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LEARNING-BASED STRATEGY, TOWARD A NEW MODEL OF STRATEGIC BEHAVIOUR

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INTRODUCTION

New theoretical models and approaches appear regularly in strategic management literature. Each of these "schools" tries to differentiate from the preceding by advocating a better understanding of the strategic processes operating in companies. These last years, a new dimension appeared in the strategic game: the concept of learning. Nevertheless, no links are made between this new concept and the existing theories in strategic management.

In this paper, after a brief definition of learning as presented in the literature those last ten years, we try to link this concept with the existing schools in strategic management and derive a model that would integrate at the same time the different schools and this new concept.

1. Learning : a definition

More and more researchers have paid attention to the importance of knowledge and knowledge management in the firm's competitive advantage creation (Nelson & Winter, 1982; Winter, 1987 ; Grant, 1996a, 1996b) and this field is now the base of many theoretical developments (see for example the 1996 Winter Special Issue of *Strategic Management Journal*). Policy makers are also concerned with the promotion of learning organizations (OECD, 1997).

Harvey and Denton (1999 : 897) have identified six antecedents that explain the new focus on organizational learning :
- the shift in the importance of production factors from capital to labor to intellectual labor;
- the pace of change in the business environment;
- widespread acceptance of knowledge as a prime source of competitive advantage ;
- the greater demands being placed on all businesses by customers ;
- increasing dissatisfaction with the traditional management paradigm (top-down command-and-control) ;
- the intensely competitive nature of global business.

As firms have to adapt radically and to compete on a global scale, competitiveness is related to the firm's ability to learn faster than its competitors (Easterby-Smith et al., 1998).

In the past people thought that the diverse things on earth were all different and had all their own specificities, and then discovered that they were constituted of a small number of primary elements that were themselves made of primary particles, researchers also seem to realize that the different products or services a firm can offer are based on several core competencies which have knowledge as their common element. The common denominator of firms would thus be knowledge. Based on this statement, the efficiency of a firm will come from the way it creates knowledge, manages it, and learns.

But, as pointed out by Schein (1997), « we have neither a very good understanding of the word organizational nor the word learning ». As a result, in the context of innovation, the literature on learning presents different aspects or dimensions.

As such, learning is a meta-construct involving several sub-constructs, defined in a very abstract manner. Despite accurate definition of learning provides satisfaction feelings, until they are not related to clear organizational factors, it is not easy to operationalize, to replicate and thus to help theory building.

Based on the literature, we present three clearly different definitions for knowledge management, organizational learning and learning organization. Contrary to some authors (Nevis et al., 1995 : 73), who define organizational learning as "the capacity or processes within an organization to maintain or improve performance based on experience", in our definitions, organizational learning and knowledge management are not necessarily related to performance.

1.1. Knowledge Management

We define knowledge management as the process of managing knowledge. As such, we limit knowledge management to the activities that do not add value to knowledge. Knowledge management is concerned with the acquisition and communication of knowledge. Knowledge management is at the basis of organizational learning.

1.2. Organizational learning and its components

Researchers admit that knowledge is created by individuals (Grant, 1996a ; Spender, 1996) and thus exists outside of the organization. An organization learns through its individuals (Argyris and Schon, 1978 ; Huber, 1991 ; Grant, 1996b ; Spender, 1996).

Kim (1993 ; p.44) gives a clear example of that :

> " Imagine an organization in which all the physical records disintegrate overnight. Suddenly, there are no reports, no computer files, no employee record sheets, no operating manuals, no calendars, - all that remain are the people, buildings, capital equipment, raw materials, and inventory. Now imagine an organization where all the people simply quit showing up for work. New people, who are similar in many ways to the former workers but have no familiarity with that particular organization, come to work instead. Which of these two organizations will be easier to rebuild to its former status ? "

Nevertheless, if knowledge was only in individual, firms could change only through employee turnover (Kogut and Zander, 1992). This implies that knowledge is transformed through its passage in an organization. Organizational learning is more than the sum of learning by individuals' members of the organization (McKee, 1992).

Grant (1996b) recognizes that there are many types of knowledge relevant for the firm. Four critical characteristics are suggested :

- *Transferability* : transferability between firms and inside the firm is an important issue regarding knowledge. It relates to the process of knowledge diffusion. As such, the main distinction is made between tacit (or subjective, implicit, personal, knowing-how) and explicit (objective, prepositional, knowing-about) knowledge (Polanyi, 1967; Nelson and Winter, 1982; Kogut and Zander, 1992). Explicit knowledge is revealed by its communication whereas tacit knowledge is revealed through its application. Tacit knowledge cannot be bought "on-the-shelves". For Nonaka (1994:14), "organizational knowledge is created through a continuous dialogue between tacit and explicit knowledge" at the different intra and extra-organizational levels, i.e. the spiral of organizational knowledge creation, what Cook and Brown (1999) refer as "organizational knowing".

Knowledge transfers will be more difficult if knowledge is tacit, complex and systemic (Garud and Nayyar, 1994; Winter, 1987). Transferability of tacit knowledge is associated with the concepts of "learning-by" (doing, using...).

- *Aggregation* : the transferability efficiency of knowledge depends on its potential for aggregation (Grant, 1996b). The notion of absorptive capacity has been developed (Cohen and Levinthal, 1990). It refers to the capacity to add new knowledge to existing knowledge,

i.e. to recognize, assimilate and apply it. It is close to the idea of transformative capacity used in core competencies management (Garud and Nayyar, 1994). Aggregation will depend on the degree of transferability of knowledge.

Concerning tacit knowledge, because of its informal nature, managers have to overcome the "Daphne-dilemma" (Van Aken and Weggeman, 2000) : too little management effort may lead to an under-exploitation of tacit knowledge but too much effort may destroy its informal nature and thus part of its value.

- *Appropriability* : refers to the ability of the owner of a resource to receive a return equal to the value created by that resource (Grant, 1996b ; Teece, 1987). As such, tacit knowledge is difficult to appropriate because its transferability is difficult. Nevertheless, as explicit knowledge may be available to everyone, except through patenting, the ownership may be discussed and as a consequence its appropriability.

- *Specialization* : Efficiency in knowledge requires specialization. As presented by Grant (1996b, p.112): "Jacks-of-all-trades are masters-of-none". Investing in knowledge depth (through technical specialists) is also important for the adoption of innovations (Dewar and Dutton, 1986). An increase in depth of knowledge implies reduction in breadth (Grant, 1996a).

- *Knowledge requirements of production* : in line with our view, a knowledge theory must have the assumption that knowledge is the main input and source of value.

In the same vein, Huber (1991) distinguished four constructs : Knowledge acquisition, Information distribution, Information interpretation and Organizational memory. Also Nevis et al.(1995) derive a three-stage model: knowledge acquisition, knowledge sharing and knowledge utilization. From the knowledge management processes, the assimilation process or organizational memory seems to be the most difficult to apprehend (Huber, 1991 ; Nevis et al., 1995).

From the presentation below, it is clear that organizational learning is a process or a set of organizational processes. "If we conceptualize each component of knowledge as a stock, then, the underlying learning processes that create them represent flows" (Garud, 1996 ; 5). The

different flows are differentiated by their occurrence levels (Argyris and Schön, 1978 ; Senge, 1990 ; McKee, 1992) :

- *Single-loop (or corrective) learning* : it refers to the modification in the products without any other influences on the organization. Single-loop learning is related to incremental innovations.

- *Double-loop (or generative) learning* : double-loop learning changes the technologies and norms in the organization. Double-loop learning is related to radical innovations.

- *Meta-learning* : whereas single- and double-loop learning are related to one activity or one task in the organization, meta-learning is about institutionalizing innovations in organizations (McKee, 1992). It is the capacity to generalize sub-levels learning to the organization. Organizations play a role in articulating and amplifying knowledge (Nonaka, 1994).

Benefits and side effects of learning processes are unclear. One the one hand, competency traps may occur because "prior innovative successes reinforce established routines even as the technological frontier shifts to new areas" (Sorensen and Stuart, 2000, p.87). As their experience grows, so do their competences and they become less able to assimilate and exploit new information. Accumulation of knowledge through experience, or learning-by-doing, may lead to failing-by-knowing. This myopia of learning (Levinthal and March, 1993) may see technological leaders replaced by start-ups (Abernathy and Utterback, 1978).

On the other hand, Myers and Marquis (1996) found that small firms with less change in their successive products in term of technology and market perform better than firms emphasizing more diversity, thus advocating for strategic focus. Zirger and Maidique (1990) argued also that firms must choose their development projects that use the existing organizational, marketing and technological competences.

Based on the literature, we define organizational learning as the organizational processes aimed at adding value to the knowledge acquired and communicated throughout the firm. As such, organizational learning processes encompass the acceptance and the assimilation of knowledge.

1.3. Learning organization

Senge (1990 : 3) defines a learning organization one « where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together ».

Grounded on previous works (e.g. Day, 1994 ; Senge, 1990 ; Argyris and Schön, 1978), Sinkula et al. (1997) derive the core components of a learning orientation :

- *Commitment to learning* : simply stated, if an organization does not believe in learning, learning may not occur.

- *Open-mindedness* : related to the idea of competency trap or core rigidities, an organization must be able to challenge the existing situations, or unlearn (Nystrom and Starbuck, 1984).

- *Shared vision* : shared vision influence the direction, or focus of learning.

For the authors, these conditions are necessary for learning to occur. In the same vein, Nevis et al. (1995) define 10 'facilitating factors', involving different organizational characteristics.

We define a learning organization as an organization that is committed to learning. By committed, we mean that the organization is ready to change the way it does things by combining existing knowledge or incorporating new ones. Thus, organizational learning processes are neither necessary nor sufficient conditions for a learning organization. But, the existence of organizational learning processes will help the organization to learn.

2. Learning, a pervasive notion in strategic management

Strategic management and strategic analysis are research areas that date back to the development of industrial companies at the end of the 20th century (Taylor, 1911 ; Barnard, 1937 ; Fayol, 1949). This field definitely took an importance in the 1960th, under the "General Policy" appellation, mainly due to the work of the Harvard School (Learned et al., 1965). Since that time, a huge amount of work tried to draw the boundaries of strategic analysis and strategic decision in a search for a better performance of the firm. Those studies differ on their theoretical foundations, their contents and referring contexts. If some authors (Mintzberg et

al., 1999) distinguish up to ten different schools, it is possible to regroup them into three different approaches, presented below.

2.1. The rationalist approach

Firms, in a situation of competition, have to cope with a very large number of daily arrivals of information on themselves and on their near or far environment. The first idea developed in a rationalist approach was to help companies in classifying all this information. Selznick (1957) indicates that, in the definition of the firm's mission, the managers must take into account the internal state of policy (competences that exist inside the organization) and the external waiting that determine what must be achieved for the firm to survive.

Following that, the most diffused framework (Learned et al., 1965), called the SWOT model (Strengths, Weaknesses, Opportunities and Threats) or LCAG model (initiated by the four authors), aims at practically classifying the different information sources based on the fact that they represent on the one hand an opportunity or a threat from the environment and, on the other hand, a strength or weakness of the company. Thus the strategic objective is to adapt the strengths and weaknesses of the company to the opportunities and threats of the environment. The optic is to adapt the strategy depending on the external factors.

Most of the strategic tools developed between 1960 and 1985 are based on this logic. They propose an analytical examination of the firm through its products portfolio (e.g. BCG, 1970; ADL, 1980), or through the structure of its value chain (Porter, 1985). Regarding the environment, they behave in the same framework through the study of the strategic groups, competitive forces (Porter, 1985) or the nature of the competitive advantages in its industry (BCG, 1981).

The strategic choices derive from this analysis phase. They are made business unit by business unit based on the adequation between the firm resources and the exigencies of the environment. An adjustment may occur during the implementation (feed-back loops). Despite the clear separation between the three phases, analysis, decision and implementation, there is room for a possible learning from the organization.

The rationalist school is today criticized. The main critic comes effectively from this dichotomy between strategic analyses and implementation (Kay, 1995 : 264). Practically, it is

difficult or impossible to differentiate the two phases. A firm being a system that itself belongs to a larger system (the environment), dissociation is almost impossible.

Furthermore, some authors put the argument that the implemented strategy has often nothing in common with the decisions coming from the analysis. It is specifically the case with the emerging strategy school.

2.2. The emerging strategy school

The main idea defended by this school of thought is that the realized strategy is most often different from the chosen strategy. The first author to develop this idea is Lindblom (1959). Strategy is presented as the 'muddling through' science. The environmental constraints make the rational approach impossible, this idea being in line with the limited rationality concept proposed first by Simon (1947) and after by Cyert & March (1963).

The most advanced thinking on the consequences of this idea was made by Mintzberg (1976, 1978). He develops the notions of deliberate strategy and emerging strategy. The first corresponds to the complete implementation of the strategic decisions taken by the managers. The second arises when 'the form that appears was not expressively wanted' (Mintzberg, 1994 : 40). Strategy is defined as a pattern in a stream of significant decisions (Mintzberg, 1976).

Mintzberg adds that these two types of strategies are not mutually exclusive. However, for the authors, the fact that the realized strategy corresponds to the intended strategy underlie the idea that there is no learning during its implementation. On the contrary, if the realized strategy is only constituted by emerging strategies, a problem occurs in terms of control from the managers. The effectively implemented strategy is thus a result of organizational moves between control and learning.

The vision of this school is easily defendable in the sense that it seems to be closer to the day-to-day reality of companies. In fact, it is mainly through in-depth in vivo longitudinal case studies that Mintzberg built his argumentation. Nevertheless, criticisms could be made. In fact, if we push the idea to its end, which means that emerging strategies are always taking the lead on intended strategies, that strategy is only an a posteriori reconstruction of diverse

actions, then the necessity of defining a strategy, of analyzing the firm's capabilities and its environment disappears. Strategy disappears in action.

2.3. The resource-based approach[1]

A conceptual turnaround has been observed in the last decade with the resource-based approach. Opportunities coming from the environment are no more the starting point of the strategic process. Resources, capabilities and competences owned by the company are the main source of competitive advantage. The firm is apprehended more as a reservoir of tangible and intangible resources than as a portfolio of product/market couples.

Hamel & Prahalad (1990) have enriched the concept first presented by Wernerfeld (1984) in asserting that a firm's long-term competitiveness originates from its capability in implementing the core competencies to generate unforeseen new products. These authors propose an approach where a continuous flow of new products and services comes from the deployment, and the orchestrated exploitation of core competencies. These competencies are defined as the combination of technologies and production abilities present in all firm activities. It is probably with this last point, that the contribution of Hamel & Prahalad is most important. In stressing the *under-productivity* of firms organized along isolated SBUs, these authors have emphasized the interest of lateral transfers. In subsequent articles, Hamel & Prahalad (1993) and Prahalad (1993) explain the differences in performance between firms because of their ability to leverage their resources.

Grant (1991) or Stalk, Evans & Shulman (1992) defend the idea of a competition based on capabilities. These capabilities are defined as the organizational processes that allow firms to offer a superior value to customers; they are an assembly of resources within the context of organizational routines. The analysis of the firm's base of resources and the evaluation of its capabilities are for those authors the first stage of the strategic process. The chosen strategy is the one that allows the best exploitation (the best return) of resources and capabilities considering the external opportunities. A synthesis of the authors' contributions leads to retain three main characteristics of a resource-based strategy (Jolly & Thérin, 1996).

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[1] This part is based on Jolly & Thérin (1996), 'Technology Strategy : towards a resource-based approach », C.M.T. n°16, Grenoble Graduate School of Business.

(i) *Competencies (or capabilities) are a combination of resources (technological or not)* : The definitions presented in the preceding paragraph lean on the concepts of competence, capability and resources. The richness of the vocabulary used in those writings leads to two questions :

1. Is it only the fruit of speech turgidity ? Are the three concepts synonymous or are they representative of different conceptual dimensions ?

2. What role does technology play in this context ? What is the nature of the link between competencies and technologies ? Is it possible to mix them or in what way are they different ?

There is a relative consensus between authors not to mix resources, capabilities and competencies. They agree on differentiating at least between two levels: the resources (financial, physical, human, organizational...) being only a first level. Technology, at this level, is only one resource among others. It's the way by which these resources are assembled, combined for the execution of an activity that creates the difference amongst firms. Capabilities and competencies have common characteristics that make that these two concepts overlap: they are built over time in a small number of fields where the firm may dominate, they are rooted in as much explicit knowledge as in tacit know-how, they represent firm-specific assets, they are diffused pervasively in the entire firm, they exist within several product lines (or SBU) and finally, they allow access to multiple markets.

Some authors give a strong technological coloration to competencies (Hamel & Prahalad, 1993). Others (Grant, 1991 ; Stalk et al., 1992) adopt a larger view where technology is only one of the resource categories mixed in organizational processes. Hamel & Prahalad (1990) define core competencies as « the collective learning in the organization, especially how to co-ordinate diverse production skills and integrate multiple streams of technology ». These are, for example, the four core competencies held by Canon (fine optics, precision mechanics, electronics and fine chemicals) that allowed this firm to challenge Xerox in photocopying and more broadly to offer constantly renewed products through its different business entities by combining those competencies (Ghoshal & Ackenusen, 1992). At this point, everything depends on the definition of the scope covered by technology. Thus, if production abilities are considered as a technology, core competencies will then only be technological. Prahalad (1993) goes further and defines a core competence as the combination of technologies, administrative processes and collective learning. The administrative processes of particular

interest are those that allow the creation of relationships through the business units and through the functions. For Prahalad : « The concept of core competencies tends to be confused with core technologies and/or capabilities. Core technologies are a component part of core competencies. Core competence results when firms learn to harmonize multiple technologies » (p. 45). Despite this remark, the definition of the concept of core competence given by these authors is strongly marked with technology. In fact, the examples[2] cited come mainly from firms engaged in technological competitive games.

(ii) *The definition and the management of strategy are built on the creation and exploitation of competencies that, in turns, lead to sustainable competitive advantages* : Inspite of their different views, the link between the approaches presented above is the emphasis put on the deployment of rare resources and core competencies of the firm. The objective is no longer only to adapt to the environmental forces but also to use the firm's assets to create new products and services and to generate new markets. The strategy is thus to identify, develop and exploit the resources and competencies - difficult to copy - in order to generate sustainable competitive advantages in the business units along their respective markets (in terms of value as perceived by clients and/or cost). The competition in a specific industry should not be considered only from the final service and product point of view. It has also to be gauged in respect to the underlying resources, capabilities and competencies of the firms.

(iii) *Resources and competencies are a collective property of the firm. Transcending the limits of the SBU allows creating lateral transfers. New products originate from combining different competencies* : Champions of resource-based strategy do not consider resources and competencies as the exclusive property of an independent business unit but as the collective property of the entire firm. If a business unit keeps the use of a resource or competence for its sole purpose, then these are *under-exploited* since the other business units have no access to them. To consider resources and competencies as a collective ownership allows each business unit to have access to the large technological reservoir present in the entire firm. Sharing resources and competencies in the organization is not possible without transcending the limits of the business unit and the traditional functions; the classical vertical vision of hierarchical superiority of the corporate top management on business units must be completed by horizontal links. A transverse organizational architecture is required to: have a general point

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[2]   The examples come mainly from the Asian area (Honda, Canon, Komatsu, Nec, Casio...) as well as from Western countries (3M, Black & Decker, Wal Mart, Vickers, Federal Express, British Airways...).

of view on all the resources and competencies of the group in order to identify the interconnection opportunities between business units; to advise the corporate top management in its mission of redistribution of resources and competencies through the business units and correlated issues of arbitration; and to organize the transfers from an SBU to an other.

Today, some authors (Leonard-Barton, 1997) have made some criticisms about the fact that if a company tends to focus only on a core of few competences, a risk exists that these competences transform into core rigidities. As a consequence, it is necessary to see core competences strategy as a living process, with old competences disappearing and new ones arising. Core competences have to be nurtured by internal and external knowledge.

2.4. A common link for the different schools : learning

Whatever the school of thought analyzed, we realize that a very important place is allowed for a form of organizational learning as a fully part of firm's strategy.

For the rationalist school, learning occurs mainly through the presence of a possible retroaction (feed-back loop) following the implementation of the strategy. The possibility to modify the strategy during its implementation to take into account possible internal or external constraints or opportunities is the main manifest of the underlying presence of learning.

Thus, Andrews (1987) states that strategy is the result of a continuous process of strategic management. The process is not unidirectional. A room exists for change during the strategic process.

For the emerging strategy school, learning is obvious. The main foundation of this school is that, at any given point of the strategic process, emerging strategies may occur to modify the process. This notion of emerging strategies is very close to the idea of new knowledge coming into the firm to nurture its strategic process, which is learning.

Finally, regarding the resource-based approach, as presented at part 1.1.3, this theory, at its primary vision, does not incorporate learning. Even if the seminal article of Prahalad and Hamel (1990) defines core competencies as the collective learning in the organization, the core idea is to close or restrain the strategic process around a few core competencies. But

rapidly, authors (Leonard-Barton, 1997) have argued that it could be dangerous. Nevertheless, this theory seems to be very helpful if it integrates the idea of a continuous process of regeneration of the firm's core competencies through internal and external contributions. Besides, if we study the companies that are at the basis of the development of this corpus, we clearly see that this continuous process of knowledge integration occurred. For one of the more cited examples, Canon, the competencies necessary to build the copy machine that challenged Xerox monopoly in the 1970's, are found in a 35 years process of construction involving R&D, incremental process and product innovations and trial-and-error processes (Kaizen). Once again, that describes in a clear way, what will later be referred to as organizational learning.

3. An integrative framework : the learning-based strategy

This presentation of the main theoretical streams surrounding strategic management allows us to draw several comments related to our research question:
Learning is pervasive in all the theories presented

All the different streams benefit from each other. From a temporal approach, each new theory has taken into account the previous one. In that sense, it is possible to get closer to the strategic management process reality to develop a model that reconciles the different theories by incorporating external factors, internal factors around resources and core competences surrounded by a constant process of renewal (Hamel, 2000).

Our model is integrative in the sense that:

(a) as for the rationalist strategy, this model recognizes the importance of and uses the inputs coming from the environment;

(b) as for the emerging strategy, a systematic and constant return journey between the firm's resources and the environment is necessary to ensure a perfect adjustment between the strategy of the firm and its environment.

(c) as for the resource-based strategy, the main point of departure of product development and exploitation is the core resources or competencies of the firm.
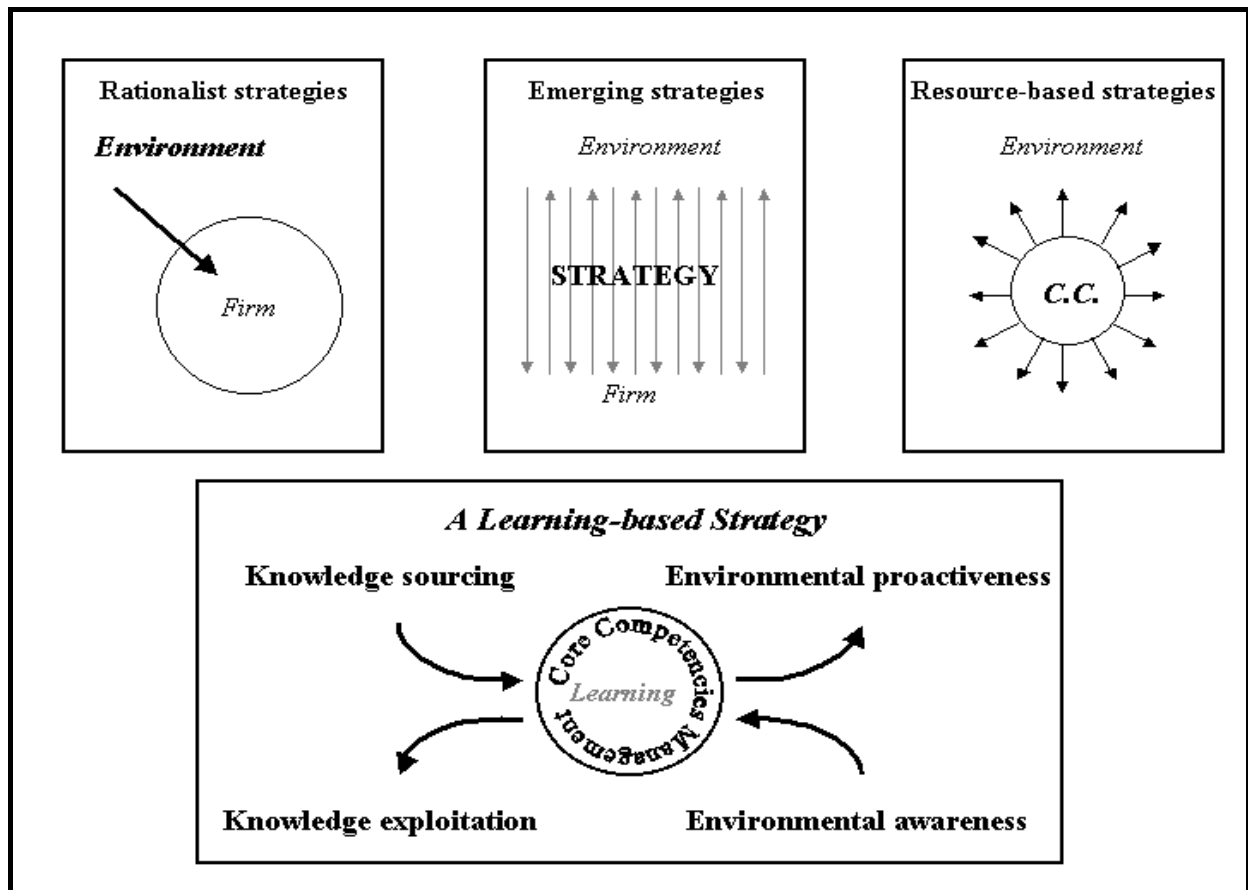
Figure 1 : Learning-based strategy: an integrative model of strategic process

Compared to the existing streams, this model is different in the sense that:

(a) compared to the rationalist approach, it acknowledges the necessity to use the core resources or competencies of the firm as the main driver of new product development and product innovation.

(b) compared to the emerging strategy, the prevalence of a formal strategic process on a fuzzy one is emphasized.

(c) compared to the resource-based strategy, first, it recognizes that core competencies may not be considered as a fixed and rigid set of assets but as on-going portfolio of resources nourished by internal and external knowledge inputs.

3.1. The Inputs

Knowledge sourcing : To nurture its core competencies and its strategic process, firms need to source new knowledge (Ribbens, 1997). Of course, as gaps may exist between what a firm must do to compete and what it can do (strategic gap), a knowledge gap may occur between what the firm must know to implement its strategy and what it actually does know (Zack,

1999). As such, it is important for the company to multiply the sources of knowledge. Theses sources may come from the different partnerships and alliances a firm may entertain with research labs, customers, suppliers or even competitors. However, some authors argue that, especially for small firms, too many partnerships may create a dependency on the partners as knowledge sources (Miles et al., 1999). A second source of knowledge will come from the mergers and acquisitions firms will operate. Finally, knowledge sourcing may come also from the participation to trade shows, conferences, and a careful intelligence process.

Environmental awareness : Environmental awareness relates to the business intelligence or environmental scanning processes of the firm. By being aware of the activities of the immediate and further actors surrounding the company, the managers will be able to orientate the sourcing of knowledge, the reinforcement of existing competences or the development of new ones and thus the deployment of new products based on those competencies.

3.2. The Outputs

Knowledge exploitation : Knowledge exploitation will of course be done through the core competencies. Beyond that, the knowledge gained will be used to format the products, choose the markets they will compete in, and the competitive advantage developed.

Environmental proactiveness : An efficient process of knowledge acquisition and environmental awareness allows the firm to position its products in innovative manners and beyond its competitors.

CONCLUSION AND FURTHER RESEARCH

This paper tries to integrate the different streams of strategic management with the theoretical development of knowledge-based theories. As such, we hypothesize that a learning-based strategy is a good descriptor of the strategic processes of the firm and a better behavior for companies to adopt if they want to overcome competition. Of course, those statements need to be validated and refined through case studies and/or quantitative studies.

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