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Strategic Renewal in Large Multiunit Firms:

Four Dynamic Mechanisms

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OECD Workshop

"The development of practical tools for improving the innovation performance of firms"

Paris, June 30 - July 1, 1997

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FOUR DYNAMIC MECHANISMS

Abstract

An organization needs specific capabilities to develop competencies, but at the same time remaining open for expanded search. These paradoxical requirements imply that there are balances to be struck if capabilities and resources are to remain vital. How do firms then maintain, yet renew or replace their distinctive competencies? Notwithstanding the managerial relevance of this provocative question, most of the research endeavours in strategic management are rooted in stability, not change. There has been relatively little focus on the specifics of how multiunit firms first develop firm-specific competencies and how they renew them to shifts in the industry.

This paper proposes a dynamic approach to understanding and investigating the managerial capabilities and organizational resources that are likely to enable a firm to renew, augment, and adapt its core competence over time. We identify four mechanisms which help describe the complex paths of evolution and adaptation of firm-level distinctive competencies to resolve the paradox of stability and renewal. These are labelled: selection, hierarchy, time, and network. We show how they are embedded in the ideas of population ecology, organizational economics, administrative theory, corporate entrepreneurship, innovation theories and interorganizational relations. By reference to previous studies, we suggest that survival requires usage of at least one, and often more, of these mechanisms.

Descriptors: strategic renewal, organizational change, core competencies, capabilities

INTRODUCTION

How do large multiunit firms reconcile the conflicting forces for change and stability? How do they promote order and control, while having to respond, renew, and learn? Expanding worldwide competition, fragmenting markets, and emerging technologies force established firms to create new sources of wealth through new combinations of resources (Guth & Ginsburg, 1990). The forces for change are countered by short-term competitive forces which require organizations to maximally exploit their existing capabilities and competencies. How do firms balance these tensions?

From an evolutionary perspective, organizations accumulate know-how in the course of their existence. They become repositories of skills which are unique and often difficult to alienate. These skills are the source of both inertia and distinctive competence. The inertia is due to sunk costs in past investments and entrenched social structures, and also to organization members becoming attached to cognitive styles, behavioral dispositions and decision heuristics. The accumulated skills which render firms inert also provide opportunities for strengthening their unique advantages, and to further improve their know-how. The potential benefits include greater reliability in delivering a sound and comprehensible product and many economies of efficiency and routine (Miller & Chen, 1994:1).

The evolutionary perspective has a close affinity with the resource-based theory of the firm. In their *Evolutionary Theory of Economic Change*, Nelson & Winter (1982) present firms as repositories of routines which endow them with a capacity to search. Yet the same routines suppress attention span and capacity to absorb new information, by spelling out behavior that permits search only for new ideas that are reasonable and consistent with prior learning. In a similar way in the *resource-based theory* 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 (Penrose, 1959; Learned et al., 1969; Wernerfelt, 1984). These scarce, firm-specific assets may lead to a core competence with a limited capacity to change. Just as with the evolutionary theory of economic change, the resource-based theory assumes that *firms are stuck with what they have and have to live with what they lack*.

Teece (1984: 106) has also argued that a limited repertoire of available routines severely constrains a firm's strategic choice. The suppression of choice is a condition for the efficient exploitation of a core competence and many studies show that in highly competitive environments a core competence can become a core rigidity (Leonard-Barton, 1992; Burgelman, 1994; Barnett et al., 1994) or competence trap (Levitt & March, 1988; Levinthal & March, 1993). Firms develop core rigidities together with highly specialized resources to enhance profits at the price of reduced flexibility (Volberda, 1996b). Similarly, Utterback & Abernathy's (1975) model posits that a firm which does pursue the evolution of its processes and products to the extreme may find that it has achieved the benefits of high productivity only at the cost of decreased flexibility and innovative capacity. It must face competition from innovative products that are produced by other flexible firms.

Teece et al. (1992), therefore, have suggested that the relative superiority and imitability of organizational resources cannot be taken for granted and that, from a normative perspective, the firm must always remain in a dynamic capability building mode. It is not only the bundle of resources that matter, but also the mechanisms by which firms accumulate and dissipate new skills and capabilities, and the forces that limit the rate and direction of this process.

By synthesizing prior research this paper proposes a dynamic approach. It seeks to understand and investigate the managerial capabilities and organizational resources that are likely to enable a firm to renew, augment, and adapt its core competence over time. On the basis of the paradoxical tensions (Poole & Van de Ven, 1989) between core upgrading and

core building, we distinguish four generic *mechanisms* by which multiunit firms accumulate and dissipate new skills and capabilities to match firm-level distinctive competencies with industry-level sources of competitive advantage: *selection, hierarchy, time, and networking.*

Insert Table 1 about here

Table 1 provides a summary of the argument which follows. In a nutshell, it points out the key essentials of the four mechanisms. *Selection* assumes that the market is an efficient device to dissolve the paradox of strategic renewal. Scarcity of resources and competition forces the multiunit firm to `unconsciously' select only those ventures where the potential contribution of competencies coevolves with the industry-level sources of competitive advantage.

In contrast, the *hierarchy* mechanism assumes that by balancing the various deliberate and emergent managerial activities of hierarchical levels the multiunit firm is able to exploit existing competence as well to explore new competencies. By level distinction (front-line, middle-line, corporate) and spatial separation (operating core vs. new venture) the multiunit firm is able to concentrate on initiating strategic change and the creation of new competencies in one part of the firm and in another part on utilizing of well-developed capabilities and competencies.

Whereas the selection and hierarchy mechanism consider core renewal and core upgrading occurring contemporaneously, our third mechanism resolves the paradox with *time* separation. One horn of the paradox is assumed to hold during one time period and the other during a different time period. Consequently, the process of strategic renewal is seen as a

dynamic alternation between preservation and recreation. In the period of change there is a radical transformation across the whole organization.

The *network* mechanism accepts the tension between core upgrading and core replacement and tries to deal with this tension constructively in a network perspective. Believing that the friction between exploitation of existing competence and exploration of new competencies cannot be solved within the firm, it outsources the problem to others. By using the network mechanism, the multiunit firm not only owns firm-specific competencies which it tightly controls, but in addition has access to firm addressable competencies which it does not own but which it can use from time to time (Sanchez et al., 1996).

Of course, dynamic firms such as Benetton and Intel apply some of these mechanisms sequentially or simultaneously, but we analyze them separately recognizing they are competing. For each mechanism, we will consider its underlying theoretical roots, its perspective of renewal, and how it solves the duality of exploitation and replacement.

THE SELECTION MECHANISM: RENEWAL AS A SELECTIVE PROCESS

According to the selection mechanism, the multiunit firm's competitive environment as well as its internal competitive environment have a major impact on the development and evolution of competencies of the firm (cf. Barney & Zajac, 1994). This "selection leads to competence" approach suggests that the intensity of internal and external selection pressures is critical for the development of potentially valuable resources and capabilities, which can give multiunit firms important competitive advantages. Only those units of the firm that are able to match their capabilities with the internal and external selection environment will survive, while those that do not succeed will die.

Selection within the firm is typically a passive process. As described by Goold & Campbell (1987), a division may be selected-out if it fails to achieve a target rate of profit or some other

objective. When a division or unit is "selected-out," it is closed, sold, or finds resources withdrawn.

This dynamic selection mechanism in rapidly changing environments does not really solve the paradox of renewal, but rather dissolves it (see Figure 1). On the one hand, it creates core rigidities by obsoleting organizational competencies. On the other hand, it invites new internal, external or hybrid ventures within the firm to develop new competencies. As a result of this tension between accumulated organizational inertia and the selection environment, the multiunit firm will replace its core competence or break-up and die.

Insert Figure 1 about here

The internal selection mechanism has an obvious parallel with population ecology theories and organizational economics (see Table 1). They assume that environments are relentlessly efficient in weeding out any units or ventures that do not closely align with environmental demands. There is little faith in conscious initiatives by management to renew the firm. Inertial pressures often prevent multiunit firms from changing their core competencies in line with industry level sources of competitive advantage. The concept of inertia, like that of fitness, refers to a correspondence between the behavioral capabilities of a class of organizations and their particular environments (Hannan & Freeman, 1984: 152). It is a result of the structural and procedural baggage that organizations accumulate over time. The speed of an organization's response relative to competitors reflects these inertia. For instance, specialization of production plants and personnel, established ideas of organizational

participants and `mind-sets' of top-managers may make it impossible for organizations to engage in timely and efficient changes (Morgan, 1986: 67).

Variations or change may be planned or unplanned (Aldrich & Pfeffer, 1976) for the selection mechanism is indifferent regarding the source of variation or change. The general principle is that the greater the heterogeneity and number of variations in the multiunit firm, the richer the opportunities for a close fit to the environmental selection criteria.

In line with these theories, renewal is not a managerial process, but caused by selection of the environment of populations of organizations. For instance, Burgelman's study (1994: 50) of strategic business exit within Intel Corporation shows that it was not the corporate strategy but the internal selection environment that caused a shift from memory towards microprocessor business. Burgelman conjectures that the higher the correspondence between the internal selection criteria within the multiunit firm and external selection pressures, the better the selection mechanism guarantees the coevolution of multiunit firm's competencies with the sources of competitive advantage of the industry. Barnett et al. (1994) found in their empirical study of single-unit versus multiunit firms in retail banking that multiunit firms were able to buffer their units from the external selection environment by seeking positional advantages in the market. Internal selection mechanisms replace the external selection mechanism by `soft' incentives which are weaker than those that act on a population of single firms. They appear to inhibit learning processes that can generate distinctive competencies, but on the other hand remain immune for dysfunctional learning effects such as core rigidity or competence traps. That is, the less well-adapted multiunit firms seem less sensitive to selection mechanisms but their development seems less path-dependent.

While the selection mechanism seems a powerful tool of ex-post explanation of renewal processes, the underlying theories represent a view of individual-organization interactions that are grounded in the assumption that the human role in organizations is essentially passive

and pathological (Perrow, 1986: 213-214; Bartlett & Ghoshal, 1993: 43). This negative assumption about human agency is manifest in extreme determinism in population ecology (Hannan & Freeman, 1984) and the assumptions about shirking, opportunism, and inertia in organizational economics (Alchian & Demsetz, 1972; Williamson, 1975). Such theories approve the breaking-up of large complex multiunit firms yet grounded theory has had an important role suggesting that there is room for managerial action. Evidence from Richardson, Edwards, and Hotpoint shows that renewal can be a purposeful action to achieve leadership out of maturity (Baden-Fuller & Stopford, 1994). Furthermore, companies like Swatch were able to change their past, the rules of their sectors and unlock hidden values. These firms combined novel approaches with stretched resources to create leading positions. These examples illustrate that we need to consider other dynamic mechanisms by which multiunit firms match their competencies with sources of competitive advantage. Therefore, we will consider the hierarchy, time, and network as dynamic mechanisms to explore more generally how coevolution and adaptation of the multiunit firm comes about.

THE HIERARCHY MECHANISM: RENEWAL AS AN ADMINISTRATIVE PROCESS

Most researchers believe managers have some power over their environment and that strategy making in large complex firms involves multiple levels of management (Van Cauwenberg & Cool, 1982; Burgelman, 1994). The hierarchy mechanism therefore resolves the paradox of renewal by clarifying the different roles of various levels of management in the renewal process and the connections between these hierarchical levels. This approach assumes that one horn of the paradox operates at one level of analysis, while the other horn operates at a different level. This idea of *spatial separation* is by level and location. Level differences occur on account of hierarchy (e.g., top versus middle versus front-line managers), and

location on account of geography, business unit or function. These ideas can be found in the literature (see Table 1) on internal corporate venturing (splitting up the company into an operating core and new business ventures), corporate restructuring (specific managerial roles for various hierarchical levels) and learning theories (types of learning related to certain hierarchical levels). Strategic renewal, in this perspective, is an administrative process in which the multiunit firm has to spell-out and manage spatial relationships.

Separation by hierarchical level: Corporate restructuring and learning levels

In line with the managerial perspective of classical administrative theorists such as Barnard (1938) and Selznick (1957), many researchers have considered the managerial roles of the hierarchical levels within the multiunit firm. Originally, Schumpeter (1934) and Chandler (1962) suggested that corporate management is the primary initiator of entrepreneurial action, while front-line managers were the implementers of top-down decisions. This implies that renewal is a *top-down, deliberate managerial process,* where exploration of corporate-wide competencies created by heuristics, skill development, and fundamentally new insights or double-loop learning (Argyris & Schön, 1978) takes place at the corporate management level, while exploitation of these competencies in terms of routine proliferation or single-loop learning takes place at the business-unit or lower levels. This top-down, deliberate managerial perspective is recently supported by Prahalad & Hamel (1990), arguing that strategic renewal depends on the strategic intent (Hamel & Prahalad, 1989) of the CEO or corporate management based on superior industry foresight (see Figure 2). Such grand strategy explanations in highly competitive industries are very exceptional from an evolutionary perspective (cf. Burgelman, 1994:25) as well as a cognitive perspective (Cyert & March, 1963) and do not take into account that strategy in large complex firms is less centralized in top management, more multifaceted, and generally less integrated (Van Cauwenberg & Cool,

1982). That is, strategic management is an organization-wide activity in which each level has to contribute in its own way.

Insert Figure 2 about here

In reaction, building on Bower's work (1970) on the management of the resource allocation process, a rich body of literature has suggested that perhaps the most effective process of strategic renewal is through originating, developing and promoting strategic initiatives from the front-line managers (cf. Kimberly, 1979; Burgelman, 1983; Quinn, 1985; Bartlett & Ghoshal, 1993). This research finds that renewal typically emerges from autonomous strategic behavior of individuals or small groups in lower levels of the organization (see Figure 2). Front-line managers typically have the most current knowledge and expertise and are closer to the routines and sources of information critical to innovative outcomes.

Within the *reactive bottom-up, emergent perspective*, the role of top management is described as retroactive legitimizer (Burgelman, 1983) or judge and arbiter (Angle & Van de Ven, 1989) and that of middle management as supporter and intermediary of lower-level initiatives. Exploration of new competencies takes place at the lowest level by double-loop learning or generative learning (Senge, 1990); the interactions with the market and demanding clients facilitate front-line managers to call into question their norms, objectives, and basic policies. On the other hand, the exploitation of already developed competencies takes place at the upper levels by single-loop or adaptive learning; this type of learning helps the multiunit firm to exploit previous experiences, to detect causalities, and extrapolate to the

future. It permits corporate top management to persist in its set policies and achieve its formulated objectives.

By contrast, in the *proactive bottom-up, emergent perspective* the role of top management is considered to be more than retroactive sense-making of bottom-up initiatives but expanded towards purpose creator and challenger of the status quo (Bartlett & Ghoshal, 1993) of the multiunit firm. This creative tension (Senge, 1990) at the level of corporate management forces the multiunit firm to balance exploitation of a core competence with the cost of adaptability to new competencies. One could argue that in the proactive bottom-up, emergent perspective, top management is involved in single-loop and double-loop learning at the same time, sometimes called deutero-learning (cf. Bateson, 1936; Argyris & Schön, 1978). That is, top management's exploration of unknown futures and its exploitation of known pasts balance each other (Hedberg & Jönsson, 1978: 50). Furthermore, middle management is concerned with horizontal linking and leveraging capabilities across the units in order to prevent fragmentation of resources and capabilities.

Day (1994) shows in an empirical study on strategic renewal that the roles of various management levels are diverse. Strategic initiatives arose from lower levels as well as middle and upper levels. Moreover, she argued that if top management follows only a reactive bottom-up, emergent perspective of strategic renewal, the chances of survival of the multiunit firm is reduced (Day, 1994: 168). That is, the direct role of corporate top management is often crucial, especially in case of strategic renewal projects which require substantial resources during development and cooperation across multiple business units.

Given these divergent views of spelling-out inter-level relationships, it is difficult to give an integrated perspective on the managerial roles of different hierarchical levels. But the general assumption is that clear-level separation can resolve the paradox.

Separation by location: Internal corporate venturing

Of the same general type as level distinction is spatial separation. Efficient exploitation of capabilities and competencies can take place in one locus (division, region or function), while the building of new competencies takes place in a different locus. For example, mature divisions of the multiunit firm may focus on core upgrading, while new ventures are concerned with core building.

Many scholars have tried to understand this problem of creating new ventures within large corporations. They question how new ventures should be organized, and what should be their relationship with the other parts of the organization. Van de Ven (1986) has drawn attention to `the structural problem of managing part-whole relationships.' Drucker (1985: 161-163) expressed the view that flexible units should be organized separately, and should have substantial autonomy from the rest of the organization, in particular from the operational units. Galbraith (1982) stressed the importance of `reservations,' which are totally devoted to creating new ideas, while Peters & Waterman (1982) used the term `skunk works' for this phenomenon. A refinement of their suggestion comes from Kanter (1988: 184-191) who distinguishes between the `generation' of an innovation which, in her view, requires frequent contact and closer integration with other parts of the organization, and the `completion' or implementation of the innovation in flexible modes, for which segregation or isolation from the rest of the organization would be helpful.

Both Kanter and Drucker seem to assume that the parent organization can continue to operate in a planned fashion, while a flexible sub-unit of the organization is permitted to undertake pioneering (e.g. R&D) endeavours. In this approach, the strategic paradox of renewal between core upgrading and core replacement is resolved by spatial separation. Although the creation of a separate flexible unit accelerates progress in new areas of

opportunity, it often leads to problems of morale, disruption, and re-assimilation (MacMillan, 1985). The process can be slow and frustrating (cf. Burgelman, 1983). There are cases when the crisis is one which confronts the entire organization, and it requires a comprehensive response, not a partial one (cf. Bartlett & Ghoshal, 1993; Stopford & Baden-Fuller, 1994). Sometimes a dramatic corporate-wide transformation may be necessary to temporarily explore new skills and capabilities. This brings us to time, our third generic mechanism by which multiunit firms renew.

THE TIME MECHANISM: RENEWAL AS A PUNCTUATED PROCESS

The paradox of exploiting existing capabilities and competencies on the one hand and their recreation on the other can be resolved by *temporal separation*, where the periods of exploitation (stability) are alternated with periods of creativity (revolution). In making the distinction between the two different phases, almost all recognise that during periods of stability, a firm can develop some new capabilities alongside the exploitation of the current portfolio. This process will be one of incremental development (such as discussed by Nelson and Winter, 1984). However, there will be moments where constructive and co-existing incrementalism is not possible, these will occur when the direction or trajectory of innovation becomes competence destroying (Tushman and Anderson, 1986). At such moments, the unit or organisation cannot simultaneously exploit the old and develop the new, but has to "choose" (perhaps unconsciously) between radical change and slow decline.

The notion of competence destroying change, where incremental change paths become radical change paths, is associated with significant unlearning (discussed by Argyris and Schön, 1978), new ways of thinking and new mindsets (Spender, 1980), different paths of technology (Clark, 1985; Tushman and Anderson, 1986), and particular kinds of corporate entrepreneurship (Schumpeter, 1934; Guth & Ginsberg, 1990). Although the role of time is not ignored in the discussions by those concerned with administrative heritage and selection,

the question of how reversibility takes place is generally under-played. More important, in the literature on corporate entrepreneurship, there is a different view on how the process of renewal takes place, with a greater emphasis on the whole organization changing. For this reason, we identified in Table 1 a theme of time, and in this section we explore how time is conceived in renewal under two headings: that of dynamic innovation which emphasises the trajectory nature of renewal, and that of corporate entrepreneurship which emphasises the holistic nature of the change.

Dynamic Innovation and Time Paths for Renewal and Stability

The concept of moving from innovation to exploitation (renewal to stability) is well accepted. The stages model of technological development excellently amplified by Utterback and Abernathy's (1975) analysis of the evolution of motor cars suggests a path where radical innovation (renewal) of the product precedes that of the process, and how both give way to a long period of exploitation and development when incremental change is evident. Whilst the details of the process are controversial, and perhaps dependent on the technology, numerous subsequent studies have confirmed the generic nature of this evolution "to maturity". The critical question is whether irreversibility is possible, that is whether there can be "de-maturity".

Selection theories (principally those of economists and population ecologists referred to earlier) tend to reject that mature well established organisations can purposefully engage in self-renewal. They often suggest that the "genes" of the organisation (such as its mental set) are laid out and develop along an evolving path, which does not permit radical self-directed change. Such observations may apply to many organisations but not all; some do show a capacity for self-renewal.

Burns and Stalker (1961), in their study of organisational form, have suggested that the two different phases or modes can be captured by the labels of "mechanistic" and "organic". They note that organisations may move from organic to mechanistic, and that the reverse is also possible. Other organisational theorists have undertaken a much finer and more complex categorization of possibilities, and transitions. For example, Mintzberg (1979) suggests that organisational structures can be categorised around five possibilities, for different needs and purposes. Several are concerned with the simple organisation, emerging to the fully fledged complex multi-divisional firm. But two modes stand out, adhocracy and bureaucracy which are two opposing designs for the complex firm, and respectively provide models permitting renewal and exploitation.

There have been numerous studies of change from maturity to dynamism. Notable is the longer period analysis of Tushman and Romanelli (1985) which proposes a "punctuated equilibrium". They found that short periods of radical change, where revolution takes place, may be preceded and followed by longer periods of greater stability, associated with development and exploitation. Whether change is long cycled or punctuated is in part conditioned by perspective. If the time period is extended even more, the spikes will disappear and the whole path will appear more smooth.

At the level of the enterprise, Child and Smith (1987) and Pettigrew (1985) note that revolution may cascade through the organisation, and that in some cases it may not always be possible to date the exact start of the managerial processes involved in starting or finishing. However, in some cases such as British Airways (Kotter and Hesketh, 1992) or Novotel (Hunt, Baden-Fuller, and Calori, 1996) the moment when the process took hold is clear even if there are clear historical antecedents. The perception of discontinuity, or slow evolutionary processes, may also be influenced according to whether the observer is looking at tenures of chief executives, structures, systems, organisational processes or the building of knowledge

and technological understanding. On some measures, such as structures, the changes may appear sharp (see for instance Mintzberg and Waters (1983) on the history of the Canadian Lady), on other dimensions such as competence building the process may seem more gradual (Stopford and Baden-Fuller, 1994; Burgelman, 1994).

Whether one has a punctuated view, or a more evolutionary view, the central premise is one of cycling through, where renewal can both precede and follow stability. Not all organizations do follow these waves, for some fail and turn into rigid or chaotic forms. But a significant number do succeed, and in Figure 3, we show this process as one of oscillation between planned and flexible modes (Volberda, 1996a). In this process of change, the organization has to prevent itself from "overshooting" and becoming extremely rigid or chaotic. We do not intended to suggest that the path need be smooth or that the time periods in different states should be equal. Moreover, in some organisations the trend line will be rising, reflecting overall progress, and in others it will fall, reflecting regression.

Insert Figure 3 about here

Corporate Entrepreneurship and the Dynamics of Change

The hierarchical perspective on renewal sees the process of change as driven from one administrative level to another, and the discussion is typically couched in top down or bottom up terms. In contrast, the corporate entrepreneurship literature suggests that renewal is a holistic exercise which eventually involves the whole business, and it is possible to talk of the whole organisation moving from one extreme (maturity) to the other (renewal).

The process of renewal is transparent when applied to the small unit, especially the start - up. There, a single entrepreneur is seen as the driving force of the innovation process. Typically, he or she imbues a spirit in the whole enterprise collecting and motivating like-minded individuals. Recently, considerable attention has been paid to the regeneration of mature units, or whole complex organisations, especially those which are in a crisis or facing decline (see for instance Slatter, 1984; Grinyer, Mayes and McKiernan, 1988; Beer, Eisenstat and Spector, 1990). Here the literature has generally pointed to the existence of a chief executive, or top team group which has championed renewal, but there has been hot debate on the extent to which such a person or small group can undertake renewal in an individual and isolated fashion.

The theories of corporate entrepreneurship typically note that the whole organisation must be involved if radical change encompassing new technologies and new processes is to be accomplished (Stopford & Baden-Fuller, 1994). This temporal perspective on renewal is quite different from that of hierarchy. It emphasizes the importance of the middle manager as entrepreneurs who connect the differing levels of the organisation. This is not the case of one level driving another, but of team-working among levels and functions, as is pointed out by Kanter (1983), Hurst, Rush and White (1986), and Wooldridge and Floyd (1990) to name a few. Baden-Fuller and Stopford (1994) reconfirm the importance of complete organizational transformation in cases of mature firms renewing to achieve not only radical change for themselves, but also change for their sectors, thus linking corporate renewal to industry renewal. They point out, using examples such as Richardson in Knives, and Edwards in High-Vacuum pumps, that although triggers for change may have come from many quarters and may take time to gather speed, in the end the whole state of the organisation can change from maturity to dynamism.

Although more entrepreneurialism is seen as being associated with faster change, too much entrepreneurialism can lead to break-up or even failure. Too great a set of aspirations compared to the resource base, and uncontrolled experimentation can lead to the taking of too great a set of risks (as was associated with Laker Airway's in their challenge to the airlines on the North Atlantic route). The organisation can also be paralysed, because the desire to be entrepreneurial creates chaos (Volberda, 1996a). Whilst the words "corporate entrepreneurship" suggests something that recognises and balances the forces of renewal and stability, the inherent tension for self-destruction is ever present.

The ideas of corporate entrepreneurship being extensive throughout the organisation also link with the resource based theories of competitive advantage. These identify knowledge, capabilities and competencies as the source of success (Schumpeter, 1934; Penrose, 1959; Wernerfelt, 1984; Grant, 1991; Nonaka, 1991; Grant and Baden-Fuller, 1995). Such perspectives insist that durable advantages must reside in the heart of the organisation in complex routines, systems and hidden stores of knowledge. The development of these stores of knowledge and ability must involve, of necessity, large numbers of the organisation, and cannot be confined to a single management process alone, especially that at the top.

From the perspective of the complex enterprise, the process of renewal in one business unit can encourage and lead to renewal elsewhere. Thus, in the study of the merger between Merloni and Indesit, in the European domestic appliance industry, it was noted that one party, Merloni which was in a renewal stage bought Indesit in order to transfer its entrepreneurialism to the rival organisation. Whilst the transfer posed considerable difficulties, ultimately the combined organisation achieved an entrepreneurial state (Baden-Fuller and Boschetti, 1996). Richardson, of Sheffield, was acquired by a larger more complex organisation McPherson, to encourage its knife division to achieve greater things. In a process of reverse engineering, the Richardson management took over and re- energized the

McPherson operations (see Baden-Fuller and Stopford, 1994). In the case of renewal at the Accor group, the process of renewal began in one division Novotel and proceeded without direct involvement of the centre; subsequently this renewal triggered events elsewhere in the group (Hunt, Baden-Fuller & Calori, 1996). In each of these cases, and in others discussed elsewhere, there was neither selection nor hierarchy.

THE NETWORK MECHANISM: EXTERNALIZING THE PROCESS OF RENEWAL

According to the alliance or network view, the paradox of balancing capability exploitation and renewal is resolved by interaction with other organisations. This pattern can be thought of lying between the market selection process and that undertaken within the firm. In the market selection process, those organisations which do not adjust fail. In the hierarchy, those organisations which do not adjust are re-organised. In the alliance - network view, neither side can be wholly right, nor wholly wrong. The market, according to network analysis, is not abstract but concrete and exists everywhere as partners. In a formal or informal alliance, the market mechanism exists because the connections between the parties is mutual and voluntary, but there is a form of hierarchy as typically one party is the central firm or broker (Miles and Snow, 1986). Resolving the paradox of continuity and change can take place in an alliance because there is no longer a clear distinction between competition outside the organisation and cooperation inside. Rather, the partners to the enterprise experience both competition and cooperation. Competition is a driving force for change, but cooperation helps ensure resources and stability. Competition exists between members of the alliances, because there is ultimately independence and freedom with its associated responsibility to survive. In Table 1 we highlight some of the authors which influence this frame and discuss them below.

Alliances and the Renewal Process

According to the literature, a common motive which stimulates firms to alliance making is to capture new technology in any-one of its many forms (Contractor and Lorange, 1988). Thus a firm which finds itself desirous of renewal does not have to undertake the process itself, it can turn to the quasi-market and achieve the same purpose by selecting a suitable partner. In a successful alliance, the new ideas and new technologies are shared between the partnering firms, and renewal is achieved through transferring and upgrading the resources of a partnering organisation. This may take time (that is years rather than weeks or months).

Alliance making and success has been the subject of a considerable volume of research, far more than can be reviewed here. It is important to note that the effectiveness of alliances in the renewal process has been seriously questioned. For example, Bleeke and Ernst (1991) and Hamel (1991) provide evidence that using the alliances is hazardous. They suggest that unless both partners are strong and balanced, the mature organisation may gain relatively little from the partnering. For the weak organisation, where the problem of renewal may be most acute, the risks of alliance making are the greatest.

Even though the alliance making may be fraught with difficulty, there is an attraction. It absolves the central firm from undertaking expensive change itself. Large vertically integrated firms are now commonly renewing parts of their organisations through spinning-out and spinning-in. At the simplest level, there is a dynamic parent which upon finding that one of its units is in stasis or maturity, spins it off. Under a new owner, or more often as a separate unit or management buy-out, and freed from the direct controls of the larger multi-unit organisation, the innovation process can take hold. The spun-out unit is no longer constrained or protected and will (it is argued) feel the pressures of the market more fiercely. During the period of innovation, the spun-out division often continues to maintain links with its old

parent, perhaps through trading, or else through share ownership, or both. Ultimately, the renewed unit may be bought back into the original firm, or more often into another complex organisation.

Demerging has become quite a management fad in the 1980s and 1990s. What was once heralded as a core business and part of the overall complex, may suddenly become non-core and in need of separation. The numerous studies of management buy-outs suggests that in many cases the organisations do far better after being released from their old parents. Moreover, in many cases the old parent companies do maintain some significant links.

This dynamic process of renewal has been most extensively used by governments which have tried to renew the state sector. The degree to which there is an alliance varies greatly among the enterprises. In the case of aerospace ventures, which involve government agencies, the analysis of Koenig and Thietart (1990) is most revealing. They show how in some cases the alliances have been most successful, whereas at other times, especially when they are dominated by political considerations, success has been elusive. In the case of privatization, the state's concern is typically felt through a regulator which tries to bridge the gap. In the UK, where privatization has been most extensive, change has been dramatic. Most notable are British Telecom and British Airways, which have managed to transform themselves in the newly released private sector.

Networks and the renewal process

It was the Swedish school of industrial purchasing (e.g. Hakansson, 1982) which emphasized that markets are really networks, and they stressed that most firms feel market forces though a network of customers and suppliers. Matsson (1987) explored strategic change in a customer network perspective. Von Hippel (1978) described in some detail how customers interacted

with suppliers to ensure that new ideas for product improvement were introduced, and gave tangible meaning to the word market pressure.

The view that more organised networks could act as a powerful mechanism for renewal was first mentioned as long ago as Marshall in Industry and Trade where he recorded an analysis of Industrial Districts, and the same theme has been re-echoed by Ouchi (1981) in his discussions of clans of organisations. The social pressures to aspire to higher achievement and the resources provide industrial districts and clans with powerful mechanisms for resolving the paradoxes of innovation and exploitation. (For a recent discussion, see Porter, 1990). More recently, networks have been categorized and analyzed by Miles and Snow (1986) and Thorelli (1986). Miles and Snow talk of the influence of the broker in the process of change. In most of the above cases, the network or industrial districts have been informal. The same features which have given them strength, especially the social bonds, have also acted in the end to slow renewal. Industrial districts such as Lyon and Sheffield have declined, and even Prato (one of the longest running) has seen great pressures.

Lorenzoni and Baden-Fuller (1995) pay close attention to the process by which the tension between preservation and renewal takes place in a systematically organised *strategic network* which has a strong central firm (see Figure 4). The strategic network is one where there is a clear centre, which acts as a brain and strategiser to its partners. The centre takes on many of the roles found in the headquarters of the large complex vertically integrated organisation. By using examples drawn from firms which have successfully employed the strategic network form over time, such as Benetton, Apple, Sun, and Corning they show that core competencies are typically shared among the members and there is learning and teaching on a systematic basis. The authors identify two methods for the resolution of the paradox of stability and renewal. In the *learning race*, the central organisation organizes a development contest between members of the network offering a prize to the winner. However, losers also receive

a reward, they can use the inventions to ensure rapid exploitation. Thus the downside is lessened without reducing the incentives to innovate. The *Borrow-Develop-Lend* principle is more subtle. A new idea may be borrowed from one partner, or bought in from outside, development may occur in the central firm and exploitation occur elsewhere in the network.

Insert Figure 4 about here

The actual practice of these dynamic networks shows how in some cases it is not easy to separate the firm from its market. Discussing selection in an abstract sense without reference to partnerships is as dangerous as discussing hierarchical and time mechanisms without reference to the forces of competition. Firms which bridge this paradox explicitly seem to have achieved great success. But caution is in order, most of the examples are of young firms, which started as networks from the beginning. Only time will tell if this new form is better.

DISCUSSION AND CONCLUSIONS

All organisations face a paradox between renewal and preservation. Stability is necessary for internal cohesion and to prevent the self-destruction of chaos. Renewal is necessary because most organisations cannot innovate as fast as the market, especially when they are stable. By examining four strands of theorizing: selection, hierarchy, time and networks, we aimed at illuminating differing insights into how these paradoxes could be resolved. Naturally, our constructs are artificial, for the boundaries between the actual writers and their ideas never fit into such neat boxes. Writers who make a contribution to one school, have often written on another theme, and the distinction between the schools of thought is not always as clear as we suggest. For example, those who consider selection also write about networks using this as

evidence; those who write on hierarchy often discuss notions of entrepreneurialism which shows strong elements of time. Even so, we suggest that our classification may help theory building and encouraging researchers to dig deeper.

Separation can illuminate empirical work too. As mentioned, many organizations use more than one mechanism although the emphasis varies by organization and perspective. Very long run studies suggest the power of the insights from selection. Few organizations survive at all, and those which do are typically altered significantly often through changes such as takeovers. Understanding short term changes is better informed by other images, and complex organisations follow different patterns. Companies such as Hanson and BTR appear to follow the selection process, as is documented by Gould and Campbell (1987). In contrast, most of the major oil companies appear to adopt a more closely defined hierarchical mode to ensue their extraordinary survival. Entrepreneurialism and temporal separation was the feature of a constructed sample of rejuvenating firms studied by Baden-Fuller and Stopford (1994) and other studies quoted earlier, whereas the network solution also discussed earlier has its adherents too.

Our ongoing research is directed first at a better understanding of the theories and possible choices that organisations face. Second, and in parallel, we are engaged in some in-depth field studies of change in large complex organizations to see how paradoxes are resolved. Thus, we hope to achieve a fuller exploration and understanding of these complex issues. Whether our initial thoughts are right or wrong, one thing is clear: resolving the paradox of stability and renewal is a major issue for modern large complex firms and its society.

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