewpoints than homogeneous teams. The value of frame-breaking techniques is more subtle. In addition to the obvious benefit of generating many different perspectives, these techniques establish the norm that constructive conflict is an expected part of the strategic decision-making process. It is acceptable and even desirable to engage in conflict. Furthermore, frame-breaking techniques are intellectually engaging and even fun. They can motivate even apathetic executives to participate more actively in expansive strategic thinking.

The power of multiple alternatives comes from several sources. Clearly, pushing for multiple alternatives speeds up conflict by stimulating executives to develop divergent options. It also enables them to rapidly compare alternatives, helping them to better understand their own preferences. Furthermore, multiple alternatives provide executives with the confidence that they have not overlooked a superior option. That confidence is crucial in rapidly changing markets, where the blocks to effective decision making are emotional as much as cognitive. Finally, multiple alternatives defuse the interpersonal tension that can accompany conflict by giving team members room to maneuver and save face when they disagree. One Jupiter manager told us, for example, that he was strongly against selling the business or setting it up as a stand-alone division. But he could "live with" either of the two combination options.

Maintain the pace

Less effective strategic decision makers face a dilemma. On the one hand, they believe that every strategic decision is unique. Each requires its own

analytical approach, and each unfolds in its own way. On the other hand, these same decision makers believe that they must decide as quickly as possible. Yet making quick choices conflicts with making one-of-a-kind choices.

Effective strategic decision makers avoid this dilemma by focusing on maintaining decision pace, not pushing decision speed. They launch the decision-making process promptly, keep up the energy surrounding the process, and cut off debate at the appropriate moment. They drive strategic decision-making momentum.

One way that these decision makers maintain decision pace is by following the natural rhythm of strategic choice.[6] They use rules of thumb for how long a major decision should take. Surprisingly, that metric is a fairly constant two to four months. If a decision takes longer, then the management team is trying to decide too big an issue or is procrastinating. If a decision takes less time, then the decision is not strategic enough to warrant management team attention. These decision makers are able to gauge the scale of a decision by recognizing similarities among strategic decisions. That is, each strategic decision is different, but it falls into familiar patterns whose scope and timing are well-known — for example, new product, new technology, or acquisition decisions. They also view a decision as part of a larger web of strategic choices. This allows executives to adjust the scope of a decision to fit the allotted time frame as the process unfolds. Plus, placing strategic decisions in a larger context lowers the emotional stakes of a choice.

The top-management team at Mars, a leading technology firm, uses a rhythm of three to four months for strategic decisions. Typical strategic decisions include entering or exiting markets, investing in new technology, building manufacturing capacity, or forming strategic partnerships. A decision arose concerning how to enter an emerging Internet-based market in e-commerce tools. Although the team had much to learn about the Internet, Mars executives framed the issue as a market-entry decision; as a result, they knew how to begin to gather relevant data. Because they estimated that the decision should take three months, Mars executives could establish milestones and adjust the decision scope as needed to fit the time frame. As the decision-making process progressed, team members realized that the market opportunity fit into a more complex context of e-commerce business than they had originally envisioned. They therefore reconceptualized the immediate strategic choice as part of the larger e-commerce effort and expanded the size of the market under consideration.

In addition, executives maintain pace by prototyping decisions us they analyze them. Instead of merely analyzing options in the abstract, they test them. For example, the Mars executives simultaneously explored relationships with several potential partners to jointly develop e-commerce tools and tested alternative, in-house product designs with several marquee customers. As a result, they were able to hone their understanding of which tools were essential for their e-commerce entry even as they began to implement parts of the final decision.

Effective strategic decision makers skillfully cut off debate, typically using a two-step method called “consensus with qualification” to bring decision

making to a close. First, managers conduct the decision process itself with the goal of consensus in mind. If they reach consensus, the choice is made. If consensus does not emerge, they break the deadlock using a decision rule such as voting or, more commonly, allowing the manager with the largest stake in the outcome to make the decision. In the case of the e-commerce entry decision, Mars executives were divided over whether to develop a key product in-house or in partnership with another firm. The CEO and the vice president of engineering finally made the call. Not everyone agreed with the choice, but each team member had a legitimate voice in the process. As one executive told us, "Most of the time we reach consensus, but when we can't, Gary [the CEO] pulls the trigger."

In contrast, less successful strategic decision makers stress the rarity and significance of strategic choices. Because the choice then looms so large, they often procrastinate at the start of the decision-making process. Later, they lack a method for pacing their efforts. They oscillate between letting critical issues languish and making "shot gun" strategic choices against deadlines, as the case of Copper, a modestly successful multibusiness computing firm, illustrates. Managers faced a choice over how to organize a sales channel that was to be shared by several businesses. Sharing the channel offered benefits through cost-sharing and cross-selling of products. Although the opportunity had been apparent for some time, the managers did not get around to doing anything for several months. Everyone was avoiding what appeared to be a big task. Once they did get moving, they attempted to come up with a plan that all the major stakeholders would accept. The decision process stretched out over eight months, with most managers becoming frustrated by the seemingly endless meetings to gain consensus. Several disengaged from the process. Eventually, the head of one major business simply implemented his choice with the field sales force, and the rest of the business heads were left scrambling.

Decision-making rhythm helps managers plan their progress and forces them to recognize the familiar aspects of decision making that make the process more predictable. As significant, it emphasizes that hitting decision timing is more critical than forging consensus or developing massive data analyses. As one manager told us, "The worst decision is no decision at all." Prototyping encourages managers to take concrete actions that remove some of the unpredictability that can trigger procrastination. Furthermore, prototyping keeps managers focused on the goal of executing a choice and even begins the implementation process. The result is momentum that lowers the cognitive and emotional barriers to choice and that spurs managers toward a conclusion.

Consensus with qualification maintains the pace by taking a realistic view of conflict as valuable and inevitable. Therefore, the endless search for consensus emerges as a fruitless goal. At the same time, consensus with qualification allows decision makers to resolve conflict (and so maintain pace) in a way that team members perceive as equitable. Most managers want a strong voice in the decision-making process but do not believe that they must always get their preferred choice. Consensus with qualification lets decision makers drive decision pace by providing an effective way to reach closure without consensus. For example, at Mars, all the key managers contributed to the market-entry discussion. But when it became apparent that

they were stuck in two opposing camps, the CEO and VP of engineering made the call. As one manager observed, "Consensus is nice, but we have to keep up with the train."

Defuse politics

Some executives believe that politics are a natural part of strategic choice. They see strategic decision making as involving high stakes that compel managers to lobby one another, manipulate information, and form coalitions. The game quickly becomes a competition among ambitious managers.

More effective strategic decision makers take a negative view of politicking. Since politicking often involves managers using information to their own advantage, it distorts the information base, leading to a poor strategic decision-making process. Furthermore, these executives see political activity as wasting valuable time. Their perspective is collaborative, not competitive, setting limits on politics and, more generally, interpersonal conflict.

One way in which effective executives defuse politics is by creating common goals. These goals do not imply homogeneous thinking. Rather, they suggest that managers have a shared vision of where they want to be or who their external competitors are. Managers at Neptune, a successful multibusiness computing firm, are highly aware of their external competition. At their monthly meetings, they pay close attention to the moves of the competition and personalize that competition by referring to individual managers in competitor companies, particularly their direct counterparts. They have a clear collective goal for their own ranking and market-share position in the industry. It is to be number one. At Intel, managers typically contend that "only the paranoid survive." Neptune's managers have their own more positive rallying cry: "Let's get rich together!"

A more direct way to defuse politics is through a balanced power structure in which each key decision maker has a clear area of responsibility, but in which the leader is the most powerful decision maker. At Venus, the CEO is described as a "team player." Quantitative ratings and qualitative descriptions reveal that he is the most powerful person on the executive team, but that he directs decision making only in the arena of corporate organization. Other members of the executive team direct other decisions: the vice president of engineering runs the product development portfolio, the vice president of manufacturing makes the key supply-chain choices, and so on. As one manager pointed out, "Kim [the CEO] believes in hiring great people and letting them run their own shows." Paradoxically, the clear delineation of responsibility makes it easier for managers to help one another and share information because each executive operates from a secure power base. As another manager told us, "We just don't worry much about an internal pecking order."

Humor defuses politics. Effective strategic decision makers often relieve tension by making business fun. They emphasize the excitement of fast-paced markets and the "rush" of competing in these settings. Senior executives at Mercury have articulated "fun" as a management goal. Laughter is common, and practical jokes are popular, especially around April Fool's Day and Halloween.

Less effective strategic decision makers usually have an inward, competitive focus. As a result, they lack the sense of teamwork that characterizes more effective teams. The power structure is typically dysfunctional. A good example is Targhee, a modestly successful Internet firm, where the general manager dominates virtually every aspect of the business. As one manager commented, "Chuck runs the entire show." The result is that the managers who work for Chuck concentrate on impressing him rather than on making smart strategic choices. Another manager observed, "We're all trying to maneuver around to look good in front of Chuck." To make matters worse, Chuck constantly blurred the lines of responsibility, leaving managers insecure and jockeying for position. Noted another manager, "It's like a gun about to go off. I just try to stay out of the cross-fire."

Common goals, clear areas of responsibility, and humor defuse politicking and interpersonal conflict. Goals that stress collective success or common enemies give managers a sense of shared fate. They see themselves as players on the same team, not as competitors. A balanced power structure gives managers a sense of security that dispels the assumption that they need to engage in politicking. For example, at Venus, there was little evidence of politicking. As one manager stated, "We don't have time for politics. I barely get to the meetings." Another said, "We don't have any kind of political stuff. Nobody lobbies behind other people's backs. We just get everything out and talk about it." A third commented, "We're very apolitical." As a result, managers did not hold back information, wasted less time on politics, and made faster, more informed decisions.

Humor strengthens the collaborative outlook. It puts people into a positive mood. Research has shown that people whose frame of mind is positive have more accurate perceptions of each other's arguments and are more optimistic, creative in their problem solving, forgiving, and collaborative. Humor also allows managers to convey negative information in a less threatening way. Managers can say something as a joke that might otherwise be offensive.[7]

Toward effective strategic decision making

In high-velocity, hotly competitive markets, traditional approaches to strategy give way to "competing on the edge," where strategic decision making is the fundamental capability leading to superior performance. After all, when strategy is a flow of shifting competitive advantages, the choices that shape strategy matter greatly and occur frequently.

The research data corroborate this view, demonstrating that firms with high performance in profitability, growth, and marketplace reputation have superior (i.e., fast, high-quality, and widely supported) strategic decision-making processes. These processes support the emergence of effective strategy. Firms that were more modest performers had strategic decision-making processes that were slower and more political. Their strategies were more predictable and less effective. Executives in these firms often recognized that their strategic decision making was flawed, but they did not know how to fix it.

I have described the four keys to strategy as strategic decision making:

- Set the stage by building collective intuition through frequent meetings and real-time metrics that enhance a management team's ability to see threats and opportunities sooner and more accurately.
- Stimulate quick conflict by assembling diverse teams, challenging them through frame-breaking heuristics, and stressing multiple alternatives in order to improve the quality of decision making.
- Discipline the timing of strategic decision making through time pacing, prototyping, and consensus with qualification to sustain the momentum of strategic choice.
- Defuse politics by emphasizing common goals and clear turf, and having fun. These tactics keep decision makers from slipping into destructive interpersonal conflict and time-wasting politics.

Taken together, these approaches direct executive attention toward strategic decision making as the cornerstone of effective strategy.

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Readings for Block 3

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Tables

Figures