Navigating in the new competitive landscape: Building strategic flexibility and competitive advantage in the 21st century

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Executive Overview

A new competitive landscape is developing largely based on the technological revolution and increasing globalization. The strategic discontinuities encountered by firms are transforming the nature of competition. To navigate effectively in this new competitive landscape, to build and maintain competitive advantage, requires a new type of organization. Success in the 21st century organization will depend first on building strategic flexibility. To develop strategic flexibility and competitive advantage, requires exercising strategic leadership, building dynamic core competences, focusing and developing human capital, effectively using new manufacturing and information technologies, employing valuable strategies (exploiting global markets and cooperative strategies) and implementing new organization structures and culture (horizontal organization, learning and innovative culture, managing firm as bundles of assets). Thus, the new competitive landscape will require new types of organization and leaders for survival and global market leadership.

A new competitive landscape is taking shape. Managers and government policy makers are encountering major strategic discontinuities that are changing the nature of competition. The technological revolution and increasing globalization present major challenges to firms' ability to maintain their competitiveness. Some of the recent important strategic discontinuities encountered include the elimination of industry boundaries, fewer distinctions between industrial and service businesses, major advances in logistics, computer aided design and communication, and opening of global markets. Firms encounter these changes at the same time they are experiencing intense foreign competition in domestic markets. These changes rival those experienced with the industrial revolution and their impact is likely to rival that of the major advances of the light bulb, telephone, printing press, and the personal computer.¹

The development of standard management thinking was based in a time when most firms operated on a landscape that was relatively smooth with only mildly hilly terrain. Boundaries were more easily identified and firms faced a more level playing field with their competitors. There was reasonable availability of common information, fewer variations in international operations or involvements, and similar industry-wide accounting practices. However, with the changed dynamics in the new competitive landscape, firms face multiple discontinuities that often occur simultaneously and are not easily predicted. The terrain in this new landscape changes unexpectedly and has many hills, mountains and valleys. Faced with unrelenting complexity, firms must develop new strategies and new ways of organizing to deal with this exceedingly complicated landscape. It requires that they use the latest technology, continue to develop new technology, actively participate in global markets, structure them-
selves to gain advantage in these markets, develop and maintain strategic flexibility, and build a long-term vision that allows managers to balance short-term performance with long-term needs. In short, firms must develop the ability to effectively navigate in the new competitive landscape. To do so, requires significant revision of standard management thinking and strategic process.

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.²

Technological Revolution
The new information highway (i.e., Internet) supplies information in a manipulable form and makes it available almost instantaneously.³ 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.⁴

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.

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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.⁵ 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.

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. 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.

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. 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.

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.

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." 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.

Navigating in the New Competitive Landscape
The dynamism, uncertainty and unpredictability in the new competitive landscape requires sub-
stantive changes in many firms to be competitive. Perhaps the most important attribute that firms must achieve to operate effectively in the new competitive landscape is that of strategic flexibility.

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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. 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.

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

FIGURE 2

Building Strategic Flexibility and Competitive Advantage.
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. 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." 

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.

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 downsized 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. 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.

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.

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.
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 re-conceptualize) 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. 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 5.8 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.”

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.” 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.

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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.

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. 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
amounts to continuously develop their human capital as well. These actions are explored below.

Outsourcing

Contingency Workers and Outsourcing

Approximately 25 percent of the more than 100 million employed workers in the U.S. are contingency workers. Contingency workers include those who are part-time, temporary and on contract. Some have referred to these employees, particularly contract workers, as "virtual" employees. Analysts estimate that the number of contingency workers will continue to grow and may be as much as 50 percent of the U.S. workforce by the year 2000. However, the U.S. is not the only country in which this has become a trend. The contingent workforce has been growing in Western Europe, Japan, Latin America and Canada in recent years.

The use of contingency workers and outsourcing is to provide firm flexibility in reconfiguring resource deployments (and reduce costs) and reduce response times to major environmental changes. According to Michael Malone, author of *The Virtual Corporation*, "We appear to be racing toward a protoan, freelance economy in which a typical company will consist of a small core of long-term employees (to maintain the enduring relationships with suppliers, distribution channels, and customers) surrounded by an ever-changing cloud of contractors, semi-permanent employees, and company-to-company relationships." However, firms must take care not to overuse contingency workers or to outsource too many or critical functions, because the potential costs of such actions include lower employee morale, motivation, commitment and productivity and loss of critical capabilities and control. Furthermore, contingency workers, particularly in conjunction with more permanent employees, must be managed in a delicate and sensitive manner. Thus, while this strategic approach can provide significant flexibility to firms, there are a number of potential subtle and hidden costs that must be weighed carefully in the decision to use contingency workers.

Technical and professional workers represent one of the fastest growing segments of contingency workers. Some firms, in fact, are hiring temporary chief financial officers and managers. As many as 20,000 interim managers are working in the United Kingdom. These high caliber professionals possess strong managerial skills, such as the ability to see the big picture, and can readily interact with other internal and external professionals (e.g., bankers, lawyers, etc.). As a result, they can offer short-term solutions to corporate crises and managerial resource deficiencies.

Contingency workers, in some cases, receive less pay, but in nearly all cases, receive few or no benefits. Because benefits represent approxi-
mately 60 percent of total compensation costs, the use of contingency employees can represent a significant reduction in labor costs. An additional benefit to a smaller permanent workforce is the ability to make strategic moves more quickly. With fewer encumbrances and employees to gain commitment to changes, firms are able to implement major strategic changes rapidly and more efficiently.

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Similar to the use of contingency workers is the outsourcing of some firm operations. In recent years, many firms have outsourced functions that are not core to their businesses and on which they are unable to build a competitive advantage. For example, approximately 20 percent of the largest U.S. firms have outsourced the information technology function and U.S. corporations spent about $38 billion on such outsourcing in 1995 (its growth is predicted to be 22 percent annually through 1999). Firms can reduce costs, often significantly, through outsourcing. For example, Boeing Co. estimates that it saves approximately $600 million annually by outsourcing a number of aircraft components and parts.33

While the use of contingency workers and outsourcing activities can produce benefits for a firm, it also may create static rather than dynamic flexibility. With fewer employees and activities, the firm may be able to act/react faster but may not possess the capabilities to change in the ways needed. Firms can lose control over outsourced functions and be at the mercy of their suppliers. Furthermore, firms using significant numbers of contingent employees may actually reduce rather than build their skill set and knowledge base, necessities to survive in the new competitive landscape.34

Because of the critical importance of human capital, the costs of contingency workers can be high. For example, not only can firms lose important employee skills by using more contingency workers, they also lose employee loyalty and commitment. Employees who lack commitment may be unwilling to expend extra effort on behalf of the organization when needed. Furthermore, these employees may be less motivated and thereby less productive than permanent employees in similar positions. Finally, contingency work arrangements often preclude the organization from capturing the benefits of firm specific knowledge or capabilities that are often developed by permanent employees.35

The management of contingency workers is also an important issue. Contingency workers sometimes are treated in less personal ways and often feel much more insecure about their longer-term employment opportunities. Substantive use of contingency workers can also create potential friction between this group of employees and those of a more permanent nature. Therefore, it may be difficult to integrate the two groups of employees to work cooperatively on major projects and programs.36 Finally, employment of contingency workers in critical positions where safety (or confidentiality) is a concern may be a mistake. For example, safety problems have occurred in units employing contingency workers in the petrochemical industry.37

Thus, we may conclude that contingency workers and outsourcing must be used with great care. Their use may create static rather than dynamic flexibility. That is, firms using such approaches may have the flexibility to change but not the skills necessary to change in the ways necessary to navigate effectively in the new competitive landscape.

**Developing Employee Skills**

Firms need to develop dynamic strategic flexibility. That is, they must have the knowledge and skills to make the changes needed to gain an advantage in the new competitive landscape. To do so, they need to invest significantly in the development of human capital. Such investment is necessary to have dynamic core competences and contributes to organizational learning. Research suggests that U.S. firms may not be developing their human capital appropriately to achieve dynamic flexibility relative to their international competitors. For example, firms from England, France, and Germany invest about .25% of their countries’ GNP in employee training and development programs while U.S. firms invest about .05% of the GNP on skill development. On a per employee basis, U.S. companies spend about $1,800 on training and development programs while British and German companies spend about $5,000 and $8,000 respectively.38

Intel is a firm that invests heavily in human capital. As an example, it offers free voluntary employee development programs (e.g., language training, technical skill training). Many Intel employees take advantage of these opportunities. Re-
Recently, when one of Intel's businesses experienced a downturn in demand, it was able to deploy 90 percent of employees to other (often new) business areas largely because of the new skills the employees acquired from the voluntary development program.

In short, developing human capital helps create dynamic strategic flexibility while use of contingency workers and outsourcing, now popular in industry, largely creates static flexibility. Therefore, we argue that increasing emphasis be placed on continuously developing human capital. Such emphasis is particularly important in the deployment of new technologies.

Effective Use of New Technology

New technology is being developed in many areas but perhaps the most significant developments have occurred in manufacturing and information technologies. Thus, we focus on those two.

Manufacturing Technology

New and emerging technologies have altered the economies of manufacturing and increased the ability to produce more product variety and flexibility by taking advantage of economies of scope. Among the advanced manufacturing technologies that facilitate the development of strategic flexibility are computer-integrated manufacturing (CIM), flexible manufacturing systems (FMS), and computer-aided design and computer-aided manufacturing (CAD/CAM). These manufacturing technologies, when properly implemented, help firms customize their strategies such that they can simultaneously manufacture products of high variety at low cost, and design and commercialize new products in much shorter time cycles.

These sophisticated manufacturing technologies help firms exploit economies of scope and improve their responsiveness to environmental changes. Increased speed arises from the ability of the system to incorporate new product design variance as well as the more effective integration of design and manufacturing activities. Technology provides the ability to implement flexible, modular production set ups and rapid changeover of tools used in the production process that is software driven and expandable to include a broad range of design families. Economies of scope arise from the ability to manufacture a broader range of product components and families as well as from the internal synergies resulting from integration of the firm's subunits, particularly between design and manufacturing. Investment in advanced manufacturing technology (AMT) expands the firm's strategic flexibility because it provides opportunities for future technological growth (e.g., through new product designs). As a result, implementation of AMT and CAD/CAM systems, in addition to facilitating the integration of design and manufacturing units, can also help build linkages with suppliers and customers. In fact, software is becoming an important part of most manufacturing processes. For example, often, new manufacturing facilities are equipped with software that accounts for approximately 20 percent of the total costs.

Some argue that modular product designs are perhaps the most significant source of strategic flexibility. A modular product design creates standardized interfaces in a product architecture that permits a range of variations in components without requiring changes in the overall product design or other components in the product. Also, the new technologies described above provide resource flexibilities that improve the ability of the firm to cope with internal and external contingencies. Thus, in addition to other benefits, new AMT can increase the strategic flexibility of firms.

Application of sophisticated new technologies has led to the development of mass customization. Mass customization is a process by which firms apply technology and management methods to produce flexibility and rapid responsiveness and thereby customize products to customers' special needs. Mass customization is likely to become the norm approach to manufacturing products by the year 2000. George Fisher, CEO of Eastman Kodak Co., suggests that "...the need for new technologies, improved quality, and faster development-to-market cycle times will increase as we move literally from mass marketing to markets of one." Mass customization is likely to become the norm approach to manufacturing products by the year 2000.

In 1991, Andersen Windows offered its customers 86,000 different products. This complexity resulted in calculations for price quotes requiring several hours and up to 15 pages of information. In addition, 20 percent of the truckloads of Andersen Windows contained an error, which was very costly. Because of these problems, Andersen implemented new technology to provide mass customization of windows for customers. Using an interactive computerized catalog for retailers, Andersen
now offers 188,000 different products with most customized. Now fewer than one in 200 truckloads contain an inaccurate order. Andersen is continuously working to improve its technology to produce purer forms of mass customization.44

Information Technology

The other critical domain for new technology application is information (and communication) technology. In fact, some firms may use innovations in information systems to gain a competitive advantage. The computerized reservation systems developed by U.S. airlines exemplify this approach. One of the best examples is the SABRE system developed and implemented by American Airlines. The development of the initial system required four and one-half years, over 400 person years of effort, and cost a total of $30 million (in 1960 dollars). This computer reservation system represented a revolutionary innovation and made other carriers captive to the American Airlines system. American Airlines charged rent for the use of its system and acquired significant first mover advantages with this innovation. American Airlines has recently introduced a new system with open architecture called EAAasy Saber. Expectations are for EAAasy Saber to again represent a revolutionary innovation by American Airlines.45

While much emphasis has been placed on vertical information systems, firms must also develop and utilize horizontal information systems to help coordinate activities across units. Such coordination is particularly important in firms that have adopted horizontal structures (discussed in a later section) and firms operating in global markets that desire to achieve economies of scope across separate international locations. Such information systems in combination with the vertical information systems can aid firms in making faster and higher quality strategic decisions and in developing and moving new products to the market more quickly. Essentially, such an information system helps coordinate and share the firm’s collective knowledge across major operations.46

Horizontal information systems are being used to coordinate across global operations by such firms as Sun Microsystems, Gillette and Goodyear Tire & Rubber Co. Sun Microsystems offers 24-hour technical services through a single phone number by drawing on employee teams in California, England and Australia. The teams coordinate their efforts electronically through a horizontal information system. Goodyear, on the other hand, can redirect output from its Turkish plant, when demand for its tires in Turkey is low, to other locations in Europe where demand remains strong. Thus, horizontal information systems also help coordinate manufacturing and moving products to locations where demand is strongest.47 In effect, both vertical and horizontal information systems provide support for the utilization of organizational capabilities and competences. The increasing knowledge intensity present in the new competitive landscape requires the effective use of information technology to support managerial operations and required innovation as well.

MBNA, a credit card company, uses the most up-to-date information technology to ensure accuracy and speed in its transactions. MBNA focuses on the high end of the credit card market where customers demand speedy service and accuracy. As a result, MBNA has standards that include processing customer address changes in one day, answering all telephone calls within two rings and transferring customer calls to the correct party within 21 seconds. Credit line increase requests are processed within 15 minutes for platinum card holders and 30 minutes for standard cardholders. These times require sophisticated technology and current information databases.48

Bill Gates, founder and CEO of Microsoft, predicts that the information highway will become the world’s department store. He suggests that products will be available for examination, comparison and customization globally through the information highway.49 Thus, use of new technology can contribute to strategic flexibility and increase speed of action. It also can facilitate coordination across international operations including, strategic alliances.

Engaging in Valuable Strategies

While there are many firm strategies, our focus is on two that have the greatest opportunity to contribute to strategic flexibility and competitive advantage over time, exploiting global markets and using cooperative strategies.

Exploiting Global Markets

In general, firms that diversify into international markets tend to outperform their domestic competitors. Furthermore, these firms tend to be more innovative than others because of the larger markets in which to obtain the returns as well as providing the resources necessary to develop major new innovations. International markets also create opportunities to expand product life cycles and to earn greater returns on innovations. In addition to these incentives to move into international mar-
kets, increasing globalization places strong pressures on firms to do so. For example, increasing globalization creates greater competition in most firms' domestic markets. Thus, they may seek to enlarge their markets rather than competing solely for a domestic market with more contestants. As a result, an increasing number of firms, large and small, are attempting to exploit global markets. Interestingly, a recent survey showed that approximately 50 percent of small businesses in the U.S. were operating in international markets, up from 20 percent in the early 1990s.

Effective implementation of international diversification requires coordination of subsidiary/business activities across country locations. In the new competitive landscape, multinational corporations can no longer compete as a collection of independent subsidiaries. Rather, they must integrate their activities across geographic locations in order to share resources and gain economies of scope. Multinational firms must develop into transnational organizations that provide for global coordination (to share resources and gain economies of scope) and at the same time allow local autonomy (to take advantage of the opportunities in local country markets).

The challenge of transnational firms is to identify and exploit cross-border synergies, and balance local demands with the global vision for the organization. This requires a networking flexibility. Networking flexibility refers to the ability of firms' subunits to develop networks of relationships with external parties to improve the firms' acceptance by these parties and improve the satisfaction of customer needs. These relationships may be developed at the local, national, regional and even global levels. For example, a firm may establish a strong relationship with a local supplier in one region and product area but with a global supplier in another product area.

Building an effective transnational organization requires a corporate culture that values global dissimilarities in both cultures and markets. Research has shown that firms with such values operating in global markets outperform firms with other types of values. An appropriate corporate culture is also necessary to promote an internationally integrated organization. For example, Asea Brown Boveri uses a corporate culture to foster an internal cooperative attitude and clearly is an organization that emphasizes geocentrism. Use of sophisticated computer mediated networks (e.g., intranet) facilitates coordination across country boundaries and helps diffuse the corporate culture.

Research has found powerful forces within international organizations that restrain the sharing of assets and authority across divisions/subsidiaries operating in different countries. One of the most critical forces restraining the sharing of assets is the continued domination of the home market in the decision processes of the firm. Thus, there was resistance to including other country perspectives and political pressures both within and outside the firm that sustained current decision making authorities and processes.

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Yet, interdependence among international businesses within a multinational firm demands high levels of coordination and collaboration. To do so, requires increased sharing of information across country borders, socialization of managers through in-house training, and establishment of horizontal structures to integrate the various organizational units in making key decisions. The implementation of sophisticated information system networks is often necessary to facilitate the sharing of information and knowledge. Texas Instruments changed its manufacturing and sales organizations to encourage and facilitate the sharing of resources at its various locations throughout the world. For example, it now uses a ten-person team to plan and oversee the building of manufacturing facilities. Use of this cross-functional, cross-geographic team has helped the firm complete plants eight months faster than competitors. The traditional country sales groups were replaced by a team of product specialists that routinely moves across countries and continents. These innovations help TI operate its 17 plants world-wide as a single, virtual manufacturing facility.

Michael Porter predicted that over the next 25 years there will be enormous growth and opportunities in international markets, but it will also be a time of unfettered competition. To take advantage of these opportunities, Porter suggests, will require integrating company activities into distinctive competitive systems. Such integration will demand a high level of coordination across functional and geographic boundaries.

Beyond transnational organizations is the notion of a stateless corporation. A stateless corporation is one that does not claim a home country and thus does not allow any country to dominate its decisions. Such organizations should be more flexible to compete in global markets and better able to be
open to new product ideas throughout the world. As such, these organizations are likely to be more innovative.

Thus, while it is critical that firms be willing to enter new international markets, they must find means of coordinating the activities to gain the benefits of these markets. Larger markets have many potential benefits but to realize those benefits, firms must coordinate across those markets and share resources. One popular means of entering international markets is by using cooperative strategies.

**Using Cooperative Strategies**

Strategic alliances (a form of cooperative strategy) are becoming more common in both domestic and international markets. Alliances may be used to develop new technology and/or to enter new markets, particularly international markets, because a partner helps share the risks and the costs. Attempts to commercialize particularly complex technologies have a high probability of failure because of the significant resources and capabilities required, but the probability of success in these ventures can be increased by a strategic alliance. Partners share the costs and contribute different competences. In fact, one of the primary benefits of strategic alliances is that firms can integrate complementary competences and effect knowledge transfers to increase the probability of new venture success. Furthermore, strategic alliances may enable firms to push the limits of technology by combining their technological and creative resources and by providing more access to capital as well as greater managerial capabilities.

Texas Instruments formed strategic alliances with local partners to build manufacturing facilities in Europe and Asia. In Italy, it built a plant in cooperation with the Italian government, each paying 50 percent of the $1.2 billion cost. This alliance and others in Asia have helped save Texas Instruments more than $1 billion in manufacturing facilities. Furthermore, the firm gained strategic geographic positioning in emerging markets and partners with knowledge of those markets and of the local culture.

While strategic alliances have advantages, they also have some disadvantages. For example, firms participating in such alliances must be concerned about their partners' strategic intent in cooperating on the venture. In past years, some firms have formed joint ventures with the intent of gaining access to and knowledge of new technology that when inculcated into their own organization helps them become an effective competitor with their former partner after the venture is dissolved. In addition, a joint venture can be largely shaped by powerful partners who then guide the trajectory of the venture outside of originally established goals of the other partners. Therefore, firms must be careful in choosing partners to ensure that their goals will be met by establishing the alliance.

Another form of cooperative strategy is the R&D consortium. Such consortia generally are formed by a group of potential competitors to combine resources and knowledge to develop and transfer technology across organizational boundaries. In particular, such consortia have been developed by domestic competitors in response to significant competition from foreign firms in domestic and global markets. To date, such collaborations have been moderately successful in the U.S. and more successful in other countries such as Japan.

One of the newest forms of cooperative strategy is the interorganizational network. Both informal and more formal (contractual) networks of firms are developing to gain their competitive advantages. Networks are particularly popular among small entrepreneurial firms. Forming such networks allows smaller firms to compete against larger ones. Those networks reduce the resource and market power advantages of large firms. For example, the Kentucky Wood Manufacturers Network of small firms obtained a $2.5 million contract with Disney World that was divided among the network firms according to their capabilities. Similarly, eleven British chemical manufacturers formed a network called UK Fine Chemicals which they market as a virtual company that allows the customer to deal with a single organization (the network). Networks are becoming increasingly common among service firms as well, such as advertising agencies.

Despite the potential problems, using cooperative strategies such as strategic alliances and networks, can improve a firm's market power, strategic flexibility and its core competences in order to gain and maintain competitive advantages. Many of the actions discussed previously, and particularly the strategies, require specific organizational structures and cultures for their implementation.

**Develop New Organizational Structures and Culture**

Implementation of an international strategy as well as cooperative strategies requires a structure that facilitates coordination and collaboration across country borders. Horizontal structure facilitates implementation of these strategies and increases strategic flexibility as well. Additionally,
developing dynamic core competences and building human capital requires a culture that emphasizes organizational learning. A culture that values innovation, in addition to organizational learning, will increase the use of new technology and improve a firm's strategic flexibility. Finally, managing firms as bundles of assets provides greater strategic flexibility. Thus, we explore these types of structure and culture.

**Horizontal Structures**

Traditionally, the most common organization structure was vertical and often rigidly hierarchical with sequential operations and coordination among the various functional units. However, the new competitive landscape requirements for innovation and speed of action have lessened the value of vertical structures. Vertical structures tend to be slow in developing and implementing decisions and less facilitative of innovation. As such, organizations are beginning to develop flatter and more horizontal structures to enhance innovation and speed of strategic actions. For example, creating groups of people with different perspectives can enhance creativity. Furthermore, such groups are believed to develop and commercialize new products faster than the older sequential process used by organizations.61

John Marcotti, President of The Enterprise Group, suggests that "We're hollowing out corporations. And that is challenging us to invent a new theory of the firm to replace the internal specialization or division of labor which we've had with us since Adam Smith..." Further, Pasquale Pistorio, CEO, SJS-Thompson Microelectronics, stated that "I believe the challenge (of the next 25 years) is to convert today's cumbersome verticalized companies into decentralized but cohesive, flexible and horizontal organizations."62

In the more traditional hierarchical structures, coordination was usually achieved through establishing standards, developing plans and schedules, and encouraging mutual adjustment by the functional units. However, firms wishing to take advantage of the innovative and speed properties of a horizontal structure will use more formal integrating mechanisms. Among these are boundary spanners, task forces, teams, integrating committees/departments and sophisticated information networks. These formal horizontal integrating mechanisms have the purpose of increasing the breadth, frequency and quality of information shared across functional specialties and business units.63

For horizontal structures to be effective, certain potential barriers must be overcome or managed. Most common among these organizational barriers are the independent frames of reference of the different unit or team members (if cross-functional teams) and organizational politics. Individuals who work within a distinct specialization (e.g., functional area) often have common educational backgrounds and work experiences. They face similar types of problems and often use similar criteria to evaluate and solve those problems. Therefore, individuals within common specializations frequently develop cognitive models that closely resemble one another. These individuals have similar cognitive biases, use similar heuristics and likely have common tacit knowledge. If individuals from different functional areas are then selected to form a cross-functional team (a common mechanism used to exploit the potential advantages offered by coworkers' diversity of experiences), their cognitive models often differ which creates the potential for conflict as teams focus on critical decisions. For example, cross-functional teams developed to design and commercialize new products may find it difficult to agree on the criteria for an effective product design. Similarly, functional units' goals may differ creating organizational political problems and goal conflicts for teams composed of members from different units. Also, problems can arise from unequal resource allocations to different units within the organization, thereby creating real or perceived power differences among team members representing different units. These power differences can lead to dysfunctional processes within the team.64

To avoid many of these problems, some organizations have largely eliminated functional unit boundaries and created many autonomous work teams. In these cases, the structure is largely horizontal rather than vertical. In fact, many of the more recently popular reengineering processes have been designed to create horizontal structures. If these horizontal structures are able to integrate the different knowledge and expertise of team members from across the organization, innovation should be enhanced and with effective communication, productivity and speed of decision making should also improve.

GE Medical Systems, American Express Financial Advisors and Ford Motor Company's Customer Service Division all have implemented a process-based horizontal organization. These organizations are structured around core business processes such as customer service, account management, etc. The tasks are driven by process objectives as opposed to functional roles. Key man-
agers are referred to as process managers rather than department heads. For example, GE Medical Systems has a vice president of global sourcing. The hierarchy is flattened by eliminating unwanted tasks and combining other related tasks, thereby reducing the number of employees needed. Ford’s Customer Service teams are now staffed by three people compared to 25 in the former functional structure. The result is a more flexible and faster acting organization. Teams in GE Medical Systems’ x-ray facility now install machines at customer sites in one-third the time required with the old structural arrangement.\(^\text{53}\)

Advancing technology has facilitated the use of teams and thus horizontal organizations. With the development and implementation of internal computer supported networks, firms can now create virtual teams. These virtual teams may be composed of individuals at disparate locations, even across country boundaries, yet communicate instantaneously with team members. Recent advances in collaborative software, internet/intranet technologies and personal desktop video conferencing have facilitated the use of virtual teams.\(^\text{66}\)

Thus, horizontal structures can aid a firm’s strategic flexibility by making it more innovative and by facilitating the development and implementation of strategic actions rapidly. Speed and innovation should help the organization be more responsive to environmental changes and demands. Innovation and learning can also be facilitated by the organization’s culture.

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**Building a Learning and Innovative Organization Culture**

David de Pury, co-chairman of the board for Asea Brown Boveri, stated that “Innovate or die is the first rule of international industrial competition.” He suggests that over time, companies that rely solely on improving productivity are not likely to survive. Only those firms that develop and market new, unique goods and services gain an advantage over their competitors. Research supports de Pury’s observations by showing that firms introducing more innovative products in global industries where they compete earn greater returns than their competitors.\(^\text{67}\) Organizational learning is a critical component of competitiveness in a dynamic environment characterized by the rapid development and diffusion of new technology, the growing requirements for innovation and the need to respond to changing competitive conditions. Firms can extend their learning capacity by finding partners with complementary knowledge bases and skills or through a process of continuously updating their own competences (e.g., by developing dynamic core competences). In particular, organizational learning is important for the development and implementation of innovation.

The primary purpose of a learning organization is knowledge creation. The one sure source of lasting competitive advantage is knowledge. When markets shift, new technologies are introduced, the number of competitors continues to increase, and new products become rapidly obsolete, firms must consistently create new knowledge (innovate), diffuse it throughout the organization and find ways to capitalize on it. Jack Callahan, recently retired president and CEO of the Allstate Business Insurance Group, agrees. He stated, “You will only win in the 21st century by building knowledge, growing knowledge workers and putting knowledge workers at the center of organization.”\(^\text{66}\)

To build the capacity for continuous organizational learning, firms must construct appropriate strategic architecture. Strategic architecture is an overarching set of corporate values and priorities upon which specific strategies are built. For example, firms that have strong values for innovation and thus encourage, expect and reward innovation from all employees are the most successful innovators in their industries. Furthermore, firms must be willing to set aside existing successful products for new innovations in order to continuously maintain their competitive advantage. For example, Intel, Sony and Mitsubishi use a concept of systematic abandonment whereby when they introduce a new product, they simultaneously establish the date at which they will deliberately abandon that same product. Afterwards, they immediately begin developing the next generation of that new product with the intended commercialization date to correspond with the sunset date established for the current product.\(^\text{69}\)

Organizational learning helps firms to continuously develop and change their core competences. However, organizational learning alone does not translate into a core competence. Rather, the firm must utilize and convert the learning into firm specific resources and skills. Furthermore, organizational learning cannot be incremental and linear for firms to survive. In periods of dynamic change that produce strategic discontinuities, learning
must be nonlinear and involve a configuration of skills and competences.70

Such learning has been referred to as self-sustaining learning or metalearning. Metalearning involves the simultaneous conceptualization of different and contradictory forms of knowledge. It may create additions to or substitutes for current knowledge.71 Chevron, with $32 billion in annual revenues and operating in 100 countries, provides an example of metalearning. In 1992 Chevron created a new position called Process Master, with the responsibility to oversee the different processes across its six refineries. Process Masters take innovations developed in one refinery and work with managers at the other refineries to adapt and implement them. Sometimes they transfer with little change (linear learning) but at other times must be revised significantly or changes made in the refinery to make them work in another location (often nonlinear learning). Chevron also publishes a "Best Practices Resource Map" that is distributed to all employees. This map contains brief descriptions of the innovations and official as well as grassroots groups responsible for them (and directions for contacting them). The publication of the resource map has led to the formation of new groups, such as one focused on competitive intelligence.72

Organizations with strong competences can take advantage of positive strategic opportunities to develop market power while weaker organizations will be forced to adapt by developing effective abilities to learn and translate that learning into new competences. As a result, even those organizations with strong market power must continually develop their competences or, over time, will lose their market power as they become vulnerable to environmental changes and competitors’ new competences and strategic actions.73

Firms have to build knowledge to innovate. Innovations are necessary in many areas including new products and services and new processes to manufacture the products or provide the services. Linear learning may contribute to incremental innovations but nonlinear learning is necessary for the radical innovations often required in the new competitive landscape.74

Finally, firms may reconfigure their assets to create greater strategic flexibility. Managing firms as bundles of assets can lead to the creation of greater strategic flexibility. Managing firms as bundles of assets often reduces or eliminates the linkages between businesses.

Managing Firms as Bundles of Assets

A turbulent environment with discontinuous changes makes it difficult to predict attractive industries to enter. Yet, firms must attempt to do so and invest appropriately in the businesses operating in such industries to maintain competitive advantage.

In the context of unpredictable changes, once attractive industries may become unattractive in relatively short periods of time. New technological developments and entry of new competitors can create discontinuities in a market and make it less attractive for existing competitors. For example, CCH, once named Commerce Clearinghouse, was a highly successful firm as a major provider of critical information to law and accounting firms. However, the emergence of electronic databases largely eliminated the demand for its services, almost overnight.

As a result, firms must be prepared to exit some businesses and enter others rapidly. The significant restructuring in the late 1980s and early to middle 1990s was partially designed to help build more flexibility in large overdiversified firms. Firms must accumulate and build competences that enable them to develop new strategic assets more quickly and efficiently than their competitors. Only then can firms develop and sustain competitive advantages.75 In this context, firms are less concerned about managing a portfolio of assets where stability of such factors as risk are assumed. Rather, the intent is to manage a bundle of assets that can be aggregated, disaggregated or reconfigured quickly to respond to competitive conditions.

Attempts to build flexibility in the management of a firm’s assets may be exemplified in the wave of mergers that began in the middle 1990s. Some have referred to the latest rush of mergers and acquisitions as the fifth merger wave of this century.76

Managing firms as bundles of assets is difficult to do effectively. Managing firms as portfolios of assets is a practice that began in the late 1970s and early 1980s and was promoted by some leading scholars and consulting firms (e.g., the Boston Consulting Group). While it was attractive and popular among many executives, it relies on now obsolete assumptions. Subsequent experience with this approach has shown that many firms managing assets as a portfolio also were short-term oriented and thereby not investing for the long term. These firms often overly emphasized financial controls and produced less innovation in their markets over time than their competitors.77

To manage firms as bundles of assets requires a different form of structure than has been used by most firms in the past. In general, firms must be managed as loosely coupled bundles of assets.78
For example, some firms have attempted to allow significant local autonomy to their widely geographically dispersed units but maintain some centralized control, oftentimes attempting to use organizational culture as the primary linkage. One prime example of such a structure can be found in Asea Brown Boveri (ABB). Percy Barnevik, former CEO of ABB, suggests that ABB is a company of many cultures (meaning multicultural management teams), but one with a common corporate culture. He noted that the glue that holds the organization together involves the overall information reporting system (reporting real-time performance to the top executives from each of the businesses and profit centers). There's another soft kind of glue described in ABB's policy bible; it includes the firm's mission, values and expectations, along with guidelines for overall behavior. In other words, it is used as a guide to the corporate culture.79

In order to increase economy and effectively implement a loose coupling between major business units, firms are increasingly using a subsidiary structure. In such cases, the autonomous units are easier to sell or spin-off (i.e., there are lower costs associated with these changes). Oftentimes the potential spin-offs are poor performers and the parent firm is creating looser linkages to reduce its risk. However, by decentralizing the decision making, the heads of those units may also become more long-term oriented and improve performance over time. George Hatsopoulos, CEO of Thermo-Electron Corporation, has a goal of spinning off new ventures. He refers to them as spin-outs (to differentiate them from poor performers) and gives the managers of these ventures an equity position to provide incentives for long-term investments. Over a period of 1984–1995, Thermo-Electron completed 12 spinouts, many of which have been quite successful. The corporation maintains a majority equity position in each business and provides the infrastructure, such as financial and legal services, employee benefits administration, risk management and investor relations, that produces loosely coupled linkages.80

An example of managing a firm as a bundle of assets is the recent major change by AT&T, dividing itself into three new independent businesses. Some have referred to AT&T's actions as a trivestiture. This is an extreme form of managing as a bundle of assets because the three new businesses have no linkages among them (except for common shareholders). In so doing, executives in each of the independent businesses can focus on that firm's markets and operations without concern for the need to coordinate with the other two businesses. The intent is that each of the independent businesses will operate in a competitively unimpeded and cost efficient manner. The stock market reacted positively to AT&T's announcement. Of course, there are critics of this move, specifically suggesting that the split up is because of past mistakes. Regardless of the prior reasoning, the increasing subsidiaries, spin-offs (spinouts) and breakups (e.g., AT&T) suggest a wave of the future, managing firms as bundles of assets.81

Thus, executives desiring to manage firms as bundles of assets in order to build strategic flexibility must also manage the paradox. They must be prepared to move swiftly to eliminate underperforming assets in deteriorating markets and/or acquire assets in rapidly developing attractive industries, while at the same time making long-term investments in their core businesses and core competences. This requires strategic leadership as well as an organizational culture that emphasizes learning and innovation.

A Changing World

The world is changing; nation-states and political systems are dissolving (e.g., old Soviet Union, Eastern Europe) and, in some cases, creating strife and chaos (e.g., Bosnia). The development of new technology and opening of global markets are changing the nature of competition and consumer demands are stronger. The recent pervasive restructuring that characterized most industries suggests that managers are attempting to respond to the challenges presented by the evolving new competitive landscape. Undoubtedly, firms that are overdiversified should downscope and firms that are over- or undersized should rightsize.82 However, that is only the first step toward being strategically competitive over the long term, particularly in the new competitive landscape.

In a competitive environment in which difficult-to-predict strategic discontinuities occur frequently, the top management of firms must search for ways of achieving temporary equilibrium (balance forces of stability and instability). However, they must also be prepared to disrupt equilibrium (destabilize units) within the firm, if necessary, to prepare for future contingencies. A number of managers (public and private) may experience difficulty in creating the needed changes. First, they may find it difficult personally to give up power as is usually required to create a horizontal organization. This type of change often requires that managers delegate responsibility and authority for gathering, translating, and disseminating information and for making critical decisions across
multiple levels and units in the organization. Second, even if they can accept the loss of power, they often must overcome significant resistance to change and organizational politics (whereby people try to buffer their fiefdoms from change to maintain their power bases).

We have discussed a number of actions that top executives must take in order to navigate their firms successfully in the new competitive landscape. Most important among those is developing strategic flexibility. To build strategic flexibility and competitive advantage requires exercising strategic leadership, developing dynamic core competences, focusing and building human capital, effectively using new technologies, employing valuable strategies, and implementing new organization structures and culture. In general, strategic leaders must be prepared to radically transform their organizations. Additionally, several of the strategic actions recommended will contribute further to the technological revolution, globalization and general environmental turbulence. For example, development and use of new technology feeds the technological revolution. Exploiting global markets further enhances globalization. Development of and introduction of innovations, particularly when done with speed and regularity, further contribute to environmental dynamism.

While the strategic action mechanisms described are important, they can only create competitive advantage if implemented effectively. Below we provide some action steps for managers to build strategic flexibility and competitive advantage:

1. Exercise strategic leadership
   - Develop and communicate a long-term vision
   - Encourage and gain commitment to continuous change
   - Build nonlinear thinking among the management teams and, indeed, all employees

2. Build dynamic core competences
   - Create and support a corporate culture that emphasizes continuous learning
   - Provide effective skill development programs with regular updating to include the latest technology
   - Produce incentives for continuous skill development and for acceptance of change

3. Focus and develop human capital
   - Make limited use of contingency workers and outsourcing
     - Identify the least valuable units (those that cannot provide a competitive advantage)
     - Consider outsourcing these units but only to excellent, reliable and ethical suppliers
   - Consider using contingency employees in peripheral jobs but minimize their numbers and impact on core functions
   - Develop human capital
     - Recruit the best employee talent
     - Invest substantial resources in developing new employee skills and capabilities
     - Reward employee skill development

4. Make effective use of new technology
   - Through continuous environmental scanning regularly identify the newest and most effective technology relevant to your business (e.g., information technology, manufacturing technology)
   - Make a commitment to have the newest and best technology and updating of skills to use it
   - Allocate necessary resources to acquire and implement up-to-date and best technology available

5. Engage in valuable strategies
   - Exploit global markets
     - Identify international markets where your firm can participate and add value
     - Enter those markets using the most effective entry method (e.g., strategic alliance with partner from country where market is located)
   - Build a transnational management team (e.g., culturally sensitive and knowledgeable top management teams) and with a loosely coupled cooperative structure (e.g., corporate culture emphasizing cooperation, compensation/incentives for cooperation)
   - Engage in cooperative strategies
     - Where risks are high and/or adequate internal resources are unavailable, search for partner to develop a cooperative venture
     - Select partners with complementary resources and appropriate strategic intents
     - Find ways for your firm and the partner to reach both’s goals (make it a win-win partnership)

6. Develop new organizational structures and culture
   - Implement a horizontal organization
     - Where possible develop teams (particularly cross-functional ones)
     - Provide managerial attention and support (e.g., incentives, financial resources, training, moral support) to the teams (and individual members thereof)
     - Integrate the horizontal with the altered vertical structure (plan it; do not allow it to “evolve”)
   - Develop a learning and innovative organizational culture
- Inculcate the building of knowledge into the values of the organization
- Develop a program to create nonlinear learning (e.g., review of major decisions and actions by group of knowledgeable managers)
- Build a structure that diffuses knowledge throughout the organization (e.g., jobs with the responsibility to spread best practices from one unit to others)

• Manage firm as a bundle of assets
- Continuously evaluate the various businesses and units for their criticality and risk
- Spin-off (spin-out) the riskiest businesses/units, while maintaining an equity interest
- Focus on and give primary managerial attention to the most valuable core businesses/units

To transform an organization and achieve even moderate levels of success, core skills that are critical to build appropriate core competences must be identified and developed. It will require managerial and organizational introspection and openness to change. To do all of this, requires that top management (strategic leaders) engage in nonlinear thinking and adopt a systemic perspective of the firm. Because most business education programs (e.g., MBA) and business experience have emphasized a linear and sometimes shorter-term perspective (much less a nonsystemic perspective), a new kind of strategic leader is needed. The significant amount of restructuring experienced in recent years signifies firms’ initial attempts to deal with the new competitive landscape. However, much more is required to effectively navigate in this competitive landscape. The successful top executives of the 21st century will be considerably different from those of the 20th century.

Endnotes


16 "Beyond the Millennium... . ." (1995).


21 R. E. Hoskisson and M. A. Hitt, Downscoping: How to Tame the Diversified Firm (New York: Oxford University Press, 1994); J. Kerr and E. Jackfofsky, "Aligning Managers With Strategies:


28 Although some studies have questioned the value of Fortune's reputational rankings (e.g., Fryxell & Wang, 1994), in a recent Keynote Address at the Texas Conference, Barry Stow reported that his research showed these rankings to be related to firm outcomes.


43 "The Next 25..." p. 43.


55 "The Next 25..." p. 54.


