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CREATING CORPORATE ENTREPRENEURSHIP

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This paper demonstrates how the various types of corporate entrepreneurship—individual managers, business renewal and Schumpeterian, or industry, leadership—share five 'bundles' of attributes. Each type can exist in one firm, though at different times as the common attributes change their role and relative importance. External and internal triggers for change are examined for a sample of 10 firms in 4 European industries. The data suggest a provocative conclusion: troubled firms in hostile environments can shed past behaviors, adopt policies fostering entrepreneurship and accumulate innovative resource bundles that provide a platform on which industry leadership can be built.

The connections among managerial entrepreneurship, business renewal and industry leadership are receiving increasing attention, and were an important theme in the 1990 Summer Special Issue of this Journal. In the ensuing debate, the term *Corporate Entrepreneurship* is becoming commonplace. Though still ill-defined, the term raises questions of whether and how the attributes of behavior normally associated with individual entrepreneurs can infect the enterprise as a whole.

The strategy literature identifies three types of corporate entrepreneurship. One is the creation of new businesses within an existing organization—corporate venturing or intrapreneurship as it is sometimes called (for example, Burgelman, 1983; Block and MacMillan, 1993; Kuratko, Montagno, and Hornsby, 1990). Another is the more pervasive activity associated with the transformation or renewal of existing organizations (for example, Kanter, 1983; Beer, Eisenstat, and Spector, 1990). The third is where the enterprise changes the 'rules of competition' for its industry in the manner suggested by Schumpeter (1934) and implied by Stevenson and Gumpert (1985). Guth and Ginsberg argue that each type has distinctive characteristics that need separate consideration. They add that 'defining success and failure of corporate entrepreneurship is a major issue not well addressed in the literature' (1990: 8). This article addresses the implied challenge by assessing the performance of 10 firms in 'mature' industries that responded to adversity by introducing corporate entrepreneurship. All firms improved their performance and four achieved competitive outcomes that met the Schumpeterian test. We found that different types of entrepreneurship can exist in the same firm, that many attributes of entrepreneurship are common to all types, and that these attributes change their role and relative importance over time. We also examined external and internal triggers for change and compared the different responses to gain some insight into what conditioned the responses and outcomes. Our findings add to previous evidence that some firms can prosper in hostile or 'mature'

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environments (for example, Hall, 1980), by showing how some have achieved such prosperity.

The data suggest a provocative conclusion. It is possible for troubled firms in hostile environments to shed past behaviors and adopt policies fostering entrepreneurship, some even to the extent of changing the industry 'rules.' To do so, they can follow a path starting with individual entrepreneurship by some key managers and then broadening out into renewal. Successful renewal can be an end in itself, but the resources and capabilities created in the process of renewal provide a 'platform' from which far-reaching industry change can be built.

ALTERNATIVE CONCEPTIONS OF ENTREPRENEURSHIP

How is entrepreneurship to be identified? Is innovating a new product or process entrepreneurial behavior or the routine of an innovative enterprise? Such questions have provoked much of the recent attempt to codify alternatives. Although the literature remains imprecise (Stevenson and Jarillo, 1990), most authors accept that all types of entrepreneurship are based on innovations that require changes in the pattern of resource deployment and the creation of new capabilities to add new possibilities for positioning in markets. Building capabilities can be undertaken at many different organizational levels, involve widely differing combinations of resources and have a wide range of outcomes.

New business venturing is usually associated with individual entrepreneurship, but as Burgelman (1983) indicates it is also an important corporate phenomenon. Individuals and small teams can form entrepreneurial groups inside an organization capable of persuading others to alter their behavior, thus influencing the creation of new corporate resources.

Organizational renewal is a more expansive notion of a complete business (legally or economically defined) altering its resource pattern to achieve better and sustainable overall economic performance. Turnaround, or 'sharp bending,' management is typically considered as a start that concentrates initially on 'financial engineering.' To be sustainable in renewal, more pervasive effort is needed, involving more than a few individuals and the finance function (Slatter, 1984; Grinyer, Mayes, and McKiernan, 1988).

Schumpeterian innovation requires a far more stringent test. The behavior must transform not only the enterprise but also the competitive environment or 'industry' into something significantly different from what it was. We label this behavior as *Frame-breaking Change*. The idea is normally associated with emerging industries and new entrants, yet can apply equally to incumbents in well established sectors, as Schumpeter pointed out. These innovations often represent new combinations such as high quality at low cost (Deming, 1982), speed and efficiency (Stalk and Hout, 1990), miniaturization and low cost (Morita, 1986), or fashion and mass markets (Baden-Fuller and Stopford, 1992). Hampden-Turner (1990) has labeled the development of such new combinations as dilemma resolution.

Schumpeterian competition suggests a new way of thinking about competition. Traditionally, authors have depicted the competitive contests in mature sectors as being among strong and weak firms, with different positions and resources, but all sharing a common sense of a dominant and stable 'recipe' (e.g., Harrigan, 1988, and Porter, 1980). There is, however, an added dimension. Crucial competitive battles can also be based on alternative conceptions of strategy itself (Baden-Fuller and Stopford, 1992). In automobiles, for example, Womak, Jones, and Roos (1990) show how U.S. leaders are threatened by Japanese interlopers deploying a new strategy based on their 'lean' production systems. At times, contests among strategies complement and are more important than the traditional resource-based battles.

Innovative competition is not exclusively the preserve of the new entrant. Some is provoked by established firms that have managed to find and deploy new combinations of resources as a means of retaining leadership (for examples, see De Geus, 1988 for Shell; and Tichy and Charan, 1989 for GE). Sometimes they have first reacted to others' innovations, started processes of renewal and only later on have created new capabilities to the extent that they could go on to change the basis of competition for their industries, just as Brandes and Brege (1993) report for the Swedish multinational, ABB.

Contests that change the industry 'rules' have received little attention in the entrepreneurship

literature, despite the strong association with innovation. Many businesses are created and new, profitable products launched without fundamentally changing their industries. Many firms undertake programs of renewal and can measure progress in terms of change from the past. Yet, few carry renewal forward to the point where they harness new-found capabilities to the extent of transforming their industries. And even fewer do so when they start out from a position well behind the erstwhile leaders. By focusing on the records of some of these rare firms, we aim to fill this gap in the literature and explore the processes by which alternative types of corporate entrepreneurship may be linked together over time.

Common attributes

To identify these links, we first explore the extent to which there are commonalities. The diverse literature on entrepreneurship suggests there are three 'bundles' of attributes common to all types of entrepreneurship. We add two more, derived both from the literatures on innovation and change and from our own observations. Together, they provide indicators of managerial orientations and organizational capabilities.

The first is the much discussed attribute of *proactiveness* (for example, Miller and Friesen, 1978; Mintzberg, 1973), a notion with many dimensions. Individual entrepreneurialism is associated in the literature with freedom to conduct experiments (Handy, 1989), and renewal with more extensive experimentation by groups. Likewise, the idea of frame-breaking innovation, albeit sketchy in the literature, is essentially successful experimental behavior (Hisrich and Peters, 1986) by the whole organization. Unlike Miller (1983), we do not regard proactiveness as necessarily meaning being the first in an industry to do something. Firms can be proactive in renewal, when they borrow others' ideas as a means of breaking from past behaviors.

Unlike many, we do not associate proactiveness with high levels of risk taking. As Stevenson and Gumpert (1985) argue, entrepreneurial organizations are simultaneously innovative and financially risk averse, aiming to spread and minimize risks by initiating many different projects. Entrepreneurial organizations need to be proactive, but this is not the same as taking high risks.

We chose *aspirations beyond current capability* as the second attribute to capture the goal of progress and continuous improvement by finding better combinations of resource. Individual entrepreneurs have high aspirations as do renewing organizations (Cyert and March, 1963; Grinyer and McKiernan, 1990). Stevenson and Jarillo (1990) maintain that they and entrepreneurial organizations do not constrain their perceptions of strategy or opportunity within the limits defined by current resources. Hamel and Prahalad (1989) go further to argue that this attribute is essential for organizations that seek industry leadership and frame-breaking change. Even though Weick (1979: 188) strikes a note of dissent in his assertion that 'organizations formulate strategy after they implement it, not before,' the notion that aspirations need to exceed resources to drive processes of entrepreneurship and to foster high energy levels and endurance is a recurring theme (Gabarro, 1987).

Team-orientation is the third attribute, highlighting the crucial role played by teams of top and middle managers in building coalitions to support innovative ideas and creative individuals (Bower, 1970; Burgelman, 1983; Bantel and Jackson, 1989; Hurst, Rush, and White, 1989). Social contracting has been considered important (Starr and MacMillan, 1990) and Wooldridge and Floyd (1990) are among many who argue that 'vertical' teams can help improve both decision making and implementation. A team orientation is also needed at low levels to maintain a momentum for progress and help managers to add value by working across traditional organizational boundaries (Kanter, 1983).

Care must be taken in assessing the conditions fostering effective teamwork and its extent, for how teams and individuals interact in corporate entrepreneurship remains the subject of controversy. Too much teamwork can create 'groupthink' and stifle innovation (Janis, 1982). Though most authors regard bureaucracy as the antithesis of entrepreneurship, some highly bureaucratic firms can achieve high rates of new product introduction (Sathe, 1985). The same ambiguity applies to the nature of delegation. Whereas some authors regard centralization as important (for example, J. Thompson, 1967) to allow the leader's personality traits full rein, others consider

decentralization essential in enabling innovation (for example, Burns and Stalker, 1962; V. Thompson, 1961).

To these three attributes, we infer two more that we observed repeatedly. One is a *capability to resolve dilemmas* (Hampden-Turner, 1990). Renewing organizations surmount challenges which had previously appeared impossible; often a creative process of resolving internal dilemmas. Schumpeterian entrepreneurship is about combining what had been regarded as mutual opposites and harnessing the outcomes as innovation in the market.

The final attribute is a *learning capability* largely ignored in entrepreneurship studies, but central in the literature on change and innovation (see, for example, De Geus, 1990; Senge, 1990; Argyris, 1985; Schein, 1985). Team learning is seen as essential to either renewal or framebreaking change, for it enables managers to conjure with new possibilities and create new options without becoming frozen into fixed patterns of thought that limit progress. Organizations that go far in developing corporate entrepreneurship can be expected to make sustained *investments* in facilitating the learning environment.

Linking individual, renewal and frame-breaking entrepreneurship

Are the three types of entrepreneurship linked together over time? How long does it take to change behavior of the firm as a whole? How do the intensities and importance of the attributes differ both absolutely and relatively in each type? If the five attributes are created, do all grow together equally, or do some grow faster and earlier than others? These are the questions that a longitudinal study such as this can attempt to answer to shed light on the nature of organizations' adjustments to hostile environments.

Of the many ways to adjust, two stand out at opposite ends of a spectrum of possibility. One is an incremental path over extended periods (Lindblom, 1959; Quinn, 1980, among others). In this depiction, an established, but troubled firm, follows a sequence in which the five attributes progressively become more pronounced in a cumulative process of sustained building. The argument is that it takes time for organizations to *build* entrepreneurship and allow systems and attitudes to evolve and change in fundamental ways. The sequence could start when the efforts of individually entrepreneurial managers begin to be harnessed at the top. Renewal follows as the first developmental moves are extended throughout the organization. The final stage is when the attributes of corporate entrepreneurship become pervasive throughout the enterprise. Each stage is dominated by one type of entrepreneurship and encompasses earlier ones, like expanding concentric circles of activity. This sequence implies the importance of time and processes of diffusion from individuals to groups to firms (Rogers, 1982; Walton, 1987). This model of sequential building does not mean that renewal *necessarily* leads to frame-breaking behavior, but it suggests that firms breaking the frame are likely to find a period of renewal a useful prelude.

The alternative is rapid, radical or metamorphic change punctuating long periods of stasis or inertia (Miller and Friesen, 1984; Tushman and Romanelli, 1985; Eccles, 1993). Though these authors do not explicitly consider Schumpeterian outcomes, one can argue that rapid realignments could change the industry, most likely in emergent sectors but also perhaps in mature ones. Radical change means that the organization transforms itself from stasis to industry leadership, either avoiding an intermediate stage (with renewal as an outcome) or making renewal a brief transition.

The likelihood of radical change would be increased if some attributes of renewal were relatively unimportant for frame-breaking change. Skipping out renewal would thus save money and time. But if all five attributes are important in each stage, an incremental evolution based on sustained investments to develop all of them, albeit at different speeds, would seem more likely.

A further test concerns the nature of the triggers for progress from one state or stage to another. One would expect the triggers for change in an incremental process to be rather diffused and fuzzy, with few clear breaks in any attribute between each stage: metamorphic change suggests clear triggers with sharp breaks. In examining the triggers, we pay particular attention to the way managers perceive their surroundings and frame problems (Argyris and Schon, 1978; Dutton and Duncan, 1987; Isabella, 1990). We also explore the impact of external triggers. Some regard hostile environments or

declining fortunes as spurs to change. Others suggest structural shifts or a dynamic environment throw up both opportunities and threats, but are cautious about the causal links with firms' responses (e.g., Burns and Stalker, 1962; Zajac and Shortell, 1989; Kelly and Amburgey, 1991). Yet others stress that succes spurs greater future ambition (e.g., Mansfield, 1963).

Finally, there is the issue of obstacles to progress. Even when some managers aspire to improve, progress can be impeded by organizational inertia (for example, Hannan and Freeman, 1989). Offsetting inertia can be the momentum generated once a process of change has been started. Kelly and Amburgey (1991), Amburgey and Miner (1992) and Ginsberg and Baum (1993) all provide helpful summaries of the rich literature on this theme and explore the questions of how momentum can also inhibit further change or lead to excesses. Because Amburgey and Miner conclude that 'the impact of inertia and change on survival and adaptation remains unclear' (1992: 346), any study of entrepreneurship should pay some attention to these issues.

SAMPLE AND METHODOLOGY

The data presented here formed part of a larger project investigating the competitive dynamics, firm behavior and economic performance of four 'mature' European manufacturing industries: appliances, textiles, pumps and cutlery. All had hostile environments with slow demand growth, intense international competition and, often, excess capacity. This project examined more than 50 significant U.K. businesses on which data were available in these sectors. In addition, many continental European firms were studied in detail. We identified 10 firms which met the requirements of having had difficulties and, at the least, starting to create some form of entrepreneurial response. We excluded firms like Benetton (textiles) and Creda (appliances) that were never in trouble, those that were in trouble but did little to correct their problems (some of which have since disappeared), and those which denied us ready access to confidential data. Though the four industries were large and contained many firms, this sample contains perhaps half of all the British-based firms which meet the Schumpeterian test. As might be expected, they represent a much smaller proportion of those that made some progress in developing the attributes associated with the other types of entrepreneurship.

Some details of seven of these firms are shown in Table 1 to indicate the range of the firms' characteristics. That diversity suggests that the sample provides a useful basis for reaching some, albeit tentative, conclusions about the general phenomenon.

In line with the growing tradition of analyzing strategic and organizational issues over extended periods (Eisenhardt and Bourgeois, 1989; Isabella, 1990; Pettigrew, 1992 and others), we developed longitudinal case studies with multiple levels of analysis. These histories were circulated within the business for comments and corrections and, where needed, updating to the end of the research period. We used the publicly available ones[1] to test our judgments against the perceptions of executives in other firms and found that outsiders could agree with insiders on the nature of many critical issues and choices.

We collected data in real time between 1985–90 and added evidence about preceding events from internal reports and interviews. In seven firms, we interviewed (where permitted with tape recorders) between 8 and 25 people, including the chief executive and the top team. Some were interviewed more than once, and some were also observed in group meetings. Though the business unit was the principal unit of analysis, we took account of events in corporate headquarters and, where relevant, held extensive interviews there as well. For three firms that did not progress beyond the stage of having some individual entrepreneurs, our data were restricted to evidence from senior managers prior to their acquisition by competitors (two cases) or to the time when one was placed on its parent's 'sell' list. For all 10, we also interviewed buyers, industry associations and government departments and used industry reports to paint a richer picture.

Some of these data were published earlier (Stopford and Baden-Fuller, 1990) where the main sequences of action taken and the overt

[1] These are: Hotpoint by S. Green, Richardson by R. Grant and C. Baden-Fuller, Edwards by J. M. Stopford, Merloni by Baden-Fuller and Boschetti, Wolsey by Bodrug and Wilson.

Table 1. Indicators of the complexity and scope of the sample firms[1]

	Edwards	Richardson	Weir	Hotpoint	Wolsey	Scott	Merloni
Industry	vacuum pumps	cutlery	pumps	domestic appliances	knitwear	knitwear	domestic appliances
Headquarters	U.K.	U.K.	U.K.	U.K.	U.K.	U.K.	Italy
Sourcing	World	Local	Local	World	World	Local	World
No. of countries of production	6	5	1	1	1	1	3
Principal sales territories	World	World	World	U.K.	mainly Europe	World	Europe
Product range	wide	wide	average	average	average	narrow	wide
New model frequency[2]	low	high	modest	high	modest	modest	modest-high
After-sales service importance[2]	high	low	high	high	low	low	high
Approximate size[3]	100	40	100	275	10	8	500
Position in industry	top 3 in world	world leader	U.K. leader	U.K. leader	niche specialist	niche specialist	No. 4 in Europe
Further stage reached (see Table 2 for definitions)	3	3	3	3	2	2	2

Sources: Internal company records and industry sources.
[1]Because all firms were changing their activities and scopes continuously over the time period, these figures are merely indicative. More exact pictures can be found in the various case studies. Data on 3 firms that reached only Stage 1 are omitted to preserve confidentiality: they were in the same industries and shared the same range of indicators of complexity as shown above.
[2]Measured relative to the industry.
[3]Approximate sales value in 1988, in £ million.

triggers for those actions were described. Here we probe more deeply into the processes and organizational attributes that influenced the choices of action and also take advantage of the lapse of more time to add to the longitudinal evidence. We also tried using questionnaires and scales to measure the extent of attributes such as team-orientation. These were given to board members to fill out independently and in one firm to a group of 30 top managers. We followed up the individual scoring with group discussion among all the respondents in each firm. We found that though the numerical scores were unreliable—respondents interpreted the scales differently—there was considerable agreement about the central tendencies and the processes at work. The discussions provoked debate about individuals' differing perceptions of causality and provided valuable qualitative evidence to support the general findings reported here.

The evidence permitted us to assess how far each firm had progressed through the stages—shown in Table 2—by the end of the research period. Seven businesses reached or surpassed Stage 2, that is they had initiated renewal programs, had achieved financial turnaround and had made demonstrable progress in building new capabilities and competitiveness. Three remained in Stage 2, for they had not proven their ability to change the rules of their industry, though they may yet do so.

Only four reached Stage 3. Richardson and Edwards clearly met the criteria. World leaders in market share and profits, both were admired by competitors and widely regarded as industry change agents. Weir, a leader in the U.K. had achieved a dramatic turnaround and gone on to transform its own business and those it later purchased. It was widely regarded in the pump industry as a rule breaker. Hotpoint, despite its small European market share and concentration on its home market, had transformed its business to the point where it became Europe's most consistently admired competitor, feared by some. The CEOs of several leading continental competitors were adamant that Hotpoint had also changed industry practice, especially in the areas of distribution and small-scale, efficient production.

Table 2. Observed attributes of corporate entrepreneurship

	Stage 1	Stage 2	Stage 3
	Signs of change: 'Sensing'	Renewal: 'Galvanized at the top'	Frame-breaking: 'Deepening understanding'
Team-orientation	Limited	Top team: Extensive within function	Lateral and vertical teams
Aspirations beyond current resources	Individuals	Top team and individuals	Corporate vision widely disseminated: growing understanding
Proactiveness	Individuals and isolated teams	Corporate cutting, function building	Multiple firm-wide initiatives
Learning-capability	Intuition, informal	Investment in information systems	Formal and informal processes
Capability to resolve dilemmas	Not explicitly addressed	Resolution within functions	Firm-wide resolution

By 1990, all seven firms had created the characteristics of 'organic' firms (Miller, 1983). They were responsive to their environments and used Miller's five adaptive, structural devices: considerable delegation, extensive use of technical personnel in their innovations, highly developed environmental scanning mechanisms, organizational differentiation and extensive, open lateral communications. These are components of the 'bundles' of attributes described earlier. Without using precise measures, we judged their use in the sample firms to be much more extensive than in their competitors.

The end state of the sample is thus located in one of Miller's three forms of organization and the results cannot be extrapolated to his other two: 'simple' and 'planning' firms. Miller's tests showed that entrepreneurship in organic firms was correlated with all his measures (except for centralization and leadership variables). The value of these findings is limited, because they relied exclusively on respondents' self-appraisal and were not correlated with competitive performance. Moreover, cross-sectional data cannot indicate how organic firms became entrepreneurial or whether they were always so.

How we formed judgments about each of the attributes can be illustrated by three incidents affecting teamwork in three different businesses. One had invested in new machinery to improve quality. Managers claimed that the detailed plan had been debated exhaustively by the top team. Yet, further investigation revealed that the production department had ignored the advice of others and had not modified its original proposal. Despite the claims, we judged that teamwork had been minimal and were not surprised to learn later that quality had hardly improved. In sharp contrast, were Schreiber's actions, soon after he arrived to run Hotpoint. Again quality was the issue. He called a series of interfunctional meetings and discovered the limited value of either a new plant (production's proposal) or adding more after-sales staff (the repair department's preference). Instead, the team identified a few simple modifications to product designs and control procedures which would do the job. The revised, much cheaper, solution proved effective. Here, we judged that teamwork had been important, but of only limited scope. The actions taken, however, provided some momentum for building much more pervasive teamworking later on. The third incident was Edwards' introduction of a new, revolutionary order processing and information system. The system design required inputs from every function over many months and its successful implementation required fundamental operating change in most functions. We judged this project to exemplify full and integrated teamwork.

FINDINGS

Two findings stand out from the data. First is that all the firms built or attempted to build all the attributes of corporate entrepreneurship in long

drawn out processes over many years, not in a one-shot, single event. There was no evidence of successful metamorphic change, though some tried. Like others, Edwards tried but failed. But unlike some, Edwards used the experience to try alternatives. As we indicate later on, failure to learn from disappointment was one reason why three companies stayed in Stage 1. Though this finding does not prove that metamorphic change cannot happen, it shows that the path is difficult and these firms could not find it.

The second finding is that all five attributes appeared in all stages, but each changed dramatically over time and at different rates. During Stage 1, they were muted and not corporate-wide. During Stage 2, they became more evident to varying degrees, but it was only in Stage 3 that all of them became highly important and widely diffused throughout the organization. Even without precise measures, the differences in the nature of each attribute at each stage were demonstrably different from other stages.

In the paragraphs that follow, we add detail about the context and illustrate the range and sequence of actions affecting the development of the attributes. In doing so, we illustrate the triggers that prompted change from one stage to another and the obstacles encountered. No firm was as 'perfect' as it would have liked. For example, in even the most successful organizations, managers felt free to discuss openly why teamwork was not as good as it might be, and why the learning was limited. This sense of persistent dissatisfaction with the *status quo* was most evident in Stage 3 firms and could be regarded as one of the triggers for further improvement. Because we found no single cause of success or failure, we consider these illustrations as raw material for further study.

Stage 1: Individual entrepreneurship

The prelude to Stage 1 is when entrepreneurially minded individuals and small teams work on ideas with few ties to the overall strategy: a form of 'off-line' experimentation. Without connection to the power structure, the results cannot readily be harnessed for the enterprise. Precisely when these experiments formed the basis for moves designed to build corporate entrepreneurship was not obvious; most firms experienced numerous false starts and partial actions that only later could contribute to building a climate conducive to lasting change.

The starting point we chose was when the chief executive recognized the strategy needed root-and-branch alteration, not tinkering with some of its parts. Though many other firms in the wider study possessed innovative, but frustrated individuals, the lack of corporate leadership excluded them from this study. The chief executive could not delegate the energizing process. He—in all cases a male—had to *sense* the need for a new direction before much of substance could be started. We use the term advisedly, for they had no hard data on which to base their beliefs. Instead, they had to be confident that there were sufficient signals from the market to justify exploring possibilities for radical change. They also had to be confident that there was sufficient 'life' somewhere in the organization to make the gamble worthwhile. In two firms, for example, the newly appointed bosses were given the option of selling or closing the operation as cheaply as possible. Yet both found that amidst the chaos, there remained capabilities that could be exploited.

That intuition and personal feelings affected these initial strategic choices is entirely consistent with a wide literature, ably summarized by Hurst *et al.* (1989). What signs of 'life' the chief executives observed influenced their sense of the available options. They chose to work with the grain of what was there, not try to innovate from scratch. Where they started affected how they framed the issues, how they determined the initial targets for raising ambition and the sequences of action they set in motion. Feasibility determined each, unique, sequence.

Consider the question of market data. No firm had adequate information available at this early stage to prove or disprove any proposition for change. Existing information systems focused on the needs of the current strategy and excluded data deemed irrelevant to the chosen 'recipe.' Just as has been said of controls, 'what gets measured gets done,' so with strategy. The known informs strategic choice: the unknown is ignored. The cure for strategic glaucoma does not lie in the realm of logic, but in belief in possibility.[2]

[2] The need to explore new possibilities in order to increase understanding of the present was well put by the poet T. S. Eliot, when he wrote:

Competitor analysis and bench-marking played a role in the sensing, but it was unsophisticated in both scale and scope. In Hotpoint, contacts with other manufacturers made managers aware of possibilities for greater efficiency and effectiveness. At Edwards, bench-marking was limited to general observations that reinforced existing understanding that the U.K. was far behind. Wolsey used information from suppliers and its industry association to compare practice among U.K. and overseas firms.

The central issue in bench-marking is how to use the evidence. Rather than use data to *imitate*, most of our sample used them as an additional spur to raise ambitions to *innovate*, with all the attendant risks. When Hotpoint decided to invest in a new factory, it did not use the performance of its contract partner Zanussi [an industry leader at the time] as a target. Instead, Hotpoint enlarged its ambitions in manufacturing excellence to leapfrog what became the opposition. Perhaps paradoxically, bench-marking studies were used more widely by less successful competitors, mainly for imitation. One went so far as to reject a bench-marking study as '...obviously fallacious. If this was possible we would already be doing it.'

Stage 2: Starting a process of renewal

There were few clear signals as to when the second stage began. We took as an indicator the period when the chief executive's initial entrepreneurial instincts began to be shared and modified by the top team; the beginnings of the transition from *individual to corporate* entrepreneurship. For this to happen, old behaviors had to be 'unfrozen' as new ones developed. In all seven cases, there were many strands of previous thought, partial action and exploration of other possibilities.

What had happened earlier helped build a momentum for change. Figure 1 lays out two sets of conditions about the state of understanding and perception of threat or opportunity that needed to be grasped before renewal could begin in earnest. These conditions are described in terms similar to those identified by Dutton and Duncan (1987) and highlight some of the issues that are notoriously hard to capture in research. One is the question of *whose* understanding. Schreiber understood the opportunities soon after he took over at Hotpoint, but it is doubtful whether his managers did. In Edwards, Rosenkranz found on arrival that many of the key opportunities were already recognized and understood by his senior managers. For him, the problem was that resources had been dissipated by compromises among the functions that lacked a common focus.

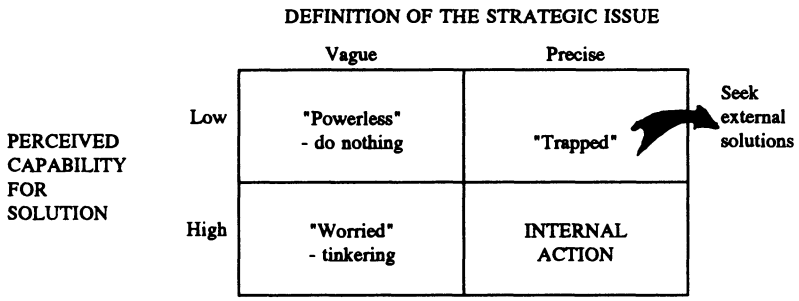
Inertia and lack of teamwork at the top were common obstacles to progress and the resolution of dilemmas. Often, extensive discussions failed to lead to action, either because managers were unclear about the strategic challenge or because they lacked confidence. Referring to Section A of Figure 1, we found that all the top teams had been in one of the other three states before they could commit themselves to collective internal action. Indeed some had been in more than one state of indecision—a prime symptom of inertia. For example, one board agenda had been so all encompassing that every action proposed by one functional director met a counterproposal from another. Though everyone worried about the firm's declining fortunes, managers could not agree on priorities, felt powerless, and drifted on the tide of industry fortune. It took the shock of looming bankruptcy to jerk them into collective action, rather than go to the wall.

Failure to align clear definitions of the problems with adequate capabilities for their resolution was one reason why three firms fell at the first hurdle. One acted as though it already possessed the capabilities associated with Stage 3 and attempted to make giant leaps forward, only to be frustrated by repetitive mistakes.

Like Kelly and Amburgey (1991), we observed other reasons why teams failed to respond to signals for change. For example, when one firm was profitable and supremely self-confident, members of the team suppressed market data, because they did not fit managers' mental models. When the threats became obvious, the self-confidence evaporated. By removing an earlier spur for change, it had fallen so far behind that rescue was possible only by the 'external' means of takeover, at which point most top managers departed.

We shall not cease from exploration and the end of all our exploration will be to arrive where we started and know the place for the first time.' (*The Four Quartets, Little Gidding, IV, 1942*).

A. Understanding of the problem or opportunity



B. Perceived nature of required action

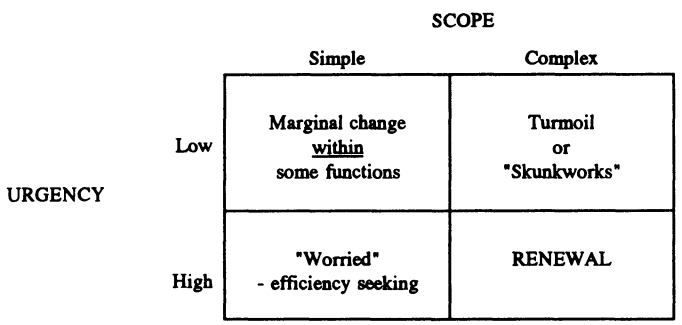


Figure 1. Two connected states of thought and action. Adapted from Dutton and Duncan (1987).

Closely related to these issues are those of the perceptions of the scope and urgency of the actions required—Section B of Figure 1. In all cases, action in at least one other box was taken before the firm arrived at the point of departure for renewal. Often symptoms of 'life' were in some form of 'skunkworks' (Burgelman, 1983). The problem, though, was that such activity was limited and often drifted purposelessly. All had improved efficiencies within some or all of the functions, though no attempt had been made to link the functions together: a key feature of renewal.

To sharpen perceptions and heighten the sense of urgency, all seven firms cut out even profitable activities and simplified the scope of the business. Focus was needed to enable managers to understand more fully just what had to be done. To cure dry rot, the decoration and plaster first has to be removed from the wall. Before the cuts, many managers had found the complexity of their organizations bewildering and told us they had been unable to distinguish peripheral from central priorities. Hotpoint cut its export business despite the fact that it was profitable and that all its larger rivals were international. Others abandoned product lines or technologies, even when they had been part of the traditional core of the firm. Avoiding such hard choices was another reason why three firms failed to progress to Stage 2.

Actions in both parts of Figure 1 can be regarded as a process of exhausting all the 'obvious' actions. Renewal had to wait until such actions had demonstrably failed to provide a lasting solution to the underlying problems. Sustainable progress did not start until the top team was committed to a common direction and was prepared to undergo the pain of reexamining their fundamental values (Argyris, 1985). Such

collective commitment and determination to reach for ambitious goals does not necessarily need consensus on all matters. Indeed, the boards of all four firms that reached Stage 3 avoided 'group-think' by arguing continuously, but in a manner that reinforced the commitment to go on seeking improvement.

Stage 2: Embedding renewal

The top team's enthusiasm for the new strategic direction was a powerful weapon in building a climate for coopting others, eroding resistance to change and creating a momentum for change. Like Kanter (1983), we found that middle managers, used to clear, vertical lines of functional demarcation, often felt threatened by the development of teamwork. Few took naturally to thinking and working across boundaries; to bargaining and selling ideas like politicians; or to exercising greater autonomy in their personal portfolios of activity. They had to be encouraged to contribute to the process of setting detailed goals and, in turn, coopting their juniors in the process.

'Unfreezing' the organization was started by making, sometimes draconian, cuts, but embedding the new values required the firms to start building as well. The building was needed to hold out hope that there really was an exciting future ahead. The cutting crossed functional borders and included whole profit centers. By contrast, the building was principally within a function, where experimentation could be managed without undue risk.

Simultaneous cutting and building extended to the control and information systems. For example, Edwards and Weir abandoned costing systems that had provided misleading information, effectively asking managers to rely on intuition until a new system was (rapidly) developed. Schreiber removed most of Hotpoint's marketing department, because it was supplying misleading data, and initiated a new system. Broadly defined, the new information system provided the means for testing the initial hunches.

In every case, we observed substantial investments being made by the firms to learn by obtaining and evaluating feedback on what they were doing. The gains from investments in information systems were enhanced by developing a greater team-orientation that accelerated the pace of learning and adaptation. Wolsey, for example, had for years ignored what its overseas agents had been saying, but began to be able to listen and the new teams found ways of adapting the product range to national differences in demand.

Teams, all capable of handling ambiguity and personal risk, were needed to help control the cutting and building at lower levels. Their development was not the work of a moment, for there was much resistance to be overcome at each successive level, right down to the shop-floor. In one firm, a major quality-improvement program was initiated after what was claimed to be far-reaching debate among all the functions. Yet, quality remained poor. Why? One production manager answered that 'we were improving the quality on the assembly line, but pressure from sales meant that we had to encourage staff to send out goods that were *almost* right.' Implementation was blocked, because mid-level functional managers were unable to share the board's sense of mission and purpose.

All seven chief executives told stories of what they did to create new ways of working in teams that alleviated, even cured, such problems. They stressed the importance of giving managers a feeling of personal recognition in success, highlighting the difference between corporate and individual success. Some changes were merely symbolic, such as abolishing separate dining rooms, but others required new rewards of money and status for both teams and individuals. The advent of new, flexible production systems required the functional teams to behave and be rewarded on collective achievement. Without common action and common motivation, the dilemmas within the function could not have been addressed, let alone resolved.

Such actions indicated a start to processes of finding new combinations of resources by learning how to manage dilemmas. Dilemmas had to be resolved in the first stage of cutting, for it was not obvious where best the knife should fall to create an effective focus. There were also many dilemmas to be resolved in determining the timing and form of the new initiatives for building; conventional accounting systems often gave ambiguous or misleading signals. In their study of the U.K. domestic appliance industry, Hampden-Turner and Baden-Fuller (1988) identified many specific dilemmas and measured

firms' abilities to resolve them. They showed that resolving *multiple* dilemmas created new sources of advantage that others could not readily match. Though none could resolve all dilemmas completely, Hotpoint made much greater progress than others and gained market share while also achieving high and growing profitability during the 1980s.

All seven Stage 2 firms were distinct from most competitors in terms of their ability to resolve multiple dilemmas. That ability grew over time as more managers gained confidence in what was for many a novel mental approach to problem solving. As with the wider processes of renewal, they tackled the dilemmas sequentially, starting from the simpler ones. For example, when one knitwear firm first purchased computer-controlled knitting machines, it sought to reduce costs for a given level of variety, later increased variety while keeping costs constant and eventually tackled the issue of enhancing customer service without diminishing variety or raising costs.

These repetitive patterns of behavior resemble those implied by Mintzberg and Waters (1982) in their inchworm analogy. Firms were constantly probing into new areas on some dimensions of strategy and then bringing up lagging areas to allow the 'head' to probe further forward, often in new directions, once the 'body' was less stretched. For example, Hotpoint established multiple supply capabilities that later allowed them to confront and resolve a dilemma faced by all U.K. appliance makers in the early 1980s: the rising power of the retail chains. Most producers had oscillated between the extremes of succumbing to the chains' domination and not supplying smaller independents, or else openly defying the chains who then refused to stock or properly display the goods. Hotpoint deployed its supply capability to create a new market combination that both supported the small retailers and forced the chains into a new form of cooperative behavior. Others, lacking equivalent supply capability, could not readily match this move.

The effect was to change the U.K. industry significantly and spark emulation in other countries: a clear signal of moving into Stage 3. But to consolidate its gains, Hotpoint had to do much more inside its organization to maintain the momentum and move further ahead. The real distinction of the four Schumpeterian entrepreneurs was that they both recognized and resolved a continuing stream of dilemmas: less successful competitors may have recognized the dilemmas, but they failed to resolve many of them.

Stage 3: Breaking the frame

The transition to Stage 3 was gradual. There was no obvious spur to climb higher, except perhaps in terms of ambition. Instead there was an appearance of 'things coming together' to get the whole organization moving ahead even faster. The transition was indicated by a stream of new investments to develop and deploy capabilities that made economic change possible in the marketplace and required competitors to respond.

Consider for example the achievements of Richardson which created the *laser* knife and made kitchen knives a fashion item. Previously, mass-market kitchen knives were utilitarian purchases made out of necessity. Moreover, they became blunt through use. Spurred by a major U.S. retailer, Richardson's chairman set his organization the challenge of inventing a knife that needed no sharpening. Its invention proved less difficult than might have been imagined. More difficult was making it on a large scale at low cost, and selling it to an astonished retailer and a disbelieving public. Richardson packaged and sold its new knives to consumers and corporate customers as a gift item. Sales were boosted and the whole market extended. Richardson's success propelled it to world leadership and changed the benchmarks of production and marketing achievement for the industry.

In achieving these innovations, Richardson's organization exhibited all the features we have discussed. Teams were deployed at every stage, progressively more pervasively throughout the organization. They were driven by the aspirations of their chairman, and their own, to succeed as rule breakers. They conducted many experiments, some of which failed including the initial launch of the laser knife. These failures spurred significant shifts in strategy (learning) as the organization sought to resolve dilemmas that seemed at times to be insuperable.

So too in the other three frame-breakers. They all outpaced their rivals in innovation in both the supply and demand sides of strategy. In some

respects, the move into Stage 3 is an outcome of success at earlier stages. The real difference is in terms of the extent of the changes and the impact on competitors' behavior.

The experience of the three firms that have yet to leap over this second hurdle is instructive. Merloni has gone far in its renewal. The recent acquisition of its larger, but failing rival, Indesit, may however have distracted management. It is possible that, once the acquisition has been fully digested, Merloni will attempt to move on to affect the European industry. There is, however, an alternative possibility. The industry economics (Baden-Fuller and Stopford, 1991) suggest that a policy of being a 'fast number 2' could be more rewarding than aspiring to industry leadership.

In the other two, top-level initiatives were not always as successful as had been hoped. It is also evident that the five attributes of entrepreneurship were weaker, particularly in the development of team-orientation and proactiveness. Both limitations served to blunt the pace of experimentation and contain aspirations within the confines of specialist niches where they could prosper by remaining adequately responsive to competitors' changes.

CONCLUSIONS

By examining the special case of rejuvenated frame-breakers and comparing their progress to others, we provide an empirical base to demonstrate that there is a meaningful connection among individual entrepreneurship, renewal and Schumpeterian entrepreneurship. The framework provides linkage among the separate classes of enquiry mentioned by Guth and Ginsberg (1990) and the disparate strands of literature on each kind of innovative behavior.

The processes by which the sample of ten firms failed or succeeded in building entrepreneurship add to the debate on emergent v. metamorphic change. Our evidence is consistent with the emergent school. Even firms that faced severe financial crises took years to move beyond early turnaround. They found it too difficult or too risky to effect rapid, holistic change without first building the five attributes of corporate entrepreneurship. They worked in a series of recognizable stages to embed these five attributes in the fabric of the organization and so provide the capabilities for further progress.

Incrementalism is also suggested by the fact that all five attributes were present in all stages, though in different forms and with differing intensities and importance. There was no evidence of a single path of progress, merely that each firm found its own way to inch forward on some attributes, catch up with others and inch forward again. The evidence, however, does not rule out the possibility of rapid transformations in other circumstances. The difference, perhaps, is one of the scope of the change at issue. Partial changes occurred rapidly in our firms; transforming the whole enterprise occurred only slowly.

The issue of the extent to which a hostile environment provides a trigger for fundamental change remains unresolved. Though all 10 sample firms responded to the challenge, some competitors remained inert. External challenge does not necessarily trigger constructive reaction. As many others have observed (for example, Amburgey and Miner, 1992) cognitive constraints affect perceptions of the environment and subsequent action. Despite the rich contextual evidence on the sample firms we could not satisfactorily resolve three issues related to the impact of perception on action.

The first concerns the triggers for change. We show that change can be stimulated by opportunity as well as by threat, and we also stress the importance of ambition exceeding current capabilities. Yet we cannot isolate independent causes. There was a sense of combinations of perception and indications of thresholds of concern above which awareness would more likely lead to action. This fuzziness of the triggers is characteristic of an incremental process. Sometimes the spur was a challenge from the market, sometimes a difference of opinion about the possibilities for enhancing existing capabilities. Moreover, the extent of ambition was seldom obvious at each stage. No frame-breaker sought industry leadership when it started out: survival was the issue. But when and why did the sights rise? All we can conclude is that success in the cutting-and-building processes seemed to engender in some firms a momentum to seek more pervasive entrepreneurialism and more stretching market goals, as Mansfield (1963) observed. Others, however, were not similarly

moved, perhaps because their successes were more limited.

Momentum generated by success in overcoming obstacles and partial failures plus the growing confidence so created featured prominently in managers' descriptions of their choices. To that extent, the data provide support for the propositions of Dutton and Duncan (1987). But did the manner in which the obstacles and organizational inertia were overcome affect the nature of choice and action later on? How was the momentum channelled into consistent paths of development? Are there critical thresholds of achievement on some attributes that must precede others within each stage? How can firms guard against the possibilities that creative avenues of progress become distorted and counterproductive over time in the ways that Miller (1990) suggests? These are important questions, especially when spreading entrepreneurial ambition is the goal, and deserve further work.

We cannot satisfactorily resolve the second question of *whose* perception drives the change. We found that individual entrepreneurialism, especially among those who hold power, preceded more pervasive, organization-wide entrepreneurship. But we could not be sure whether those individuals relied on their own or others' intuitions and interpretations of the available data. Like Isabella (1990), we observed that managers' interpretations of key events provided a sense of history that influenced later events when the initial interpretations were shared among a wider group, and sometimes modified in that process. We also observed links among the tasks of scanning and interpreting data, organizational actions and later performance in ways that resemble the observations of Thomas, Clark and Gioia (1993). We were unable, however, either to sort out whose perceptions drove subsequent changes when more people were involved, or to identify how the manner of interpretation affected choices of action. These are issues deserving much further enquiry, especially when maintaining the momentum becomes important.

The third issue concerns the extent and nature of the corporate venturing undertaken at the initial stage. Because the sample firms were all undiversified, managers' initial ventures were variants of the businesses they knew. They did not start new businesses of the type normally associated with the term. Whether this limited scope makes a difference to the later process is a question that needs investigation with a different sample.

Because our sample is a special case, our conclusions must be tentative. It is not clear how they might relate to other firms in other types of industry. Moreover, our data are imperfect: the executives did not keep diaries of actions taken over long periods. We had to rely on memory and incomplete internal documentation to trace through the evidence of what preceded our real-time tracking of events. However, the framework we developed suggests a rich avenue for further enquiry on how firms can create and build entrepreneurship to a high order, something which ultimately must be of both private benefit and of benefit to society as a whole.

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