by distinct forms as such. Hence they will not be discussed further as such. But because all these configurations themselves must not be taken as hard and fast, a reading in the final chapter, called "Beyond Configuration: Forces and Forms in Effective Organizations," has been included to broaden this view of organizations.

READING 8.2

STRATEGY AND ORGANIZATION PLANNING

BY JAY R. GALBRAITH

■ . . . There has been a great deal of progress in the knowledge base supporting organization planning in the last twenty-five years. Modern research on corporate structures probably started with Chandler's *Strategy and Structure.* Subsequent research has been aimed at expanding the number of attributes of an organization beyond that of just structure. I have used the model shown in Figure 1 to indicate that organization consists of structure, processes that cut the structural lines like budgeting, planning, teams, and so on, reward systems like promotions and compensation, and finally people practices like selection and development (Galbraith, 1977). The trend . . . is to expand to more attributes like the 7-Ss (Waterman, 1980) comprising structure, strategy, systems, skills, style, staff, and superordinate goals and to "softer" attributes like culture.

All of these models are intended to convey the same ideas. First, organization is more than just structure. And, second, all of the elements must "fit" to be in "harmony" with each other. The effective organization is one that has blended its structure, management practices, rewards, and people into a package that in turn fits with its strategy. However, strategies change and therefore the organization must change.

The research of the past few years is creating some evidence by which organizations and strategies are matched. Some of the strategies are proving more successful than others. One

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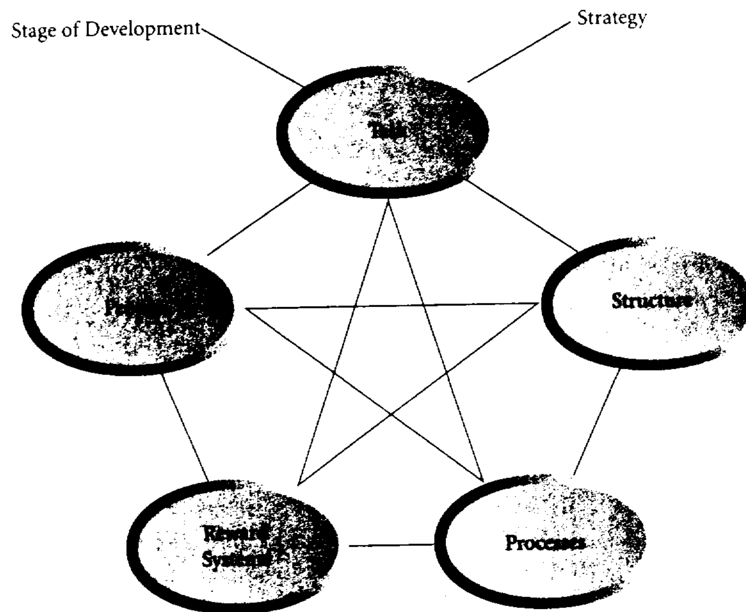
FIGURE 1
MODEL OF ORGANIZATION STRUCTURE



of the explanations is organizational in nature. Also the evidence shows that for any strategy, the high performers are those who have achieved a fit between their strategy and their organization.

These findings give organization planning a base from which to work. The organization planner should become a member of the strategic team in order to guide management to choose the appropriate strategies for which the organization is developed or to choose the appropriate organization for the new strategy.

In the sections that follow, the strategic changes that are made by organizations are described. Then the strategy and organization evidence is presented. Finally the data on economic performance and fit is discussed.

STRATEGY AND ORGANIZATION

There has been a good deal of recent attention given to the match between strategy and organization. Much of this work consists of empirical tests of Chandler's ideas presented in *Strategy and Structure* (1962). Most of this material is reviewed elsewhere (Galbraith and Nathanson, 1978). However, some recent work and ideas hold out considerable potential for understanding how different patterns of strategic change lead to different organization structures, management systems, and company cultures. In addition, some good relationships with economic performance are also attained.

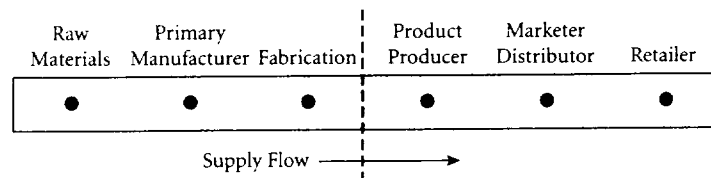
The ideas rest on the concept of an organization having a center of gravity or driving force (Tregoe and Zimmerman, 1980). This center of gravity arises from the firm's initial success in the industry in which it grew up. Let us first explore the concept of center of gravity, then the patterns of strategic change that have been followed by American enterprises.

The center of gravity of a company depends on where in the industry supply chain the company started. In order to explain the concept, manufacturing industries will be used. Figure 2 depicts the stages of supply in an industry chain. Six stages are shown here. Each industry may have more or fewer stages. Service industries typically have fewer stages.

The chain begins with a raw material extraction stage which supplies crude oil, iron ore, logs, or bauxite to the second stage of primary manufacturing. The second stage is a variety-reducing stage to produce a standardized output (petrochemicals, steel, paper pulp, or aluminum ingots). The next stage fabricates commodity products from this primary material. Fabricators produce polyethylene, cans, sheet steel, cardboard cartons, and semiconductor components. The next stage is the product producers who add value, usually through product development, patents, and proprietary products. The next stage is the marketer and distributors. These are the consumer branded product manufacturers and various distributors. Finally, there are the retailers who have the direct contact with the ultimate consumer.

The line splitting the chain into two segments divides the industry into upstream and downstream halves. While there are differences between each of the stages, the differences between the upstream and downstream stages are striking. The upstream stages add value by reducing the variety of raw materials found on the earth's surface to a few standard commodities. The purpose is to produce flexible, predictable raw materials and intermediate products from which an increasing variety of downstream products are made. The downstream stages add value through producing a variety of products to meet varying customer needs. The downstream value is added through advertising, product positioning, marketing channels,

FIGURE 2
SUPPLY STAGES IN AN INDUSTRY CHAIN



and R&D. Thus, the upstream and downstream companies face very different business prol lems and tasks.

The reason for distinguishing between upstream and downstream companies is that t factors for success, the lessons learned by managers, and the organizations used are fund mentally different. The successful, experienced manager has been shaped and formed in fu damentally different ways in the different stages. The management processes are different, are the dominant functions. In short, the company's culture is shaped by where it began in t industry chain. Listed are some fundamental differences that illustrate the contrast:

UPSTREAM	DOWNSTREAM
Standardize/homogenize	Customize/segment
Low-cost producer	High margins/proprietary positions
Process innovation	Product innovation
Capital budget	R&D/advertising budget
Technology/capital intensive	People intensive
Supply/trader/engineering	R&D/marketing dominated
Line driven	Line/staff
Maximize end users	Target end users
.	.
.	.
.	.
Sales push	Market pull

The mind-set of the upstream manager is geared toward standardization and efficiency. They are the producers of standardized commodity products. In contrast, downstream managers try to customize and tailor output to diverse customer needs. They segment markets and target individual users. The upstream company wants to standardize in order to maximize the number of end users and get volume to lower costs. The downstream company wants to target particular sets of end users. Therefore, the upstreamers have a divergent view of the world based on their commodity. For example, the cover of the 1981 annual report of Intel (a fabricator of commodity semiconductors) is a listing of the 10,000 uses to which microprocessors have been put. The downstreamers have a convergent view of the world based on customer needs and will select whatever commodity will best serve that need. In the electronics industry there is always a conflict between the upstream component types and the downstream systems types because of this contrast in mind sets.

The basis of competition is different in the two stages. Commodities compete on price since the products are the same. Therefore, it is essential that the successful upstreamer be the low-cost producer. Their organizations are the lean and mean ones with a minimum of overheads. Low cost is also important for the downstreamer, but it is proprietary features that generate high margins. That feature may be a brand image, such as Maxwell House, a patented technology, an endorsement (such as the American Dental Association's endorsement of Crest toothpaste), customer service policy, and so on. Competition revolves around product features and product positioning and less on price. This means that marketing and product management sets prices. Products move by marketing pull. In contrast, the upstream company pushes the product through a strong sales force. Often salespeople negotiate prices within limits set by top management.

The organizations are different as well. The upstream companies are functional and line driven. They seek a minimum of staff, and even those staffs that are used are in supporting roles. The downstream company with multiple products and multiple markets learns to manage diversity early. Profit centers emerge and resources need to be allocated across products and markets. Larger staffs arise to assist top management in priority setting across competing product/market advocates. Higher margins permit the overhead to exist.

STRATEC

Both upstream and downstream companies use research and development. However, the upstream company invests in process development in order to lower costs. The downstream company invests primarily in product development in order to achieve proprietary positions.

The key managerial processes also vary. The upstream companies are driven by the capital budget and have various capital appropriations controls. The downstream companies also have a capital budget but are driven by the R&D budget (product producers) or the advertising budget (marketers). Further downstream it is working capital that becomes paramount. Managers learn to control the business by managing the turnover of inventory and accounts receivable. Thus, the upstream company is capital intensive and technological "know-how" is critical. Downstream companies are more people intensive. Therefore, the critical skills revolve around human resources management.

The dominant functions also vary with stages. The raw material processor is dominated by geologists, petroleum engineers, and traders. The supply and distribution function which searches for the most economical end use is powerful. The manufacturers of commodities are dominated by engineers who come up through manufacturing. The downstream companies are dominated first by technologists in research and product development. Farther downstream, it is marketing and then merchandising that emerge as the power centers. The line of succession to the CEO usually runs through this dominant function.

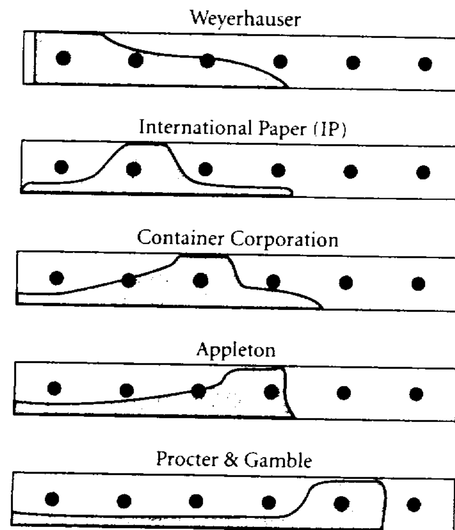
In summary, the upstream and downstream companies are very different entities. The differences, a bit exaggerated here because of the dichotomy, lead to differences in organization structure, management processes, dominant functions, succession paths, management beliefs and values or, in short, the management way of life. Thus, companies can be in the same industry but be very different because they developed from a beginning at a particular stage of the industry. This beginning, and the initial successes, teaches management the lessons of that stage. The firm develops an integrated organization (structure, processes, rewards, and people) which is peculiar to that stage and forms the center of gravity.

STRATEGIC CHANGE

The first strategic change that an organization makes is to vertically integrate within its industry. At a certain size, the organization can move backward to prior stages to guarantee sources of supply and secure bargaining leverage on vendors. And/or it can move forward to guarantee markets and volume for capital investments and become a customer to feed back data for new products. This initial strategic move does not change the center of gravity because the prior and subsequent stages are usually operated for the benefit of the center-of-gravity stage.

The paper industry is used to illustrate the concepts of center of gravity and vertical integration. Figure 3 depicts five paper companies which operate from different centers of gravity. The first is Weyerhauser. Its center of gravity is at the land and timber stage of the industry. Weyerhauser seeks the highest return use for a log. They make pulp and paper rolls. They make containers and milk cartons. But they are a timber company. If the returns are better in lumber, the pulp mills get fed with sawdust and chips. International Paper (the name of the company tells it all), by contrast, is a primary manufacturer of paper. It also has timber lands, container plants, and works on new products around aseptic packaging. However, if the pulp mills ran out of logs, the manager of the woodlands used to be fired. The raw material stage is to supply the manufacturing stage, not seek the highest return for its timber. The Container Corporation (again, the name describes the company) is the example of the fabricator. It also has woodlands and pulp mills, but they are to supply the container making operations. The product producer is Appleton. It makes specialty paper products. For example, Appleton produces a paper with globules of ink inbedded in it. The globules burst and form a letter or number when struck with an impact printer.

FIGURE 3
EXAMPLES OF FIVE PAPER COMPANIES OPERATING AT DIFFERENT CENTERS OF GRAVITY



The last company is Procter & Gamble. P&G is a consumer products company. And, like th other companies, it operates pulp mills and owns timber lands. However, it is driven by th advertising or marketing function. If one wanted to be CEO of P&G, one would not run a pul mill or the woodlands. The path to CEO is through the brand manager for Charmin or Pamper

Thus, each of these companies is in the paper industry. Each operates at a number o stages in the industry. Yet each is a very different company because it has its center of gravity a a different stage. The center of gravity establishes a base from which subsequent strateg changes take place. That is, as a company's industry matures, the company feels a need t change its center of gravity in order to move to a place in the industry where better returns ca be obtained, or move to a new industry but use its same center of gravity and skills in th industry, or make some combination of industry and center of gravity change. These optio lead to different patterns of corporate developments.

BY-PRODUCTS DIVERSIFICATION

One of the first diversification moves that a vertically integrated company makes is to sell by products from points along the industry chain. Figure 4 depicts this strategy. These compani appear to be diversified if one attributes revenue to the various industries in which the compan operates. But the company has changed neither its industry nor its center of gravity. The compan is behaving intelligently by seeking additional sources of revenue and profit. However, it is still ps chologically committed to its center of gravity and to its industry. Alcoa is such a firm. Even thoug they operate in several industries, their output varies directly with the aluminum cycle. They ha not reduced their dependence on a single industry, as one would with real diversification.

RELATED DIVERSIFICATION

Another strategic change is the diversification into new industries but at the same center o gravity. This is called "related diversification." The firm diversifies into new businesses, bu they are all related. The relationship revolves around the company's center of gravity. Figure

FIGURE 4
BY-PRODUCT DIVERSIFICATION

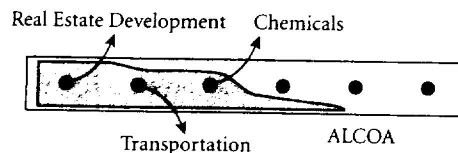
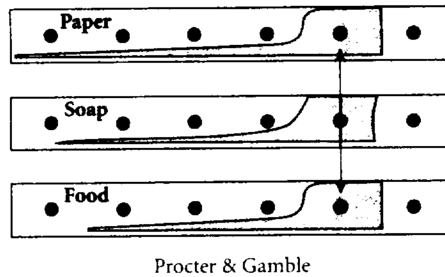


FIGURE 5
RELATED
DIVERSIFI

FIGURE 6
LINKED
DIVERSIFICA

FIGURE 5
RELATED
DIVERSIFICATION



Procter & Gamble

depicts the diversification moves of Proctor & Gamble. After beginning in the soap industry, P&G vertically integrated back into doing its own chemical processing (fatty acids) and seed crushing. Then, in order to pursue new growth opportunities, it has been diversifying into paper, food, beverages, pharmaceuticals, coffee, and so on. But each move into a new industry is made at the company's center of gravity. The new businesses are all consumer products which are driven out of advertising by brand managers. The 3M Company also follows a related diversification strategy, but theirs is based on technology. They have 40,000 different products which are produced by some seventy divisions. However, 95% of the products are based on coating and bonding technologies. Its center of gravity is a product producer, and it adds value through R&D.

LINKED DIVERSIFICATION

A third type of diversification involves moving into new industries and operating at different centers of gravity in those new industries. However, there is a linkage of some type among various businesses. Figure 6 depicts Union Camp as following this pattern of corporate development. Union Camp is a primary producer of paper products. As such, it vertically integrated backwards to own woodlands. From there, it moved downstream within the wood products industry by running sawmills and fabricating plants. However, they recently purchased a retail lumber business.

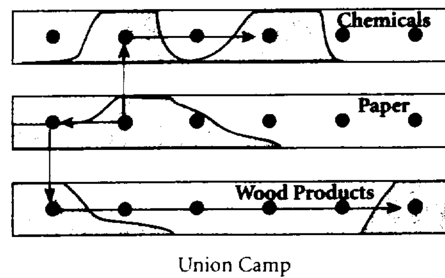
They also moved into the chemical business by selling by-products from the pulping process. This business was successful and expanded. Recently, Union Camp was bidding for a flavors and fragrances (F&F) company. The F&F company is a product producer which adds value through creating flavors and fragrances for mostly consumer products companies.

Thus, Union Camp is an upstream company that is acquiring downstream companies. However, these new companies are in industries in which the company already diversified from its upstream center of gravity. But these new acquisitions are not operated for the benefit of the center of gravity but are stand-alone profit centers.

UNRELATED DIVERSIFICATION

The final type of strategic change is to diversify into unrelated businesses. Like the linked diversifiers, unrelated diversifiers move into new industries often at a different centers of gravity. They almost always use acquisition, while related and linked companies will use some acquisitions but

FIGURE 6
LINKED
DIVERSIFICATION



Union Camp

rely heavily on internal development. There is often very little relation between the industri
into which the unrelated company diversifies. Textron and Teledyne have been the paradig
examples. They operate in industrial equipment, aerospace, consumer products, insurance, an
so on. Others have spread into retailing, services, and entertainment. The purpose is to insul
the company's earnings from the uncertainties of any one industry, or from the business cycle

CENTER OF GRAVITY CHANGE

Another possibility is for an organization to stay in the same industry but change its center
gravity in that industry. Recent articles describe the attempts of chemical companies to mo
downstream into higher margin, proprietary products. They want to move away from th
overcapacity/undercapacity cycles of commodity businesses with their low margins and hig
capital intensity. In aerospace, some of the system integration houses are moving backwa
into making electronic components. For example, there are going to be fewer airplanes an
more effort on the avionics, radars, weapons, and so on that go into airplanes. In either case,
means a shift in the center of gravity of the company.

In summary, several patterns of strategic change can occur in a company. These invol
changes to the company's industry of origination, changes to the center of gravity of the com
pany, or some combination of the two. For some of the strategic changes there are appropria
organizations and measures of their economic performance.

STRATEGY, ORGANIZATION, AND PERFORMANCE

For a number of years now, studies have been made of strategy and structure of the *Fortu*
500. Most of these were conducted by the Harvard Business School. These studies we
reviewed in previous work (Galbraith and Nathanson, 1978). The current view is illustrated
Table 1. If one samples the *Fortune* 500 and categorizes them by strategy and structure, the fo
lowing relationships hold.

One can still find organizations staying in their same original business. Such a single bu
ness is Wrigley Chewing Gum. These organizations are run by centralized functional organ
zations.The next strategic type is the vertically integrated by-product seller. Again, these com
panies have some diversification but remain committed to their industry and center of gravi
The companies are also functional, but the sequential stages are often operated as profit an
loss divisions. The companies are usually quite centralized and run by collegial manageme
groups. The profit centers are not true ones in being independent to run their own business
These are almost all upstream companies.

The related businesses are those that move into new industries at their center of gravi
Usually these are downstream companies. They adopt the decentralized profit center divi
sions. However, the divisions are not completely decentralized. There are usually strong co
porate staffs and some centralized marketing, manufacturing, and R&D. There may be seve
thousand people on the corporate payroll.

TABLE 1

STRATEGY	STRUCTURE
Single business	Functional
Vertical by-products	Functional with P&Ls
Related businesses	Divisional
Linked businesses	Mixed structures
Unrelated businesses	Holding company

The clearest contrast to the related diversifier is the unrelated business company. These companies enter a variety of businesses at several centers of gravity. The organization they adopt is the very decentralized holding company. Their outstanding feature is the small corporate staff. Depending on their size, the numbers range between fifty and two hundred. Usually these are support staffs. All of the marketing, manufacturing, and R&D is decentralized to the divisions. Group executives have no staffs and are generally corporate oriented.

The linked companies are neither of these extremes. Often linked forms are transitory. The organizations that they utilize are usually mixed forms that are not easily classified. Some divisions are autonomous, while others are managed out of the corporate HQ. Still others have strong group executives with group staffs. Some work has been done on classifying these structures (Allen, 1978).

There has been virtually no work done on center of gravity changes and their changes in structure. Likewise, there has been nothing done on comparisons for economic performance. But for the other categories and structures, there is emerging some good data on relative economic performance.

The studies of economic performance have compared the various strategic patterns and the concept of fit between strategy and organization. Both sets of results have organization design implications. The economic studies use return on equity as the performance measure. If one compares the strategic categories listed in Table 1, there are distinct performance differences. The high performers are consistently the related diversifiers (Rumelt, 1974; Galbraith and Nathanson, 1978; Nathanson and Cassano, 1982; Bettis, 1981; Rumelt, 1982). There are several explanations for this performance difference. One explanation is that the related diversifiers are all downstream companies in businesses with high R&D and advertising expenditures. These businesses have higher margins and returns than other businesses. Thus, it may not be the strategy but the businesses the relateds happen to be in. However, if the unrelateds are good acquirers, why do they not enter the high-return businesses?

The other explanation is that the relateds learn a set of core skills and design an organization to perform at a particular center of gravity. Then, when they diversify, they take on the task of learning a new business, but at the same center of gravity. Therefore, they get a diversified portfolio of businesses but each with a system of management and an organization that is understood by everyone. The management understands the business and is not spread thin.

The unrelateds, however, have to learn new industries and also how to operate to a different center of gravity. This latter change is the most difficult to accomplish. One upstream company diversified via acquisition into downstream companies. It consistently encountered control troubles. It instituted a capital appropriation process for each investment of $50,000 or more. It still had problems, however. The retail division opened a couple of stores with leases for $40,000. It didn't use the capital process. The company got blindsided because the stores required $40 million in working capital for inventory and receivables. Thus, the management systems did not fit the new downstream business. It appears that organizational fit makes a difference. . . .

One additional piece of evidence results from the studies of economic performance. This result is that the poorest performer of the strategic categories is the vertically integrated by-product seller. Recall these companies are all upstream, raw material, and primary manufacturers. They make up a good portion of "Smokestack America." In some respects, these companies made their money early in the century, and their value added is shifting to lesser developed countries in the natural course of industrial development. However, what is significant here is their inability to change. It is no secret to anyone that they have been underperformers, yet they have continued to put money back into the same business.

My explanation revolves around the center of gravity. These previously successful companies put together an organization that fit their industry and stage. When the industry declined, they were unable to change as well as the downstream companies. The reason is that upstream companies were functional organizations with few general managers. Their resource allocation was within a single business, not across multiple products. The management skill is partly

technological know-how. This technology does not transfer across industries at the prim manufacturing center of gravity. The knowledge of paper making does not help very much glass making. Yet both might be combined in a package company. Also, the capital intensity these industries limits the diversification. Usually one industry must be chosen and capi invested to be the low-cost producer. So there are a number of reasons why these compan have been notoriously poor diversifiers.

In addition, it appears to be very difficult to change centers of gravity no matter wh an organization is along the industry chain. The reason is that a center of gravity sh requires a dismantling of the current power structure, rejection of parts of the old cultu and establishing all new management systems. The related diversification works for exac the opposite reasons. They can move into new businesses with minimal change to the pow structure and accepted ways of doing things. Changes in the center of gravity usually occ by new start-ups at a new center of gravity rather than a shift in the center of establish firms. . . .

There are some exceptions that prove the rule. Some organizations have shifted fro upstream commodity producers to downstream product producers and consumer produ firms. General Mills moved from a flour miller to a related diversified provider of products f the homemaker. Over a long period of time they shifted downstream into consumer food pro ucts from their cake mix product beginnings. From there, they diversified into related areas af selling off the milling operations, the old core of the company. . . . [In these cases], howev new management was brought in and acquisition and divestment used to make the transitio So, even though vestiges of the old name remain, these are substantially different companies.

The vast majority of our research has examined one kind of strategic change—diversificatio The far more difficult one, the change in center of gravity, has received far less [attention]. F the most part, the concept is difficult to measure and not publicly reported like the number industries in which a company operates. Case studies will have to be used. But there is a ne for more systematic knowledge around this kind of strategic change.

THE DESIGN OF NEW ORGANIZATIONAL

BY JENNIFER HERBER, JITENDRA V. SINGH, AND MICHAEL USEEM

■ . . . One of the more hallowed management truisms is that organizations should adapt changing environmental conditions. But successful organizations frequently have trou responding to discontinuous, competence-destroying change such as the advent of t Internet. Dominant players often fail to adapt because it means dismantling the very orga zations that have led to their success. They had mastered current technologies and custom needs, but by virtue of having established that expertise and focus they had also become prepared to face innovative technologies and new customers. Past adaptations become inert constraints, leading to a kind of "competency trap." The organizational architectures th companies have built to propel their success can become as outmoded as feudal kingdoms an age of democracy.

Yet we have entered an era of intense experimentation with new organizational forms, innovative technologies have created radically different opportunities for doing business. A result, company architectures are changing, reporting relations are flattening, work designs

*Excerpted from Jennifer Herber, Jitendra V. Singh, and Michael Useem, "The Design of New Organizatio Forms" in *Wharton on Managing Emerging Technologies*, 2000, pp. 376–392.

VIRTUAL ORGANIZ