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Strategic Renewal

How Large Complex Organizations Prepare for the Future

In the last decade, many large organizations have felt strong pressures for change. The source of these pressures has been new technology, which has resulted in increasing globalization of markets, deregulation of industries, and a shift of firms from the public to the private sector; they also come from the rise of new organizational forms such as the strategic network. In trying to respond, firms have adopted a wide variety of approaches including downsizing, outsourcing, reengineering, corporate venturing, restructuring, and rejuvenation. How can we explain the many different kinds of responses from firms?

Can we even suggest logical choices to managers? Notwithstanding the managerial relevance of these provocative questions, most of the research efforts in strategic management are rooted in stability, not

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change. There has been relatively little focus on specifically how multiunit firms first develop firm-specific competencies and how they renew them to shifts in the industry. To answer these questions, we need to return to first principles.

The theory of the firm addresses why firms exist, and recent insights suggest that the answer lies in mechanisms that exploit unique competencies and knowledge (Barney, 1991; Nelson and Winter, 1982; Nonaka, 1991). As explained by Conner and Prahalad (1996), this view contrasts with other views such as those of minimizing transaction costs, or resolving principle-agent difficulties (Alchian and Demsetz, 1972; Williamson, 1975). The same literature, however, does not address how firms change and adjust to environmental shocks such as new technology. This has traditionally been the preserve of organizational theorists, and there is a long tradition here stretching back to Barnard (1938), Chandler (1962), Pettigrew (1985), and Van de Ven (1986). From the perspective of the theory of the firm, all these writers seem less concerned about the content of the change, and so there are obvious gaps between the two approaches.

We seek to bridge some of these differences. We start from the position of why firms exist and how they can change and examine the inherent tensions in the change process, particularly the tension between change and stability. We then connect these ideas to those of core competencies, outlining the choices that firms have in terms of revitalizing or reordering competencies, and the difficulties and risks they face in doing this. We trace the alternative mechanisms discussed in the literature and bring out tentative propositions about their relative efficacy and risk profiles. Finally, we speculate on the possible appropriateness of some of our mechanisms to differing circumstances, in terms of a simple contingency approach.

Preparing for the process of renewal: Dealing with paradoxes

The problem of change in organizations is a relative one; we do not wish to suggest that organizations are ever in a state of complete stasis. As many have pointed out (e.g., Bate, 1994), organizations are always changing, but the natural pace of change may be too slow, particularly in a hypercompetitive environment or one facing technological shifts (D'Aveni, 1994). Competition threatens survival. But adjustment to competition is also risky; change may fail or firms may overreact, bringing even more severe consequences.

Put another way, organizations that wish to adjust need to reconcile the paradox of conflicting forces for change and stability. The pressure for stability is not just inertia, but there are also short-term forces that require organizations to maximize their existing competencies and capabilities. The pressure to change comes not just from the threats to survival but also from the desire to grow and be more successful. These conflicting pressures have long been recognized (e.g., Burns and Stalker, 1961), and many scholars have explicitly discussed the dilemma (Hampden-Turner, 1990; Handy, 1989; Kanter, 1988; Poole and Van de Ven, 1989).

Rejecting the Paradox: Inertia

In seeking to overcome the tension, the organization faces three generic choices: (1) it can avoid the paradox, rejecting attempts to change; (2) it can accept the paradox and outsource the change problem to others, or (3) it can try to resolve the paradox by internal adaptation. Although the central thrust of this paper is the exploration of resolution, it is necessary for the sake of completeness to explore the strategies of avoidance and acceptance because they represent viable alternatives and benchmarks to the difficult processes of internal change.

To some researchers, especially those from the population ecology school, it is futile for large organizations to attempt to change. Aldrich (1979) and Hannan and Freeman (1984, p. 152) see inertia as endemic inside large complex organization, and, especially in the context of new technology, difficult to overcome. In the language of economics, the market selects out those firms that have the "wrong" competencies (Barnett, Greve, and Park, 1994; Barney and Zajac, 1994). The mechanism for renewal is the creation of new organizations that rise to displace the old. While it is clear that this may be one type of renewal process, it is not the only one. There is mounting evidence that some large complex organizations have managed change, and that this has been done in a wide variety of ways through many different mechanisms.

Accepting the Paradox: Outsourcing

According to the alliance, or network, view of organizations, the paradox of balancing capability exploitation and change can be *accepted* by the process of interaction with other organizations. According to network theorists, the market is not abstract but concrete and exists

everywhere (Hakansson, 1982; Matsson, 1987; Von Hippel, 1978). Because they believe there is no clear distinction between competition outside the organization and cooperation inside, the process of competition as conceived by population ecologists or economists is too simplistic. Firms can and do use partners to overcome the tension.

The process of partnering has been seen as one that allows existing firms to capture new technology or new ideas in any one of its many forms (Contractor and Lorange, 1988). Sometimes these relationships can be *ad hoc*, while at other times they can be orchestrated and purposeful; Miles and Snow (1986) have classified several of the differing possibilities for arranging networks. Although writers such as Bleeke and Ernst (1991) and Hamel (1991) warn about the effectiveness of alliances in the process of transformation, the inherent attraction of spinning out from the vertically integrated firm is widely accepted. Many large, complex vertically integrated firms commonly renew parts of their organizations by spinning out and spinning in. At the simplest level, there is a dynamic parent that, upon finding that one of its units is in crisis or maturity, spins it off. Under a new owner, or more often as a separate unit, it is freed from the direct controls of the old multiunit organization. Separated from many of the forces of inertia, the innovation process can take hold. During the period of change, the spun-out division often maintains links with its old parent, perhaps through trading. If the unit succeeds, it may be repurchased into the original firm or bought by another complex organization. If it does not renew, it will fail, but at no serious loss to the original organization.

That networks do provide an effective mechanism for renewal has been established through many different strands of research. Marshall (1920), documented industrial districts and noted that renewal was possible. Ouchi (1981) echoed the theme in his discussions of clans. More recently, Thorelli (1986) and Porter (1990) noted the capacity of networks to effect change, and Lorenzoni and Baden-Fuller (1995) highlighted the extraordinary capacity of innovation in strategic networks that have a strong central firm. Many will recognize the network organization as an approach that has been embraced by a small but growing number of highly successful companies over the past decade.

Thus, the U.K.-based Amstrad, which has battled successfully against much larger firms in the consumer electronics and computer industries,

is illustrative. It has built market share for an expanding range of high-tech durables that are developed and manufactured with heavy dependence on outsourced components, subassemblies, and other inputs. Other examples include the Dutch computer firm Tulip, as well as Nike, which has strategic flexibility in capabilities focused tightly on product design and marketing, and externalizes almost all manufacturing and distribution functions. To achieve flexibility in what they do without incurring high costs or losing efficiency, these central firms create alliances among smaller, naturally flexible firms.

Notwithstanding the supposed advantages of networks, they are difficult to organize. In industries from machine tools to consumer electronics, many companies have discovered that short-term flexibility resulting from transactions involving the externalization of supply for components, subassemblies, and other products had high costs in terms of loss of strategic interdependence and organizational learning capacity (Bartlett, 1993). The same features that gave these networks strength, especially the strong social bonds, slowed radical change. That is, networks run the risk of becoming tight networks in which there is no real opposition or constructive tension between change and preservation. We therefore turn to the third method of dealing with the paradox—resolution through change within the organization.

Resolving the paradox: Two internal mechanisms

Resolving the paradox of change and preservation means recognizing that continuous renewal inside a complex firm is misleading. Too much change will lead to chaos, loss of cultural glue, fatigue, and organizational breakdown (Volberda, 1996). While, in the short term, organizations that are chaotic can survive, in the longer term they are likely to collapse (Stacey, 1995). The firm needs control mechanisms that prevent the fissuring. Our contribution is to emphasize that the two most important mechanisms are those that separate the change and stability either by time or by place.

In *spatial* separation, one part of the organization is responsible for undertaking the process of change and renewal while the other parts remain relatively stable. The classical view of the process of change is that it is undertaken by a specialist research and development group. More often, there is a self-appointed function such as marketing or production that is seen as the spearhead of new ideas. In multidivisio-

nal organizations, the process of change may be undertaken by the upper tier (Chandler, 1962), the lower level (Bower, 1978), in one or two divisions, or by a group of business units either charged with or self-appointed as dynamic agents. In general, in spatial separation, the groups that are changing and the groups that are stable are clearly delineated with differentiated roles. Of course, those that are stable are not immune from change, for effective adjustment requires ideas generated by the dynamic sections to be carried over into the rest of the organization.

We suggest that the other method of resolving the dilemma is to have the whole organization alternating between periods of stability and periods of change. Such methods of orchestrating change have been discussed in the literature under many guises such as "punctuated change" by Tushman and Romanelli (1985), holistic change by Child and Smith (1987), and revolutions by Pettigrew (1985). Such changes are most apparent in organizations experiencing major change programs, such as turnarounds. The detail of temporal change usually shows some spatial adjustment as well. For example, top management may be in a state of change while other parts are stable, and then the baton is handed down to the next level for it to change while top management regains some sense of stability. Looked at holistically, there are clear cycles. In Lewin's (1954) terminology, there is a cycle of "unfreeze, move and refreeze," often repeated.

These opening remarks on the possibilities of resolving the dilemma of stability and change have been deliberately quite general and focused on broad categories of processes. The literature relating to both these methods of managing change is enormous and is dealt with at length in the next section. This categorization, even before a review, allows us to anticipate our later discussion on a potentially important difference between the two mechanisms: namely, the approach to speed and risk. We suggest that the method of spatial separation of change and stability allows the organization to experiment in one place while keeping the other part constant. This method of managing change appears to be one of risk control, for some of the dangers of failure are contained simultaneously, thereby allowing variety (which spreads risk) to increase. Set against this containment is the fact that speed may be sacrificed. *Temporal* separation allows the whole organization to adjust to sharp and sudden shocks more holistically and quickly. Under temporal separation, the possibilities of failure may be

greater if the change process loses control. Moreover, variety is not increased but the speed of execution may be faster. We advance a tentative hypothesis that will be explored and tied to the prior literature more substantially later:

The mechanism of spatial separation will be most effective where the organization needs to contain the risks of change and is not concerned with speedy reaction to outside events. In contrast, temporal separation will be more effective where there is a pressing urgency for the whole organization to respond collectively.

Before we explore this issue in greater detail, we turn to the content of the change, using the competence-based perspective.

Preparing for the content of renewal: Reordering and renewing core competencies

The emerging competence-based view of the firm provides us with a framework for rethinking the content of the process of renewal. There are important antecedents for this theory. For example, Nelson and Winter (1982) in *An Evolutionary Theory of Economic Change* present firms as repositories of routines that endow them with a focus to search, yet at the same time suppress, their attention span and capacity to absorb new information. The routinization of activity constitutes one of the most important aspects of a firm's potential competitive advantage. In a similar way, in the *resource-based view*, the firm is seen as a bundle of tangible and intangible resources and tacit know-how that must be identified, selected, developed, and deployed to generate superior performance (Learned et al., 1969; Penrose, 1959; Wernerfelt, 1984). These scarce firm-specific assets may lead to a core competence. Like economists, those posing the resource-based view of the firm have traditionally been pessimistic about change: In general, they assume that firms are stuck with what they have or what they lack.

This view that firms are stuck and have difficulty changing is echoed in later literature. Thus, there is the idea that core competencies can become core rigidities (Barnett et al., 1994; Burgelman, 1994; Leonard-Barton, 1992), or a competence trap (Levinthal and March, 1993; Levitt and March, 1988), and that high productivity can only be achieved at the cost of decreased flexibility (Utterback and Abernathy, 1975).

Speaking from a normative viewpoint, Teece, Pisano, and Shuen (1992) suggest that firms can and should remain in a dynamic capability-building mode. New competencies and capabilities should be built and incorporated into the firm. By implication, some old ones should be discarded. We examine quite simply two mechanisms by which this may take place. The first mechanism is that of new rankings of core competencies and the second is the process of altering a subset of the core competencies.

To facilitate the discussion, we make a working distinction between core competencies and routines. Our definition echoes ideas set out by Prahalad and Hamel (1990), Grant (1991), and Amit and Schoemaker (1993). We stress that this distinction is not one that seeks to impose the labels of "routines" and "core competencies" on others, for the literature clearly has many similar terms to encompass our ideas and uses our words for a variety of different meanings.

We define competence as shared knowledge among a large group of units within the complex firm, whereas a routine is seen as the province of only one or at most a few units. The competence is therefore a routine that has been refined, stored, and codified or socialized.

Using this definition, let us think of the firm as having a set of core of competencies $C1$ to Cn , and a set of other routines and capabilities $R1$ to Rm . By our definition some or all of the set $C1$ to Cn appear in all (or nearly all) of the subunits, whereas $R1$ to Rm appear infrequently, usually only once.

The firm can significantly change its operations by altering what is in the core and what is in the periphery. For example, if it alters the set of the core competencies dropping one (say, $C1$) and upgrades one of the periphery routines to a new core-competence ($R1$, for example), then the nature of the activities of its units will change. Those units that had $C1$ as a key competence may disappear. In contrast, some new units may appear that take on $R1$. The process by which this change takes place can be one of socialization, or codification, or both (Nonaka, 1991).

There are many examples of firms undertaking such actions. Xerox, for example, recently moved some new marketing skills from the periphery to the core when it redefined the business from one of *photocopiers* to that of *document processors*. In the privatized utilities in the United Kingdom, firms that were once in the public domain and had little concept of marketing or customer service have been obliged to

add skills and capabilities to their existing routines. Typically, these have substituted for highly honed skills relating to the political process of obtaining money out of the U.K. Treasury. Prahalad and Hamel (1990) also give examples of this process where firms are extending their core. Other writers have alluded to the reshaping of organizations that have decided to reject businesses that were once around some competence now no longer deemed to fit.

We label the process that alters the role of some core competencies and upgrades peripheral routines as a reordering mechanism, reflecting the fact that it alters the hierarchy of routines and competencies.

In the second possibility, the firm alters one or more of its core competencies from something it has to something that does not exist elsewhere in the organization. This process means that a competence ($C1$, for instance) is changed to $C1'$, where $C1'$ is unlike any other C or R . Under this kind of change, all parts of the firm that use $C1$ will also change.

An example of such a process of change is when large complex organizations shift from being, say, inflexible producers of service along a standardized line to a more flexible producer of service along flexible lines. The adjustment process of the major Western car assemblers from mass production to flexible production, so aptly documented by many, including Womack, Jones, and Roos (1990), is one example. Kotter and Heskett (1992) documented similar changes at British Airways, which moved from a production-oriented airline ("passengers should alter their schedules and behaviors to fit our needs") to a more customer-oriented service firm ("we are here to serve the customer").

We label the process that alters a core competence to something the organization does not currently possess as one of revitalization, to indicate the nature of the technical change.

Table 1 shows the two processes of reordering and revitalization for a simple multiple unit organization that has two core competencies, $C1$ and $C2$, and two peripheral routines, $R1$ and $R2$. $C1$ and $C2$ are present in each unit, whereas $R1$ and $R2$ appear only once. In the process of revitalization, $C2$ is transformed into $C2'$, which alters the units. In the

Table 1
Simple example of reordering and revitalizing

| | C1 | C2 | C2' | R1 | R2 |
|------------|-------|-------|-------|-------|-------|
| Unit X | ***** | ***** | | ***** | |
| Unit Y | ***** | ***** | | | ***** |
| Revitalize | | | | | |
| Unit X' | ***** | | ***** | ***** | |
| Unit Y' | ***** | | ***** | | ***** |
| Reorder | | | | | |
| Unit X | ***** | ***** | | ***** | |
| Unit Y | | | | | |
| Unit Z | | ***** | | ***** | ***** |

process of reordering, we assume that C1 is dropped from the core and R1 is upgraded. This means that a unit is lost and a new one is acquired.

Is the distinction between *reordering* and *revitalization* a meaningful one? It probably is, because the content of the processes may differ. Moreover, the difficulties of the two may also differ. The process of downsizing and reshaping of portfolios (reordering) appears to be different from the process of substituting new competencies for old ones in the core. Judging by the difficulties faced by complex companies, we suggest that, in general, for a given firm, it is easier to engage in *reordering* than in *revitalization*.

We advance the tentative hypothesis that reordering is less risky than revitalization in a large complex organization.

Comparing four renewal processes

By superimposing two methods of managing change (spatial separation and temporal separation) on two differing change consequences (reordering and revitalizing core competencies), we identify four mechanisms for renewal (see Table 2). These are labeled "Venturing," "Restructuring," "Reanimation," and "Rejuvenating." By examining their differing risk and time profiles, we aim to suggest the different

Table 2
Four mechanisms for strategic renewal

| | Spatial separation: risk control is vital | Temporal separation: speed is vital |
|---|--|--|
| Revitalizing some of the existing competencies | Reanimating Bottom-up processes typically involving double-loop learning | Rejuvenating Holistic change programs aimed at revitalization |
| Reordering core competencies and peripheral routines | Venturing Top-level processes of moving competencies around, including creating new units and selling old ones | Restructuring Top-down process of restructuring divisions, setting of new priorities, and defining new products. |

contextual factors that favor each of these different mechanisms. In so doing, we do not wish to suggest that any mechanism is inherently superior or inferior.

Venturing

In discussing the general problem of renewal, Van de Ven (1986) drew attention to “the structural problem of managing part–whole relationships” and noted the benefits of “venturing.” Drucker (1985, pp. 161–163) expressed the view that (new) flexible units should be organized separately and should have substantial autonomy. Galbraith (1982) stressed the importance of “reservations” that are totally devoted to creating new ideas, while Peters and Waterman (1982) used the term “skunk works” for this phenomenon.

This kind of venturing clearly fits the category of *spatial separation*. However, in the general discourse, it is not always clear if these writers are talking of reordering or renewal. Among those who explore the subject further, there is the suggestion that it is reordering of existing competencies and routines that is the issue, and not revitalizing a core competence. For example, Kanter (1983, 1988, pp. 184–191) distinguished between: (1) the “generation” of an innovation that, in her view, required frequent contact and closer integration with other parts of the organization, and (2) the “completion” or implementation of the innovation in flexible modes, for which segregation or isolation from

the rest of the organization would be helpful. It is clear that, in Kanter's model, the organization is required to lend its core ideas, stores of knowledge, and routines to help develop the new venturing unit.

Building on Burgelman (1983a, 1983b), MacMillan (1985) and Block and MacMillan (1993) have taken the research further by examining the nature of corporate venturing in greater depth. They find a wide variety of innovatory possibilities, all of which share the feature of some spatial separation. At the simplest level, we can think of isolating a flexible unit from a rigid operating core. This principle was applied at IBM when the IBM PC was developed, as the mainframe logic was strongly preserved in IBM's culture and prevented entry into the new PC market. While IBM at first was very successful with this isolation strategy, it found that transferring these new capabilities from the flexible mode to the rigid operating core was very difficult. IBM could not exploit these capabilities in its operating core because it lacked communication channels and common mental frames. Similarly, Eastman Kodak, Philips, and Xerox have had only modest success from their internal venturing and new business development programs.

A more complicated form of separation involves the continuous splitting off of groups into separate organizations. Hewlett Packard, Johnson & Johnson, and Origin are examples of corporations that developed a system of small, semiautonomous units and encouraged entrepreneurs to pursue their ideas in new separate divisions, while the older, more established divisions provided continuity and stability (Mintzberg and Westley, 1992). Overall, the organization appears to be in a perpetual stage of adaptation, never really rigid or planned as long as new units are being regularly spun off from the older ones. This process is best described as a regular cell fission, characterized by ongoing entrepreneurial revitalization. These various modes of separation carry costs, such as the difficulty of integrating the new ideas back into the old organization. But they also bring some benefits since the new ideas are typically insulated from the inertia of the center and have the potential to flourish without being suffocated.

Bearing in mind these findings, we tentatively suggest that the process of venturing has the lowest risk of any of the renewal processes, in the sense that failure can be contained and variety increased. However, as a mechanism for orchestrating change throughout the whole organization, many (e.g., MacMillan, 1985) have noted the obstacles.

Approaches of spatial separation by location seem to assume that the parent organization can continue to operate in a planned fashion, while a flexible subunit of the organization is permitted to undertake pioneering (e.g., R&D) endeavors. Nonetheless, to the extent that the relevant environment for the organization as a whole has been transformed from moderate competition into hypercompetition, the crisis confronts the entire organization and requires a comprehensive response, not a partial one. Although the creation of a separate flexible unit accelerates progress in new areas of opportunity, it often leads to problems of morale, disruption, and reassimilation (MacMillan, 1985). Consequently, exploiting the new opportunities can be slow and frustrating (Burgelman, 1983a). Of the four mechanisms, venturing is therefore potentially the slowest because of the delays involved in first developing the ideas and then transporting them more widely.

We hypothesize that venturing is the slowest but most controllable of all the processes of renewal.

Restructuring

Explaining the mechanisms by which change takes hold across the whole organization has long been the concern of the classical administrative theorists such as Barnard (1938) and Selznick (1957). They have typically described a multilevel approach to management, with top managers having a highly important role in the process. In the same vein, Chandler (1962) explored how corporate management is the primary initiator of managerial action, while front-line managers are the implementers of top-down decisions. In summary, all these writers see very deliberate managerial processes, with spatial separation by level.

Because the idea of core competencies was not well developed by the time many of the writers published their studies, we can only speculate as to whether their models favor ideas of *reordering or revitalization*. Doubtless, many would not accept so limited a description, but nonetheless we suggest that the bias is toward *reordering*. The processes are manifestly top-down and about *selection* of what is currently within the organization.

The notion that a very top-level process is one that emphasizes reordering is clearly taken by Prahalad and Hamel (1990) and Stalk,

Evans, and Shulman (1992). For them, renewal of organizations stems from the strategic intent of the CEO dependent on superior industry foresight. Identifying and building capabilities is viewed as a hierarchical process with the CEO and top management playing a central role (Chandler, 1962; Schumpeter, 1934). In particular, competence development is considered a *top-down, deliberate managerial process*, where the exploration of capabilities created by heuristics, skill development, and fundamentally new insight takes place at the corporate-management level, while the exploitation of these capabilities takes place at the business-unit level or lower.

Examples of such predominantly top-down renewal processes include GE's corporate revitalization guided by its CEO, Jack Welch, and Philips' corporate change initiated by Jan Timmer and further accelerated by its new CEO, Cor Boonstra. What is unique about these companies is that their CEOs drove the entire process of competence development, starting by introducing new concepts, communicating them in an understandable manner through the use of metaphors and analogies, and reiterating them repeatedly. Consequently, new capabilities such as speed, simplicity, and market responsiveness were passed down the organization almost as an order or instruction to be followed (Nonaka and Taneuchi, 1995). Such processes of renewal are often highly stylized, and probably very exceptional. Evolutionary perspectives (e.g., Cyert and March, 1963) suggest that strategy in large complex firms is rarely centralized at the top management, and it is usually multifaceted and less well integrated (Van Cauwenbergh and Cool, 1982).

In thinking about the contexts and nature of *reordering*, we suggest that the risks involved are essentially greater than those involved in venturing, if only because the change is taking place on a larger scale. The failures of top managers to execute such change are well documented, and so the risks are not trivial. However, there is an advantage in speed. Because of the top-down administrative process, with the parallel exercise of power, the possibilities of achieving a quicker transformation seem more likely.

We speculate that restructuring is a quicker, but riskier way of managing a change process than that of venturing. We also speculate that it will be relatively more efficacious in reordering core competencies.

Reanimating

Bower's work (1970) on the management of the resource-allocation process suggested that an effective and powerful process of change is through originating, developing, and promoting strategic initiatives from the lower levels (often called bottom-up or middle-up). His ideas have been echoed in a stream of research, including Kimberley (1979), Quinn (1985), and Bartlett and Ghoshal (1993), which suggested that renewal can emerge from the autonomous behavior of individuals or small groups at lower levels of the organization (Burgelman, 1983a). It is usually argued that front-line managers have the most current knowledge and expertise and are closer to sources of information critical to innovative outcomes. Within the *reactive bottom-up emergent perspective*, the role of top management is seen as retroactive legitimization (Burgelman, 1983) or as judge and arbiter (Angle and Van de Ven, 1989).

While there is no clear suggestion from this literature, we suggest that it favors revitalization. Questioning existing processes by means of an emergent perspective suggests a process of new competence building from the lower levels through double-loop generative learning (Argyris and Schön, 1967; Senge, 1990). It is suggested that interaction with the market and demanding clients facilitate front-line managers to alter the status quo. We compare this process with reordering or exploiting already developed competencies, which is believed to take place at the upper levels by single-loop, adaptive learning. Upper levels help ensure the exploitation of existing competencies and their transfer around the organization.

An example of such emergent bottom-up processes of competence development can be found at 3M. In this highly innovative firm, the role of top management is limited to sponsor, coach, or mentor, while flexible capabilities such as innovation and speed of innovation clearly derive from initiatives at the bottom. Not surprisingly, the names of successive CEOs at 3M are relatively unknown, while the inventors and "intrapreneurs" of the lower levels of the company have received the most attention (e.g., Scotch tape invented by Dick Drew or Post-It Notes by Art Fry). In addition, ABB can be considered a firm where capabilities are developed in a relatively bottom-up fashion. New capabilities derive from front-line managers, but the direction was partly inspired by Percy Barnevik's very ambitious, future-oriented sense of mission.

Because these processes of reanimation may be in part emergent, they are not fully controllable by top management, although clearly controllable by the organization. The emergent process may be slow and halting, giving rise to possibilities that top management may fail to provide the legitimization until some outside triggers appear, as documented in Burgelman's (1994) study of Intel.

We hypothesize that reanimation will be a process most suitable for the revitalization of core competencies, whose risk is controlled but at the cost of speed.

Rejuvenating

The possibilities of holistic radical change have recently emerged in the literature, mainly based on a number of documented cases. In contrast to simple turnarounds (Slatter, 1984) where organizations go back to their roots and eliminate unprofitable activities and shed worthless routines, rejuvenation is the taking hold of wholly new processes to substitute for outdated routines and capabilities. These have been documented by Beer, Eisenstat, and Spector (1990), Grinyer, Mayes, and McKiernan (1988), and Baden-Fuller and Stopford (1994). The typical features of such change processes are that they are holistic, complete, and undertaken quickly. Guth and Ginsburg (1990) explained their close affinity with Schumpeter's (1934) notion of renewal.

Although there is no suggestion that these processes of change are exclusively focused on one kind of competence change, documented examples dwell on the effectiveness in revitalizing outdated competencies. The change processes typically encompass new thought processes (Spender, 1980) as well as routines. Tushman and Romanelli (1985) and Tushman and Anderson (1986) referred to such episodes as "punctuated changes."

For small entrepreneurial firms, this dynamic alternation between competence building and competence leveraging (Sanchez and Heene 1996) is part of their existence and competitive advantage. Their lack of tight commitments and relatively low-sunk costs enable them to undertake radical change easily. For large corporations, complete transformations are much more complicated and nearly impossible. Nonetheless, Kanter (1994) used case histories from companies such as Kodak and Apple Computer to argue that U.S. corporate giants can

learn to change. In addition, using examples of mature U.K. firms—Richardson, Edwards, Hotpoint—Baden-Fuller and Stopford (1994) observed that, although triggers for change may have to come from many quarters and may take time to gather speed, the state of the whole organization can change from rigidity to flexibility. Case histories of large capital-intensive corporations such as DSM Chemicals, Shell, and Unilever that operate in cyclical industries also give us examples of firms that have been successful in managing alternate cycles of convergence and divergence. However, the periods of change for these companies were infrequent and relatively short as compared to periods of preservation. In Unilever, for instance, over the last twelve years there have been three periods of sharp upheaval followed by periods of comparative stability (Maljers, Baden-Fuller, and van den Bosch, 1996). By contrast, for corporations facing more hypercompetitive environments, the exploitation of capabilities becomes extremely difficult, while the periods of change are more frequent (D'Aveni, 1994). Instead of long, stable periods in which corporations can achieve sustainable competitive advantage, hypercompetition is increasingly characterized by short periods of advantage punctuated by frequent disruptions. As an illustration, Microsoft initiates a corporate redesign every eight months in order to remain competitive because, in the software industry, the fully flexible company of today will be the rigid organization of tomorrow.

The dangers of such holistic change programs are not so well documented, except that they often fail to start. For example, Stopford and Baden-Fuller (1995) noted that many firms that tried to engage in such holistic programs failed to reach beyond the stage of ambition. The necessity of mobilizing the whole top team to achieve such revolution is well established and represents a considerable challenge. In addition, there are many other hurdles to cross.

It is hypothesized that rejuvenation represents one of the most difficult kinds of renewal processes. It requires that the organization revitalize existing core competencies, a difficult step, at a speed and in a holistic manner that carry severe dangers. On the one hand, there is a danger that the process may not start. On the other hand, there is a risk that the organization will disintegrate into chaos and so lose what it already has.

Table 3
Contextual factors that favor different renewal mechanisms

| | Spatial separation | Temporal separation |
|---|--|---|
| Revitalizing some of the existing competencies | Reanimating A middle-up process that may be especially suited to revitalizing existing competencies when speed is not vital but controlling risks is important | Rejuvenation A process that is most risky because the scope of the change is large and the content of the change is very difficult. |
| Reordering core competencies and peripheral routines | Venturing A process of change that is best suited to occasions where speed is not important and where the need to control risk is high | Restructuring A process of change most suited to attempts to reorder processes when speed is important |

Table 3 provides an overview of the four propositions stated above.

New and existing technologies of the firm

When do firms have to apply which mechanism? Or are the mechanisms equal? We believe there are some contingencies under which certain mechanisms are more effective than others. One of these contingencies is technology. In the matrix below, we consider two kinds of technology evolution: those that are new to the firm and those whose roots lie in the firm. We briefly discuss four possibilities relating to our boxes.

Technology variation

When competition is perceived to be benign to the firm, the firm can renew creating variety and expanding by drawing on existing technologies. The mechanism of *corporate venturing* supports the firm in diffusing knowledge and technology throughout the firm. Such an approach of intra-reordering of competencies and routines is not speedy but, more importantly, reduces the risks for the firm. By stimulating a variety of initiatives, the risks of survival of the firm are increased (Block, 1982; Block and MacMillan, 1993; Fast, 1979).

Converging technologies

In contrast, firms that operate in emerging industrial complexes in which many technologies converge have to respond quickly. In order to have a competitive advantage, these firms need superior “inter-reordering” capabilities in order to combine competencies across multiple industries. One can expect to see incumbent firms becoming enveloped in a skein of interorganizational relationships involving partial equity holdings and joint ventures (Teece, Rumelt, Dosi, and Winter, 1995). Restructuring their business and creating interindustry joint ventures are adequate renewal mechanisms for such firms.

New peripheral technologies

When faced with a resource-rich environment, firms can undertake core competence renewal at low risk by organizing change in specialized subparts of the firm such as new business development departments, R&D departments, and the like. Starting with a peripheral change in their technology, in the end such a reanimation may lead to a new shared competence of the whole firm. Smith’s (1996) study of strategic renewal within regional Bell Operating Companies is illustrative. She shows that resource-rich organizations can construct new capabilities in the telecommunications service industry through chaotic international expansion activities. These new developed technologies in their unregulated businesses could only be deployed through top management support to focus on certain types of telecom services, project types, and countries. Although the speed of renewal is slow, the process itself is reasonably controllable as firms reintegrate their mainstream activities with their new-stream activities (Ansoff and Brandenburg, 1971).

New core technologies

When firms face fierce competition involving radically new technologies, speed is most important. The crisis is one that may confront the entire organization and may require a comprehensive response, not a partial one. Although the creation of separate change units accelerates progress in new areas of opportunity, it often leads to problems of morale, disruption, and reassimilation. A dramatic corporate-wide transformation may be necessary with holistic transformation of all

managerial levels. Such renewal processes are explored extensively by Stopford and Baden-Fuller (1994) in their case studies of rejuvenating mature firms.

Of course, firms do not always have a free choice. Some have become used to a particular mechanism of renewal, and this mechanism becomes a part of their administrative heritage. Moreover, many firms use two or more of these mechanisms sequentially or simultaneously. Nonetheless, to prepare for the future, firms should continuously reflect on their mechanisms of renewal and be willing to change it when necessary. Table 4 summarizes our discussion of these four mechanisms.

Discussion

Our approach has a number of limitations. First, is it right to make a distinction between revitalization and reordering? While theoretically there appears to be a difference, in practice the boundaries are not so clear. We suggest that our partitioning is justified since it offers useful insights to those who research or practice. Are we right to draw distinctions between differing kinds of change programs? It is obvious that all four mechanisms take place in every firm, but with differing degrees of intensity. Researchers often suggest that one style dominates, but again we must be careful. The distinctions often exist only from a particular perspective. As Weick (1979) aptly points out, often strategy is present only after the event, not during or before.

Probably more fundamental is the suggestion that firms cannot choose among change mechanisms. The historical perspective of research suggests that, even when managers believe they have free choice, their latitude is very limited. History severely constrains the possibilities for action. For example, if a firm has recently undergone a holistic rejuvenation program, it is probably impossible to do another one successfully. Restructuring may also be resisted, and the choice may be between venturing and reanimation.

The real test will be in the empirical work. Does our model help explain events in large complex organizations, and does it help managers? We suggest that, to explore this issue, we need data that cover both time series and cross-sections; only with pooled data can we get at both the process issues and those of competitive content.

Table 4
Technology and mechanisms of strategic renewal

| | Competition is perceived benign by the firm; change is not urgent (Spatial) | Competition is perceived to be intense by the firm; change is urgent (Temporal) |
|--|---|---|
| Technologies new to the firm (Revitalizing) | Slow change of core competence by local initiatives (Peripheral change of core competence by reanimation) | Fast change of competencies by holistic, multilevel initiatives (Fundamental change of core competence by rejuvenating) |
| Technologies existing in the firm (Reordering) | Risk reduction by corporate venturing (Technology variation by venturing) | Quick response by combining competencies across industries (Managing technology convergence by restructuring) |

Conclusions

In much of the literature on strategic management, the discussion of the content of change is separated from the discussion of process. While this has facilitated a great deal of progress, it has also created an artificial dichotomy. We explored the usefulness of putting the two sides together and showed how the subject of corporate renewal is capable of further insight by this process. We provided an early exploration of ideas that need refinement and testing.

All organizations face a paradox between encouraging renewal and opting for preservation. Stability is necessary for internal cohesion and to prevent self-destruction. Renewal is necessary because most organizations cannot innovate as fast as the market requires, especially in periods of disequilibrium or hypercompetition. By posing the somewhat artificial distinctions between competence reordering and competence revitalization, and by contrasting processes of change that resolve the paradox by spatial or temporal means, we identified four mechanisms for renewal and suggested a matching of processes to tasks in different contexts.

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