

ABSORPTIVE CAPACITY AND KNOWLEDGE TRANSFER PROPENSITY : TOWARDS THE OBTAINING OF A COMPETITIVE ADVANTAGE.

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ABSTRACT.

Absorptive capacity and knowledge transfer were used by many different authors to explain organizational events. Firms are increasingly relying on knowledge acquired from other firms to facilitate the development of their own capabilities. The importance of absorptive capacity keeps on growing since the first paper of Cohen and Levinthal (1990). Moreover knowledge transfer meets the same development accompanied by the increasing importance of knowledge management.

The goal of this paper is to link absorptive capacity and knowledge transfer propensity in order to highlight the role of these concepts in the obtaining of a competitive advantage. In fact, we consider absorptive capacity and knowledge transfer propensity like dynamic capabilities, following Zahra and George (2002) definition: “we recognize absorptive capacity as a dynamic capacity that influences the nature and sustainability of a firm’s competitive advantage”. This perspective broadens absorptive capacity influence in the obtaining of a competitive advantage in presenting its antecedents and its components. Then, we define knowledge transfer propensity in organizational terms linking the existence of social networks, the impact and use of information technology (IT) tools and knowledge transfer.

Lastly, we posit that a good absorptive capacity linked with a strong knowledge transfer propensity can be responsible for the obtention of a competitive advantage based on three points: the creation of new knowledge (Nonaka and Takeuchi, 1995), the development of innovation and a better strategic flexibility. These outcomes are central in knowledge management, innovation, evolution of firms and dynamic capabilities literature.

Academic Track

INTRODUCTION.

In recent years absorptive capacity and knowledge transfer were used by many different authors to explain organizational events. "Firms are increasingly relying on knowledge acquired from other firms to facilitate the development of their own capabilities" (Lane and Lubatkin, 1998). The importance of absorptive capacity keeps on growing since the first paper of Cohen and Levinthal (1990). Moreover knowledge transfer meets the same development accompanied by the increasing importance of knowledge management.

The goal of this paper is to link absorptive capacity and the obtaining of a competitive advantage taking into consideration knowledge transfer propensity. We use the resource-based view of the firm (Wernerfelt, 1984; Grant, 1991; Amit and Schoemaker, 1993). It allows to consider absorptive capacity and knowledge transfer propensity like strategic assets (Amit and Schoemaker, 1993).

First, from a literature point of view, we recognise absorptive capacity like a dynamic capability in line with Zahra and George (2002) definition : "we recognize absorptive capacity as a dynamic capacity that influences the nature and sustainability of a firm's competitive advantage". Second, in my point of view, knowledge transfer propensity is defined in organizational terms linking the existence of social networks like communities of practice, the impact and use of information technology (IT) tools and knowledge transfer. Third, we posit that a good absorptive capacity linked with a strong knowledge transfer propensity can be conducive for the obtaining of a competitive advantage based on three critical issues: the creation of new knowledge (Nonaka et Takeuchi, 1995), the development of innovation and a better strategic flexibility. These outcomes are central in knowledge management, innovation, evolution of firms and dynamic capabilities literature.

1. LITERATURE REVIEW ON ABSORPTIVE CAPACITY AND KNOWLEDGE TRANSFER.

1.1. Definition of absorptive capacity.

Past research highlights a consensus in the definition of absorptive capacity, and also concerning its roles and outcomes. Cohen and Levinthal (1990) definition of absorptive capacity is the first and the more recognized one. They define it as "the ability to value new external information, to assimilate it and to apply it to commercial ends". Thus absorptive capacity contends three dimensions: the ability to recognize and value new external knowledge, the ability to assimilate it, and the ability to commercialise it. Among these authors, absorptive capacity depends on the prior knowledge level of the firm, "and it evolves in a history-dependent fashion as the firm accumulated (or failed to accumulate) knowledge critical to its later growth".

Recent research by Zahra and George (2002) reconceptualizes absorptive capacity keeping its original definition. However, they identify four distinct dimensions to absorptive capacity. They stressed the importance of these dimensions considering them as complementary capabilities that compose a firm's absorptive capacity: acquisition, assimilation, transformation and exploitation. We retain these dimensions because we think that the "transformation" phase, not really described by Cohen and Levinthal (1990), is really important between the "assimilation" and the "exploitation" processes. We will detailed it below.

Thus, we keep Cohen and Levinthal's definition of absorptive capacity because it is oriented towards a commercial end partly, but we integrate the third dimension (transformation) considered by Zahra and George (2002), because it highlights the process of knowledge creation that is central to the obtention of a competitive advantage.

1.2 Dimensions of absorptive capacity.

We chose to use absorptive capacity because we think that it is an important theoretical and practical construct. Mowery, Oxley and Silverman's (1996) analysis provides some support for the role of absorptive capacity in the acquisition of capabilities. Absorptive capacity has four dimensions: acquisition, assimilation, transformation and exploitation. These dimensions are identified like dynamic capabilities that are idiosyncratic for a firm. In fact, there is no one acquisition method for instance, but global components for each dimension that allow a firm to obtain or sustain its competitive advantage.

Acquisition.

This process refers to the Cohen and Levinthal one in recognizing and valuing new external knowledge. It deals with several components redefined by Zahra and George (2002) : prior investments, prior knowledge, intensity, speed and direction. The constitution of these components are described in table 1 at the end of this part. We follow several critical issues highlighted by Zahra and George (2002), but we adapt some dimensions based on our perception and on our measures. In accordance with these authors we keep prior investment and prior knowledge, but we pool intensity and speed integrating them in an other component, "commitment to gather knowledge". We do not use direction because it does not constitute an important factor in building a scale of absorptive capacity. "The ability to evaluate and utilize outside knowledge is largely a function of the level of prior related knowledge. [...] Prior knowledge confers an ability to recognize the value of new information, to assimilate it, and to apply it to commercial ends" (Cohen and Levinthal, 1990; Dyer and Singh, 1998). "All possible resources that a firm might possess, its knowledge base has perhaps the greatest ability to serve as a source of competitive advantage" (Dierickx and Cool, 1989; Gupta and Govindarajan, 2000).

Prior investments deal with the efforts of the firm to increase its knowledge. It represents all the different means and ways of learning used by a company. In building a scale of absorptive capacity we argue that risk tolerance is central to the acquisition of new external information. Risk tolerance is strongly linked to prior investments. We think that efficiency in prior investments is dependent on risk tolerance of the firm. In fact, an organization that promotes the acquisition of new external knowledge has, normally, a level of risk tolerance that allow employees to take effective actions without caring too much for their job. Furthermore an increasing number of firms reward, or at least encourage, the acquisition of new external knowledge, and they accept failure.

We consider prior knowledge as the level of expertise of the company at a time. Commitment to gather knowledge determines the performance of individuals in gathering knowledge. It takes into account the speed of information flow, the discover of new ideas in discussions and the observation quality of employees. These two factors can be linked in a knowledge sharing one where prior knowledge and commitment to gather knowledge will be both included. This dimension will allow us to know to take into consideration the flow of knowledge inside and outside the company, and to consider the acquisition phase as a process based on knowledge

sharing. We think that if employees are informed of firm transformations, it means if there is a deep information sharing, they will possess new knowledge naturally.

Assimilation.

Assimilation refers to the firm's routines and processes that allow it to analyse, process, interpret and understand the knowledge obtained from external sources (Szulanski, 1996, 2000 ; Kim, 1998 ; Zahra and George, 2002). In this perspective, employees have to understand and take advantage of external information in discovering new suppliers, new methods and techniques and new products and services. They have to understand, interpret and assimilate these knowledge spillovers. It is important to point out that the goal of this assimilation phase is to understand knowledge from external sources. This assimilation takes place using firm specific routines. In this objective of building a scale to measure absorptive capacity, this assimilation phase should focus on knowledge assimilation of employees when meeting competitors or partners. Several researches could help us in building a scale to measure the assimilation of knowledge by employees from external sources (Kogut, 1988; Powell et al., 1996 ; Lane and Lubatkin, 1998).

Transformation.

Transformation is the internalisation of new external information. "Transformation denotes a firm's capability to develop and refine the routines that facilitate combining existing knowledge and the newly acquired and assimilated knowledge" (Zahra and George, 2002).

This phase did not exist before its introduction by Zahra and George (2002). We think that this transformation phase is really important because it constitutes a strong link between assimilation and exploitation.

This phase refers to knowledge internalisation in order to codify a process, to question employees regards to the way of working in other companies, to improve processes through the discover of new solutions, to go faster or to adapt to environmental and technological evolutions. The transformation scale should measure employees involvement concerning the improvement of some processes or ways of doing in their company.

Exploitation.

This phase is probably the most important one for a company. In fact, considering Cohen and Levinthal definition, employees must be able to apply new learned external knowledge to commercial ends. Exploitation should not be neglected because it brings all the outcomes of knowledge capitalisation and interpretation efforts. "Exploitation as an organizational capability is based on the routines that allow firms to refine, extend, and leverage existing competencies or to create new ones by incorporating acquired and transformed knowledge into its operations" (Zahra and George, 2002). Routines that allow the implementation of new knowledge into products of services are very precious ones (Spender, 1996).

In the idea of building a global scale for absorptive capacity, it is impossible to use objective measures like patent number, arrival of new products or services, or the length of development of a product or service. Consequently, we look for another solution that will help us in measuring employees exploitation of new knowledge in their daily work. In this perspective, it could be interesting to choose several words that symbolize knowledge exploitation, and to ask employees to assess the importance of these words in their daily work.

Dimensions	Components	Themes	Citations
Acquisition	Prior investments	Risk tolerance	Cohen and Levinthal (1990); Song and Parry (1993); Mowery, Oxley and Silverman (1996); Kim (1998); Kavan, Saunders and Nelson (1999); Giroud (2000); Lahti and Beyerlein (2000); Zahra and George (2002)
		CEO support	
		Education	
		R&D investment	
	Prior knowledge	Knowledge repositories	Song and Parry (1993); Dyer (1996); Davenport, De Long and Beers (1998); Autio, Sapienza and Almeida (2000); Salk and Brannen (2000); Zahra and George (2002)
Knowledge intensity			
Experience of R&D department			
Last employee diploma			
Commitment to gather knowledge	Intensity	Cohen and Levinthal (1990); Mohr and Spekman (1994); Stork and Hill (2000); Szulanski (2000); Zahra and George (2002)	
	Observation		
	Speed		
Direction	Knowledge catalyst		
Assimilation	Understanding	Interpretation	Cohen and Levinthal (1990); Dodgson (1993); Szulanski (1996, 2000); Kim (1998); Lane and Lubatkin (1998); Gruenfeld, Martorana and Fan (2000)
		Comprehension	
		Formalisation	
Transformation	Internalisation	Recodification	Kim (1998); Gruenfeld, Martorana and Fan (2000); Salk and Brannen (2000)
		Questioning	
		Adaptability	
Exploitation	Use	Harvesting resources	Cohen and Levinthal (1990); Dodgson (1993); Szulanski (1996, 2000); Kim (1998); Lane and Lubatkin (1998); Gruenfeld, Martorana and Fan (2000)
	Implementation	Core competencies	

Table 1 : dimensions of absorptive capacity.

After the description of absorptive capacity, we argue that in order to obtain a competitive advantage, employees must have a propensity to transfer knowledge. “An organization’s absorptive capacity does not simply depend on the organization’s direct interface with the external environment. It also depends on transfers of knowledge across and within subunits” (Cohen And Levinthal, 1990). We assert that a good absorptive capacity can lead to the obtaining of a competitive advantage, if the organisation has a good knowledge transfer propensity.

1.3 Definition of knowledge transfer propensity.

Among Argote, Ingram, Levine and Moreland (2000), “organizations that are able to transfer knowledge effectively from one unit to another are more productive and more likely to survive than those that are less adept to knowledge transfer”. Many authors use the resource based view of the firm that argues resources and capacities transfer of a firm as a crucial antecedent in the obtaining of a sustainable competitive advantage (Barney, 1986; Grant, 1996; Argote and Ingram, 2000; Rolland, 2000). Thus, we argue that knowledge transfer propensity is a pre requisite in the obtaining of a competitive advantage through absorptive capacity. We consider knowledge transfer propensity as a moderator variable of the relation between absorptive capacity and the obtaining of a competitive advantage.

“Knowledge transfer can be defined as the integration, by individuals and groups in its own knowledge base, of new external knowledge that will modify its beliefs and routines and that can be used in commercial activities” (Rolland, 2000). In order to complete this definition, we take into consideration the work of Argote, Ingram, Levine and Moreland (2000) that define knowledge transfer as the process through which a unity (individual, group, department, organization) is affected by the experience of another. We keep these two definitions because they develop a dynamic and organizational aspect of knowledge transfer linking experience, organizational learning and network concept.

Knowledge transfer propensity represents the attitudes of employees towards knowledge transfer, and the use of tools available in a firm facilitating knowledge transfer. The goal of knowledge transfer propensity is to measure the predisposition of employees for knowledge transfer. Therefore it is capital to take into consideration the existence of social networks, communities of practice, transfer and sharing routines and the use of information technology tools that are indicators of knowledge transfer propensity.

1.4 Dimensions of knowledge transfer propensity.

In defining the dimensions of knowledge transfer propensity, we inspire our classifications from the study of Lahti and Beyerlein (2000) concerning knowledge transfer in consulting firms, and from the work of Seufert, von Krogh and Bach (1999) where they described a framework of knowledge networks including knowledge architecture (IT tools) and knowledge work processes (social interaction and communication processes). Among Matusik and Hill (1998), “firms use formal and informal integrating mechanisms in order to facilitate the transfer of existing knowledge to different areas of the firm”. We consider three dimensions in knowledge transfer propensity:

- The impact of IT tools on knowledge transfer propensity;
- The impact of social networks on knowledge transfer propensity;
- Inter-individual learning between colleagues.

The impact of information technology tools on knowledge transfer propensity.

“Whilst information technology should be seen as a necessary tool to knowledge transfer, new computing and telecommunications technologies allow organizations to communicate quickly and effectively with subsidiaries and business partners around the globe. [...] The advances in information technology have significantly influenced people’s ability to share and transfer information and knowledge, and also to reduce the costs and accelerate the process of transferring best practices” (Bender and Fish, 2000).

The proliferation and compulsory integration nowadays of information technology tools in companies, is not a widely “accepted” transformation for all employees. In fact, some employees are resistant to change, and it implies education, training and lost of time to adapt their working habits. However, the growing importance of IT tools change several work processes in companies. What could be interesting in building a scale of knowledge transfer propensity is to assess the perception of employees of these tools in terms of knowledge sharing (frequency, quantity, ease). Several researches could be of great help (Williams et Wilson, 1997; Warkentin et al., 1997; O’flaherty et Williams, 2000).

The impact of social networks on knowledge transfer propensity.

Social networks are the best way to transfer knowledge, and above all, tacit knowledge. In fact, social networks are composed of individuals that are pooled together towards a defined goal. Therefore, individuals cooperate, share knowledge without any restriction.

In this perspective, communities of practice seem to be a great way for transferring knowledge. Snyder and Wenger (2000) described the crucial role played by communities of practice (Brown and Duguid, 1991; Hildreth et al., 2000; Salk and Brannen, 2000; Stork and Hill, 2000) in firms, in terms of tacit knowledge transfer. Their constitution is free, nothing is formalised which accelerate the knowledge transfer process because there are no barriers between individuals. Everybody makes part of this kind of community because it is its own

will. Moreover Weick (1976) argued that informal organizational entities are more adaptive because they are less constrained by the organization system of which they are part. Therefore, communities of practice have two advantages: the ability to transfer knowledge easily because it is its own purpose, and the flexibility that characterised this group of individuals constituted on its own. “Communities of practice are seen as an effective and flexible mean of bringing both skills and expertise to specific problems and tasks” (Hildreth et al., 2000). The story telling described by Orr (1990) enabled copier technicians to exchange tacit knowledge and to find a solution to a problem. “Over time, this solution was passed around the technicians and became part of the stock of knowledge of the community” (Hildreth et al., 2000).

Finally, it is important to differentiate communities of practice and teams. In fact, in communities of practice, as members know each other better, have a deeper confidence in each other and trust each other, they gain legitimacy. This legitimacy gives every individual the willingness to go deeper in their relationships, to share more knowledge, best practices, to participate more to organizational events and success. We think that the existence of such groups of people constitute a wonderful support to knowledge transfer.

The existence of communities of practice in companies appear to be very important in measuring employees knowledge transfer propensity. This is based on several studies (Snyder et Wenger, 2000; Hildreth et al., 2000; Salk et Brannen, 2000).

Inter-individual learning between colleagues.

This dimension of knowledge transfer propensity is the last identified. It could be interesting to measure knowledge transfer between colleagues in terms of learning. “Transfer of knowledge occurs everyday in the work place, when juniors are taught the tricks-of-the-trade by their seniors” (Sveiby, 1996). Therefore, we try to assess the importance of colleagues in employees learning. This form of inter-individual learning is based mainly on Cohen and Levinthal (1990) and Szulanski (2000) articles.

Dimensions	Components	Themes	Citations
Impact of IT tools on knowledge transfer propensity	Perception of IT tools in terms of knowledge sharing	Knowledge sharing	King et Xia (1997); Warkentin, Sayeed and Hightower, (1997); Williams et Wilson, (1997); McDermott, (1999); Zach, (1999); Cross and Baird, (2000); Jarvenpaa and Staples, (2000); O'flaherty et Williams, (2000); Warren and Davies, (2000); Sargis, (2001)
	Perception of exchanges with IT tools in daily work	Social relations	
		Learning	
		Modernization	
Impact of social networks on knowledge transfer propensity	Existence of social networks that promote knowledge sharing	Informal discussions	Brown and Duguid, (1991); Hansen, Nohria and Tierney, (1999); Gupta and Govindarajan, (2000);Hildreth, Kimble and Wright, (2000); Salk and Brannen, (2000); Snyder and Wenger, (2000); Stork and Hill, (2000); Wonnacot, (2000)
		Communication quality	
	Existence of communities of practice	Communities of practice	
Inter-individual transfer between colleagues	Learning	Learning	Simonin, (1999)

Table 2 : dimensions of knowledge transfer propensity.

2. A MODEL OF ORGANIZATIONAL LEARNING THROUGH ABSORPTIVE CAPACITY AND KNOWLEDGE TRANSFER PROPENSITY : TOWARDS THE OBTAINING OF A COMPETITIVE ADVANTAGE.

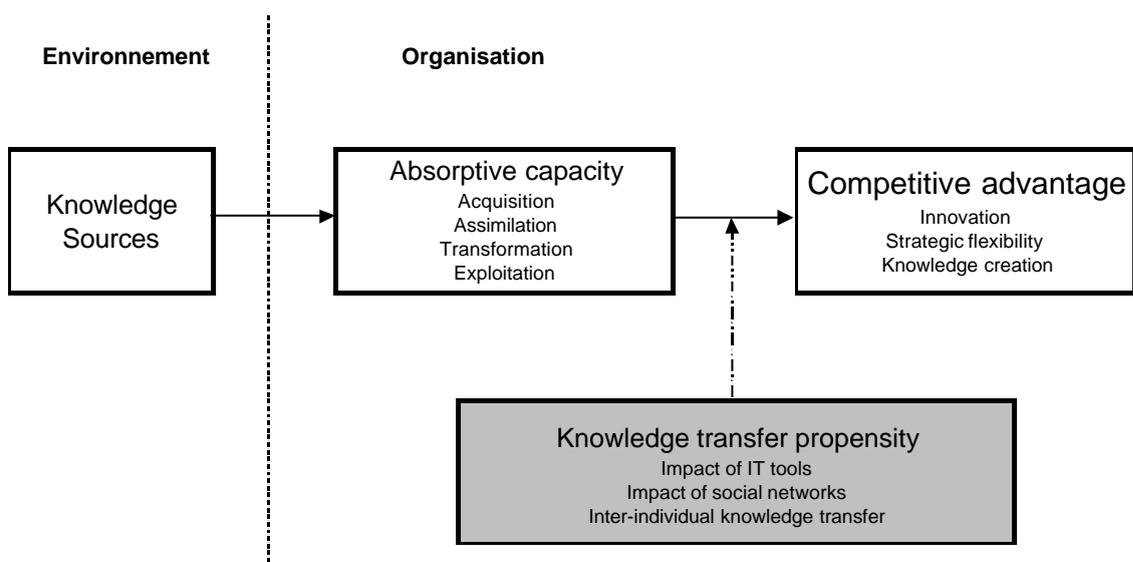
The goal of this model (Figure 1) is to link absorptive capacity and knowledge transfer propensity. This model highlights the fact that absorptive capacity and knowledge transfer propensity can lead to the obtaining of a competitive advantage.

This model is a kind of virtuous circle, because it highlights the fact that there is no limit in information processing. Every relations stated in the model is positive. Therefore we argue that this model constitutes a loop where knowledge transfer propensity enrich knowledge sources and so on. Moreover, we think that our model can be compared to an organizational learning mechanism. “Learning is conceptualised as a virtuous circle in which new information is used to challenge existing ideas and to develop new perspectives on the future and new action routines through organizational dialogue” (Dixon, 1994 in Brown and Starkey, 2000). This is conform to March and Olsen (1976) definition of the learning cycle : “...learning cycle is a stimulus-response system in which individuals’ actions lead to organizational actions which evoke environmental responses”. “A central factor in the “dynamic capabilities” view of firm strategy is the acquisition of new capabilities through organizational learning” (Mowery et al., 1996).

In this perspective, our model highlights an organizational learning framework from external sources of knowledge (Sarvary, 1999). This is confirmed by Hedberg (1981) saying that “learning takes place when organizations interact with their environments”. Our model is based on the organizational learning processes described by Crossan, Lane and White (1999). In fact, the four learning processes (intuiting, interpreting, integrating and institutionalising) can be linked to the dimensions of absorptive capacities described earlier:

- intuiting is an individual process of pattern recognition (acquisition);
- interpreting corresponds to the assimilation and transformation phase; it happens at the individual level also;
- integrating is change in individual’s understanding and actions, it represents the exploitation step; we partly agree with Crossan, Lane and White (1999) considering that integrating is situated at the group level. In fact, the exploitation of new external knowledge implies knowledge sharing from certain organizational members during task realisation;
- lastly, institutionalising that is the organizational appropriation of knowledge through members interactions, is not described in our model.

Figure 1
A model of organizational learning through absorptive capacity and knowledge transfer propensity



Moreover, as Cohen and Levinthal (1990) pointed out, absorptive capacity depends on transfers of knowledge. This confirmed our assertion that is to considered the use of external sources of knowledge, absorptive capacity and knowledge transfer propensity as a virtuous circle. In fact, we posit that knowledge is first, its analysis second, and its transfer third, leading to the obtaining or the maintaining of a competitive advantage. Meso and Smith (2000) described this phenomenon. We used the “organizational knowledge infrastructure and its relation to sustainable competitive advantage” described by Meso and Smith (2000) to introduce the innovative perspective, and the obtaining of a sustainable competitive advantage.

In line with our model we posit that :

Proposition 1 : the greater a firm’s exposure to knowledge sources, the greater will be its absorptive capacity.

Proposition 2 : the greater a firm’s absorptive capacity, the greater a firm will acquire a competitive advantage, taking into consideration the indirect influence of knowledge transfer propensity.

3. ABSORPTIVE CAPACITY AND THE OBTAINING OF A COMPETITIVE ADVANTAGE IN RELATION WITH KNOWLEDGE TRANSFER PROPENSITY.

Studying Penrose (1959) work, we can see that the essence of organizational capacities are the creation and the integration of knowledge (Grant, 1996; Meso and Smith, 2000). In studying the evolution of this resource-based theory, knowledge appears like one of the most important resource a firm can manage. In fact, as Peteraf (1993) points out, “the main part of long term competitive advantages are based on information, on tacit and complex understandings, that are not easily available for individuals external to the organization”. Academics highlight the role of tacit knowledge because it allows to maintain a competitive advantage (Grant, 1996), and because it is linked with organizational learning and innovation (Nonaka and Takeuchi, 1995). Therefore, knowledge can be considered like the biggest strategic resource of a company, and the dexterity to obtain it, share it, and use it as the biggest capacity to maintain a competitive advantage (Cohen et Levinthal, 1990). For Wright, van Wijk and Bouty (1995) company success is a function of its development, integration and exploitation capacity to use real flow of knowledge.

We consider knowledge as a key resource in the obtaining of a competitive advantage. “A firm’s capability to effectively, create, manage, and exploit knowledge is one such critical resource” (Matusik and Hill, 1998). “We focus on advantages accruing to the knowledge components of a firm’s distinctive competence, since unique knowledge is believed to be the most fundamental source of above-normal returns (Spender, 1996; McEvily et al., 2000). These knowledge-based competitive advantages are difficult to imitate because knowledge is complex, difficult to understand, to imitate and socially embedded in organizations. Therefore we consider absorptive capacity as a knowledge integrating and processing mechanism. In this perspective, absorptive capacity deals with knowledge creation. The “creation” phase could be situated in our model between absorptive capacity and knowledge transfer propensity. According to Nonaka (1994), organizations that are able to stimulate and to improve the knowledge of their human capital, are much more prepared to face today’s rapid changes and to innovate in the domain where they decide to invest and to compete. Following Nonaka and Takeuchi (1995) prescriptions concerning the creation of knowledge through

conversion processes, we think that knowledge creation takes place at the end of the absorptive capacity mechanism. Whereas knowledge creation could be individual, we consider that most of time it is an organizational phenomena. In our model, we think that the “transformation” phase is an individual process. Therefore, use will be an individual process first, and through discussions, observations, meetings, use will reveal to other organizational members a new knowledge. “Knowledge development benefits from individuals who exercise their curiosity and entrepreneurial initiative to leverage personal knowledge in the obtaining of a competitive advantage” (Pitt and Clark, 1999). This knowledge will be organizationally adopted, institutionalised if necessary through formal processes, and knowledge creation will take place from an organizational point of view. “An organization must supply and create knowledge and ideas effectively, because these are the primary inputs for innovation” (Kim and Mauborgne, 1999). “New knowledge can promote innovations in new methods and practices, which can then be absorbed into the routines and culture of an organization” (Darr and Kurtzberg, 2000). This organizational knowledge creation is supported by the knowledge transfer propensity of the organization. Kim (1998), for instance, considers absorptive capacity as an integral part of the learning system. In this perspective absorptive capacity presents two advantages. First, absorptive capacity will provide the possibility to change the knowledge basis of a firm through the acquisition, assimilation, transformation and exploitation processes. This continual knowledge renewal gives the firm a real adaptive capacity. Therefore, firms will be more adept to environmental changes, and it will be less difficult for them to change their organization in order to maintain or obtain a competitive advantage. Second, we think that firms improve their learning processes. This results in fast learning processes and, above all, in a reduction of costs associated with learning. In fact, as organizational members will be accustomed to learn and to employ certain mechanisms, they will be more effective in the use of organizational routines. Therefore, the costs linked to these routines will decrease because of a better use of these mechanisms. These advantages allow the firm to reconfigure in using continually new knowledge, and in cutting costs through learning. Moreover “organizational learning entails learning by individuals in a firm that becomes implanted in the structure, culture, and memory of that firm, allowing it to become more flexible and adaptive to its internal and external environment” (Lahti and Beyerlein, 2000).

After these processes of acquisition, assimilation, transformation and use, individuals should be able to transfer their knowledge to the whole organization or to some organizational members (in function of the kind of knowledge). We think that this transfer is responsible in a large part in the obtaining of a competitive advantage. Argote and Ingram (2000) “theoretical results illuminate how organizations can derive competitive advantage by transferring knowledge internally while preventing its external transfer to competitors. [...] Knowledge embedded in the interactions of people, tools, and tasks provides a basis for competitive advantage in firms”. “Realizing benefits from new relationships hinges on the success of knowledge transfer between organizations” (Argote, Ingram, Levine et Moreland, 2000). Thus, knowledge transfer is an important business process because it is evolutionary, and it adapts to changing environment conditions. Moreover knowledge transfer facilitates these transformations from a human and technical perspective. For instance, decentralisation development obliges companies to restructure. “Effective management of these distributed organizations requires that knowledge be transferred from one team, department, or geographical division to another” (Argote et al., 2000). Therefore, knowledge transfer constitutes a basis for a competitive advantage because it facilitates knowledge flow that constitutes a basis for innovation and strategic flexibility. “Strategic innovation is the

purposeful orchestration and directed application of organizational skills and knowledge” (Pitt and Clarke, 1999).

As noted previously, individuals or social networks must be compatible with the new context for a successful knowledge transfer (Argote and Ingram, 2000). The importance of this mechanism leads to an effort of individuals that try to adapt their knowledge to the new context. This perspective highlights the ability of a firm to adapt to changing environment conditions thanks to its members. Thus, if individuals can adapt to these new conditions, the organization will be more adept to changes.

“The key to obtaining long-term competitive advantage is not to be found in the administration of existing knowledge, but in the ability constantly to generate new knowledge, and to move on to new products and services” (von Krogh and Venzin, 1996 in Seufert et al., 1999). The development of new products or services can be a direct consequence of knowledge capitalisation and transfer, through a human use of existing technologies and new ones. In fact “creation of new products and new knowledge depends on existing products, along with the underlying path-dependent knowledge and capabilities” (Helfat and Raubitschek, 2000).

CONCLUSION.

A knowledge-based competitive advantage is, in essence, innovative in the way that it develops through the creation of a new product, service, process or structure. “Knowledge-based firms will not only quickly respond to customers’ needs, but also actively shape their expectations for future products and services” (Gurteen, 1998).

For Liu and White (1997), absorptive capacity is a predictor of innovative output: “Innovation is driven by synergy through investments in sources of new knowledge and in absorptive capacity”. Moreover, “knowledge embedded in the interactions of people, tools, and tasks provides a basis for competitive advantage in firms” (Argote and Ingram, 2000). Thus, absorptive capacity and knowledge transfer propensity are very important in the obtaining of a competitive advantage nowadays.

This organizational learning framework dealing with external sources of knowledge, absorptive capacity and knowledge transfer propensity offers a new conceptualisation of organizational learning. This cycle is a kind of iterative loop where knowledge is acquired, assimilated, transformed, used and transferred to act directly on product, service or structure innovation. Moreover this innovational trend leads to a growing strategic flexibility of the firm through a continual knowledge renewal.

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