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SWP 27/93 PROCESSING IDEAS FOR INNOVATION: THE BENEFITS OF A MARKET-FACING APPROACH

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BIOGRAPHY

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Simon is a Senior Lecturer in Marketing at the School of Management, Cranfield Institute of Technology. After graduation, he followed a career in international food marketing with Unilever Plc. He regularly contributes papers to international conferences and publishes in the area of consumer behaviour and branding. He has recently been appointed Director of the Centre for Advanced Research in Marketing within the School.

**PROCESSING IDEAS FOR INNOVATION:
THE BENEFITS OF A MARKET-FACING APPROACH**

by

Dr Simon Knox

ABSTRACT

This paper sets out to identify how management can adopt a more creative approach to innovation through a new process of idea generation.

Both proactive and reactive approaches to innovation strategy are discussed in the context of change factors and the sourcing of new ideas for innovation. Four loci of idea sourcing are identified and shown to vary in importance according to industry sector.

Although evidence is presented to suggest that heuristic techniques are being used increasingly to enhance creativity, their use is limited both by the perception of their function and the strategic mode adopted by the organisation. The concept of the creative cell is introduced to counter these limiting factors. It is also argued that this cell should be multi-functional and marketing-led. So, as well as performing in this creative function, a more responsive and entrepreneurial atmosphere will emerge as horizontal relationships develop. With the development of successive creative cells within the organisation, a unified approach to creative innovation will evolve as the traditional proactive and reactive strategies merge.

CREATIVITY, INNOVATION AND ENTREPRENEURSHIP

Creativity, innovation and entrepreneurship are essential ingredients in corporate success. It is universally accepted that organisations which excel in each or all of these management endeavours are more likely to attain excellence than those which are devoid. Many learned management texts have been written about each activity - their implications for management and their strategic value. Drucker (1985) writes: "what we need is an entrepreneurial society in which innovation and entrepreneurship are normal, steady and continuous. Just as management has become the specific organ for all contemporary institutions, so innovation and entrepreneurship have become an integral, life-sustaining activity in our organisations; our economy; our society." Majaro (1988) writing on creativity and innovation, "The inescapable conclusion that I have reached by observing a large number of companies in many parts of the world is that the truly excellent ones are those that have consciously learned how to harness creative ideas from within the firm and from the external environment and, at the same time, manage the firm's innovation in a systematic way".

In many instances, marketing management provides the driving force behind company innovations as changes in the market place occur. Since creative ideas and concepts for innovation act as the catalysts in this management process, it would seem entirely appropriate that marketing management should lead the development of a more systematic approach towards the task.

This paper sets out to address how management can organise to adopt a more creative and market-facing approach to the idea generation process with marketing in the lead role.

INNOVATION AND IDEA SOURCING

The work of Von Hippel (1979, 1988) has been highly influential in rationalising the origins of industrial innovations. He identifies two paradigms as alternative perspectives behind idea initiation in the innovation process: the manufacturer-active paradigm (MAP) and the customer-active paradigm (CAP). In the case of MAP, he cites the manufacturer as the idea initiator, selecting customers to develop needs data then, from this, generating new product ideas for testing against these customer requirements. The CAP identifies the would-be customer or user as the originator of the new idea and focuses upon the characteristics of the lead users most likely to offer explicit, new product opportunities to the manufacturer. Foxall (1987) has built upon Von Hippel's earlier work by developing and refining the role of customer partnership in industrial new product development. He redefines the CAP to include four "user" states or roles. In each instance, the user group act both as idea generators and screeners at the early stages of the innovation cycle (the exception to this is the active-user-initiated product innovators where the task of screening ideas is shared between the user and the manufacturer).

The locus of the idea initiation can be identified more clearly when these "opportunity" sources are considered in the context of recognised innovation strategies (Figure 1).

INSERT FIGURE 1 HERE

For most organisations, the four loci can be closely associated with the change factors identified by Drucker (1985), irrespective of the general strategic mode of the company (Table 1).

INSERT TABLE 1 HERE

However, it would be unrealistic to assume that different organisations place the same strategic importance upon each change factor or, indeed, locus of idea initiation. This would clearly be absurd since organisational goals and search procedures will vary according to market conditions and industry sector. Baker et al (1985) have reported findings across four industry sectors which demonstrate the variability of ideas sourcing according to the functional management and external sources involved (Table 2):

TABLE 2: Sources of Ideas for Innovations

INDUSTRY IDEA SECTOR SOURCE	FLAT STEEL %	AGRI.- CHEMICALS %	PROCESSED FOOD %	INDUSTRIAL CHEMICALS %
R&D Division	56	56	51	54
General Management	2	9	6	5
Marketing/Sales/ Distribution	13	10	29	17
Production/Engineering & Technical Sales	6	3	5	5
User	17	6	5	14
Technical (outside firm)	3	12	3	3
Others	3	4	1	2
Total %	100	100	100	100

Legend: Data provided on 211 projects from 21 firms based upon success or failure rather than a representative sample.
% = percentage of citations

Source: Baker et al (1985)

Although the exact nature of the interactions between functions and external sources is not made clear (viz. the locus of idea initiation), significant differences can be inferred for the data according to industry sector. For example, the processed food firms, involved in marketing fast moving consumer goods, show a high level of proactive involvement of marketing and sales in the sourcing of ideas (29%) presumably through interactions with targeted user groups. In contrast, the agrichemical firms appear to depend less upon marketing (10%) or user-initiated ideas (6%) and more upon intra- and inter- organisations technical advances (68%).

To summarise, it would appear from the literature that the locus of ideas for innovation, the change agents and their impact on a firm's innovation strategy have been well researched. However, the mechanisms by which specific ideas are generated and channelled within the company are, perhaps, less well understood.

Idea Sourcing and Heuristics

There is some evidence to suggest that organisations are, increasingly, utilising heuristic techniques in order to extend the creative process in generating ideas for innovation. Geschka's research (1983) has shown that detailed working knowledge of brain-storming techniques has doubled to over forty percent of (West) German industry. He concludes that, where successfully applied, the techniques have become standard instruments for developing management creativity and improving communications. A full list of such heuristic search techniques has been drawn together from the literature [Foxall 1984, Majaro 1988, Twiss 1980, Urban et al 1987] and classified according to the locus of management involvement and the working principles identified by Geschka. This matrix is presented as Figure 2.

INSERT FIGURE 2 HERE

A number of conclusions were reached during this classification process. Firstly, there is a tendency for organisations to link the heuristic techniques with proactive strategies as a method of generating new ideas for innovation. Secondly, the more widely used techniques, such as brain-storming, synectics and morphological analysis, are perceived generally as intra-organisational events rarely involving preferred suppliers or lead users. Finally, the range and definition of the ideas developed will depend, largely, upon the technique adopted - according to whether intuitive or the systematic structuring of thought processes are required.

It is argued in the remaining part of this paper that, if management wishes to adopt a more creative and entrepreneurial approach to innovation, it must extend the scope and use of creative thinking techniques beyond conventional organisational and strategic boundaries to be market-facing and marketing-led.

INNOVATION AND IDEA PROCESSING

A number of papers have described the idea generation process as the coming together of an organisational need, problem or opportunity with a means for satisfying the need, solving the problem or capitalising on the opportunity [Baker et al 1967, 1972, Utterback 1971]. Baker's idea generation paradigm (1980) is an appropriate description of this underlying process, identifying the distinguishing characteristics between the stages involved, separating idea generation inputs from their assessment criteria (the needs - means evaluation process is applied as a result of the perceived performance gap with the organisation). The paradigm is correct to distinguish between the needs - means tasks since the latter process is analytical

and deductive - selectively matching needs with means through a predetermined screening process - whilst the former is creative, open-ended and non-evaluative. However, it is felt that Baker's paradigm needs to be extended to include an "intermediate generative" step so that the ideas are also separated from their source, or locus of origin, and retained as "creative stock" for further development prior to evaluation. Without such an intermediate step, ideas may continue to be prematurely rejected or overlooked for a myriad of different organisational reasons (Figure 3).

INSERT FIGURE 3 HERE

In the following section, the concept of the market-facing creative cell is developed and proposed as an appropriate structure to carry out this "intermediate generative" management task.

IDEAS EXTENSION AND THE CREATIVE CELL

Overcoming Management Constraints to Creativity

Intermediate judgement implies an informal evaluation process prior to formal screening. For instance, if the management culture is such that idea sourcing is either haphazard or too rigidly controlled, a hierarchy of idea sources will emerge in the minds of the more informed managers with an imposed level of legitimacy in either situation. Thus, there is a danger that the source of the idea becomes the decision variable rather than the idea itself. Intermediate impossibles (ideas that are not fully developed) can also be lost by inappropriate management reactions.

A number of these managerial constraints can be reduced, if not removed, by breaking these conventional patterns of association. By effectively reversing this procedure and developing a management system that is known to value ideas, irrespective of source, and which does not make discriminatory, intermediate evaluations, then the stock of ideas will grow and can be used as the raw material for further creative development. Majaro (1988) has recently introduced the concept of a central management team (creative cell) to establish an ideas flow within an organisation to channel ideas to the appropriate functions. This management concept has many attractive features since it signposts a receptivity to innovative ideas on a more structured basis. Since Marketing Management should occupy a prominent position in the management of innovation, it would seem appropriate to centre the creative cell concept within Marketing but with multi-functional representation. This management team could also adopt a proactive role in developing new ideas and performing the "intermediate generative" task previously identified.

In order to adapt Majaro's creative concept to deal with both these idea generation and development stages suggested in this paper, the designated managers would require extensive training in the use of both heuristic techniques and divergent thinking.

The methods of divergent thinking have been well established by De Bono (1987) and serve to introduce discontinuity and provocation so that "least likely" options can be introduced, even if they are inadequate in their present form (which can result in premature screening). De Bono argues that there are a number of basic principals which distinguish divergent (creative) thinking from the normal analytical or deductive processes (convergent) that management uses for decision making purposes (Figure 4).

INSERT FIGURE 4 HERE

In the context of developing the creative cell approach, these principals can be used by the group to provide a bridging function to extend the stock of existing ideas in a generative way. Its second bridging function would be to facilitate the development of new ideas for innovation by encouraging the use of heuristic techniques to fostering creative thinking across functions.

Overcoming Organisational Constraints:

Developing the Market-Facing Approach

Figure 3 illustrates many of the organisational constraints which can dampen creative and entrepreneurial endeavour. The introduction of the creative cell within the organisational structure does not necessarily imply reorganisation. In the initial stages, the cell should be introduced through the marketing function at the middle manager level across the company. Typically, in a centralised organisation, the marketing manager most closely associated with new market developments would chair the group. As suitable middle managers are drawn from each of the appropriate functions (on a part-time basis), a management system is developed across the company (Figure 5). Where appropriate, personnel from outside the company should be introduced into the cell to stimulate the thought process. For instance, this could include both preferred suppliers and lead users, as well as other external organisations such as creative consultants and marketing research agencies.

INSERT FIGURE 5 HERE

As the cell concept becomes embedded, the enabling characteristics of the management system, with its emphasis on horizontal rather than vertical relationships, will become recognised as a major source of information, ideas and resource. Many researchers [Burns and Stalker 1968, Kanter 1982, Sherman 1985, Stalk and Hout 1990] regard this configuration as conducive to entrepreneurial and creative endeavour within the organisation. The concept is, in fact, independent of organisational structure; where cell management already exists, horizontal relationship will already have been developed, so the scope of the management team can broaden to include strategy, such as improving customer service (Christopher 1993) or customer retention rates (Reichheld and Sasser 1990).

With sufficient training and practice in creative techniques, the creative cell should be replicated (once the start up problems have been resolved and the benefits assimilated at senior management level). With strong senior management support, multiple, interdisciplinary groups would then become the norm, each with specific tasks identified by the group and agreed at Board level.

A UNIFIED APPROACH TO INNOVATION STRATEGY

The strength of the cell lies in its shared approach in recognising opportunities for change by the management of the organisation. Success is dependent upon a number of factors; firstly, generating ideas that fit the opportunity window and, secondly, by building on these ideas through further refinement. The final success factor depends upon rapid senior management evaluation and feedback.

The participation and involvement of senior management with this creative process is critical to its growth and in determining the focus. If the management concept is valued and nurtured, it is possible to envisage a tiered approach to problem solving,

design and innovation. In its mature stages of development, creative cell innovation replaces either proactive or reactive strategies (Figure 1) since both merge in a unified approach. Ideas for design improvement and new concepts become a common task of those involved with the process. By the same token, the locus of innovation (Table 1) becomes less critical to the strategy of innovation. This is because the creative cell will have a marketing orientation which extends beyond the boundaries of the organisation and can, therefore, actively assimilate both change factors in markets and lead user requirements, on a continuous rather than an occasional basis.

This unified approach to innovation and redesign does not imply that the same starting point is assumed in each situation. Both require the application of differing heuristic techniques and creative thought processes. However, unification does imply that both tasks should be perceived as possible and necessary by management in pursuit of the same organisational goal - satisfaction - which equates with sustaining competitive advantage, achieving corporate objectives and personal reward.

If Marketing Management is to provide the central focus for innovation, it follows that marketing must also take the lead in developing the creative cell, particularly at the idea development stages of the innovation process.

CONCLUSIONS

The author has set out to identify how management can organise to adopt a more creative and entrepreneurial approach to innovation at the idea generation stage. Both the proactive and reactive innovation strategies are discussed in the context of change factors and the sourcing of new ideas. Four loci of idea initiation are identified which appear to vary in importance according to industry sector.

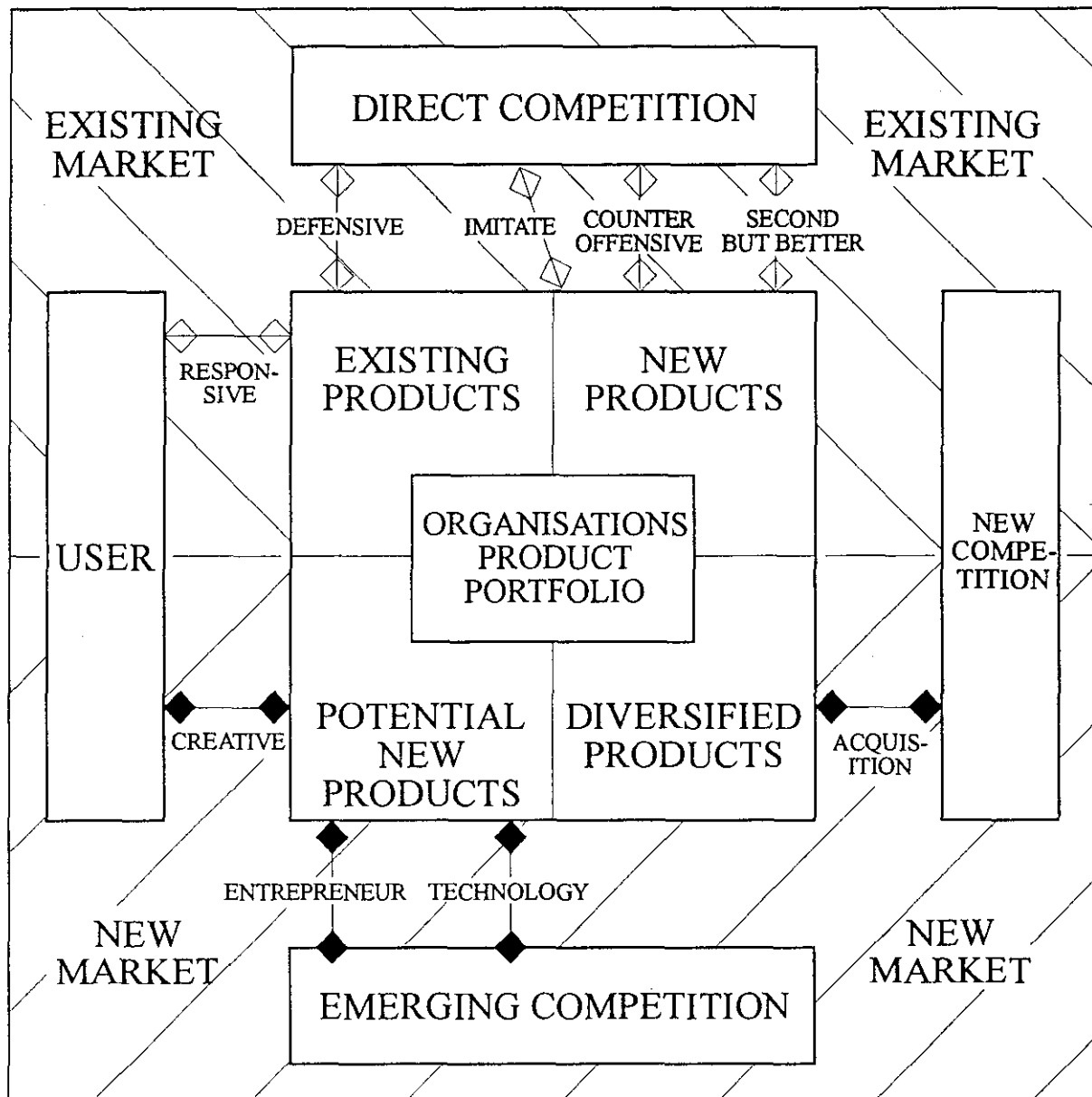
Although evidence is presented to suggest that heuristic techniques are being used to enhance creativity in idea generation, their use is limited both by the perception of their function and the strategic mode adopted by the organisation. The concept of the creative cell is introduced to counter these limiting factors. Trained in creative thinking techniques, this multi-functional team can provide a bridging function between the generation of new ideas for innovation and the extension of existing stock. As well as offering this idea generative function, the cell will also encourage a more creative and entrepreneurial atmosphere through the development of horizontal relationships. As the influence of successive creative cells permeates the organisation, a unified approach to creative innovation will evolve as the traditional proactive and reactive strategies merge.

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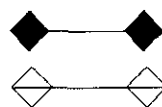
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Figure 1 : The Locus of Idea Initiation and Innovation



Legend:



Proactive Strategy

Reactive Strategy

Source:

Modification from URBAN, HAUSER and DHOLAKIA (1987)

**Figure 2 : Common Heuristic Methods :
The Principles and Practice Matrix**

Working Principles		Locus of management involvement	Organisation - User cell	Organisation - Organisation cell
Stimulation of Intuitive	Associative		Think Tank	Brainstorming Brainwriting
	Confrontation			Excursion synectics Semantic intuition Scenario writing
Systematic Structuring	Variation		Gap analysis modifying morphology	Conceptual morphology Sequential morphology Progressive abstraction Technological monitoring
	Confrontation		Delphi	Morphological matrix Tilmag

Figure 3 : Idea Diffusion : Intermediate Judgement and the Creative Gap

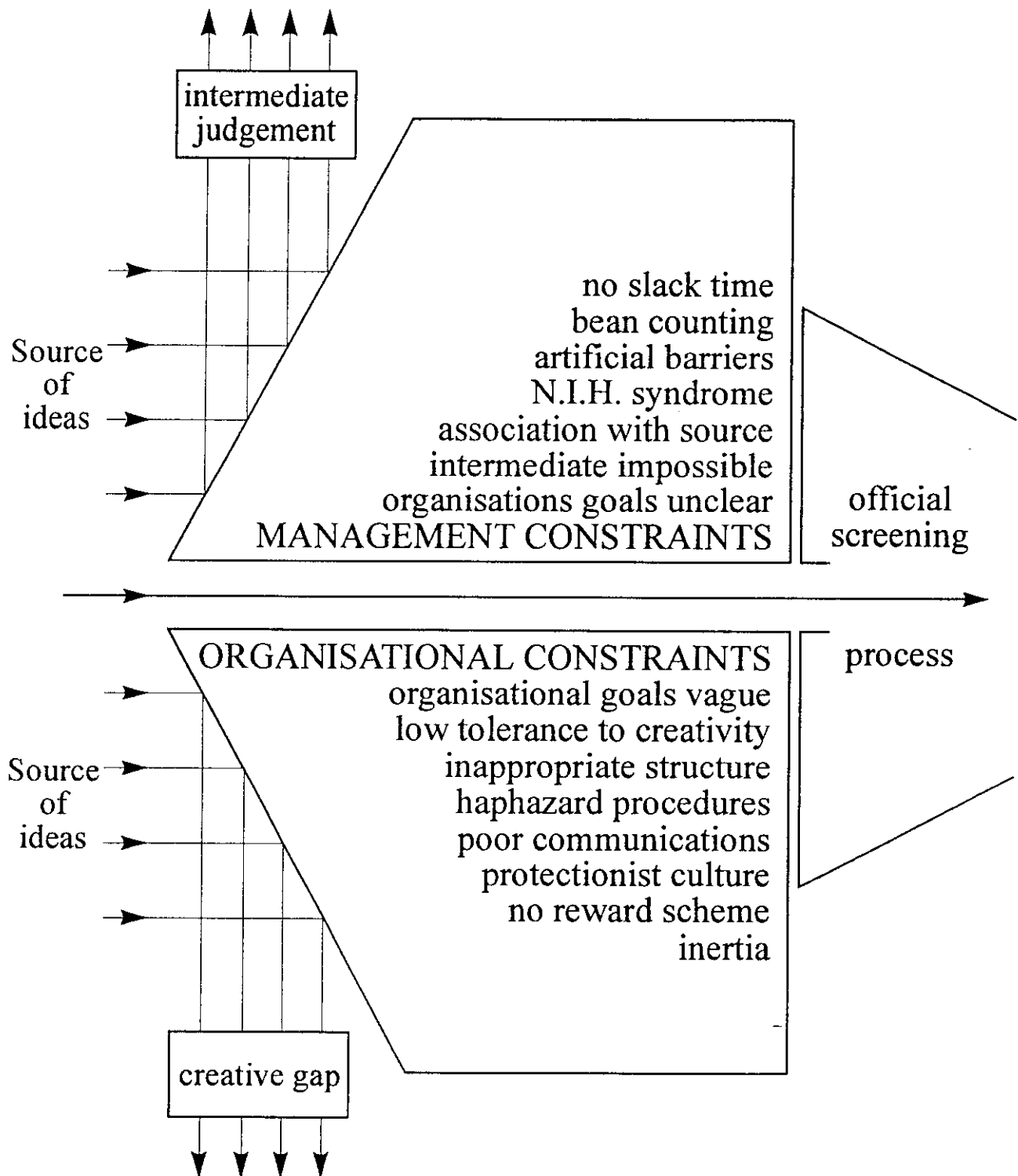


Figure 4 : The Bridging Functions of the Creative Cell

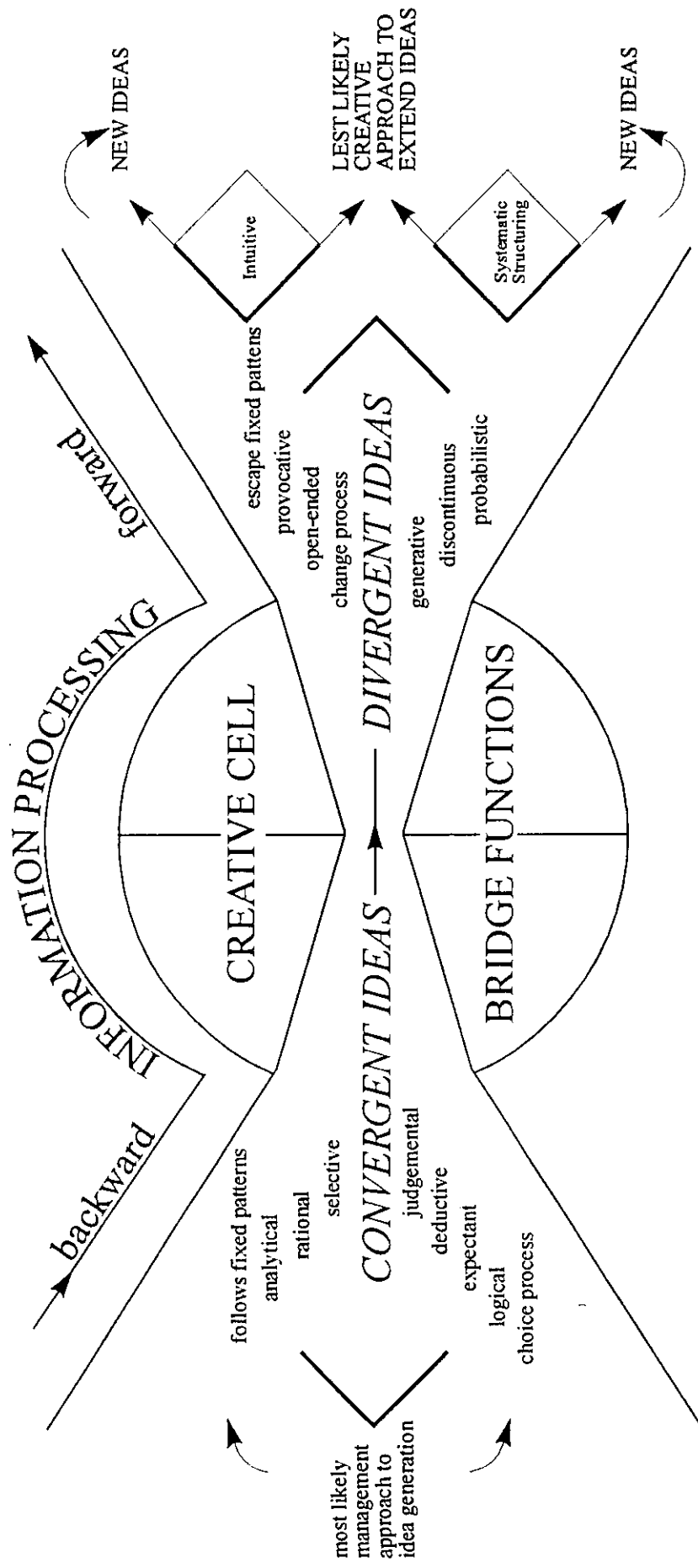


Figure 5 : The Cross-Functional Creative Cell

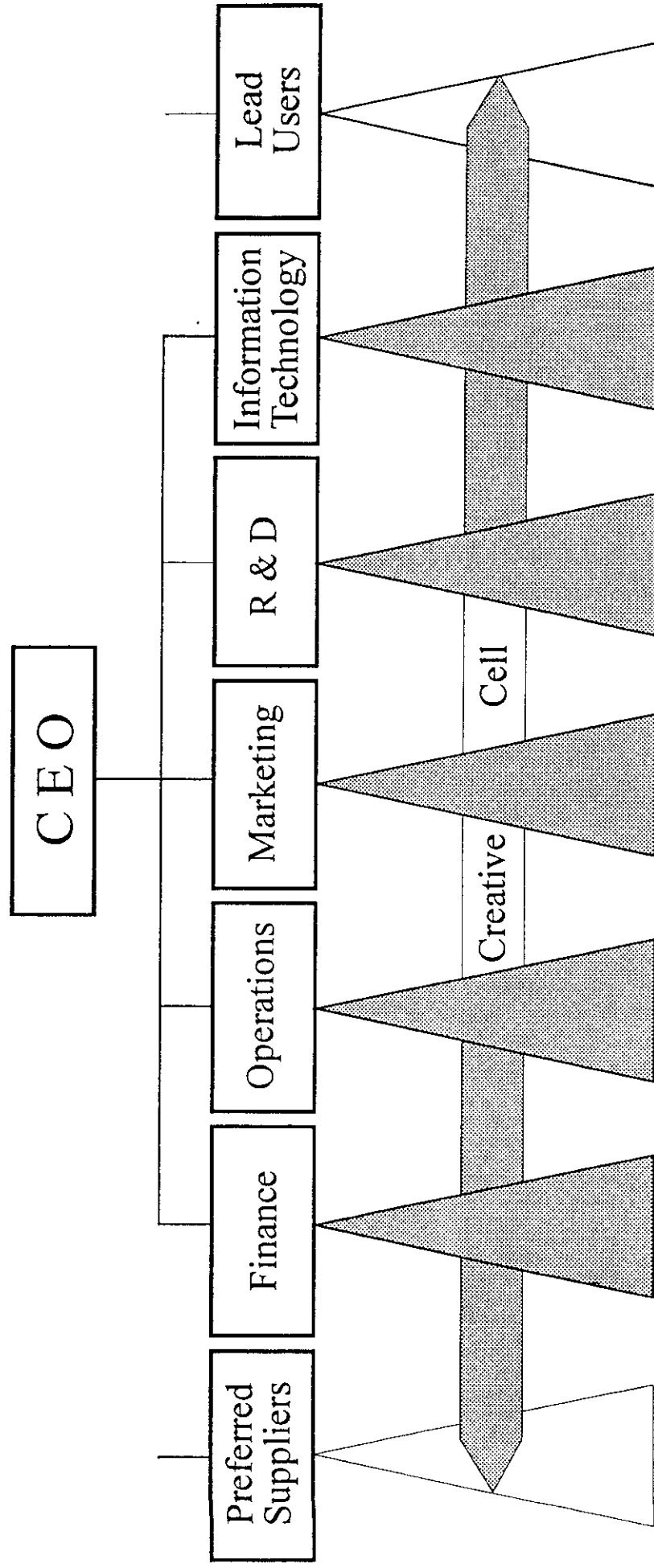
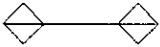
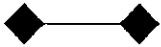
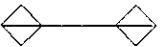

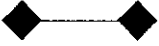



Table 1 : The Locus of Idea Initiation and Change Factors

LOCUS OF INNOVATION			CHANGE FACTORS
Organisation		user	The unexpected The incongruity
Organisation		user	Demographics Change in perception
Organisation		Direct competition	Industry / market structures
Organisation		New / Emerging competition	Process need New knowledge
Legend:  Proactive Strategy  Reactive Strategy			