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THE KNOWLEDGE BASED-VIEW OF THE FIRM: FROM THEORETICAL ORIGINS TO FUTURE IMPLICATIONS

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WORKING PAPER 1/2006

ABSTRACT

The Knowledge-based view of the firm is a recent extension of the Resource-based view of the firm very adequate to the present economic context. Knowledge is considered to be a very special strategic resource that does not depreciate in the way traditional economic productive factors do, and can generate increasing returns. The nature of most knowledge-based resources is mainly intangible and dynamic, allowing for idiosyncratic development through path dependency and causal ambiguity, which are the basis of the mechanism for economic rent creation in the Knowledge-based view of the firm. Future implications that emerge from these characteristics are presented at the end of the paper.

KEYWORDS: *Resource-based view, Knowledge-based view, knowledge resources, intangible assets, economic rent creation.*

JEL CLASSIFICATION:

1. The resource-based view of the firm

The foundations of the resource-based view (RBV) of the firm can be found in the work by Penrose in the middle of the XX century (1959) that conceived the firm as an administrative organization and a collection of productive resources, both physical and human. Material resources, as well as human resources, can provide the firm a variety of services. The same resources can be put to use in different ways, according to the ideas of the firms on how to apply them. In this sense, there is a close relationship between the knowledge that people in the organization detain and the services obtained from the resources, so that firms are really repositories of knowledge.

The RBV of the firm focuses specially on the inside of the firm, its resources and capabilities, to explain the profit and value of the organization (Penrose, 1980; Wernerfelt, 1984; Barney, 1991; Grant, 1991; Peteraf, 1993; Makhija, 2003). This theory is applied to explain differences in performance within an industry (Hoopes *et al*., 2003). The RBV of the firm states that differences in performance happen when well succeeded organizations possess valuable resources that others do not have, allowing them to obtain a rent in its quasi-monopolist form (Wernerfelt, 1984).

The existence of capabilities and resources heterogeneity within a population of firms is one of the principles of the RBV (Helfat and Peteraf, 2003). The organizations are heterogeneous entities characterized by their particular and unique resource bases (Barney, 1991; Nelson and Winter, 1982, *apub*, Marr, 2004). The RBV of the firm presents an explanation for the heterogeneous competition based upon the premise that close competitors differ in an important and lasting way in their resources and capabilities (Helfat and Peteraf, 2003). This perspective recognizes that the type, magnitude and nature of resources and capabilities are important determinants in their capacity to generate profit (Amit and Schoemaker, 1993). By accumulating resources with rent-yielding potential the firm may increase the amount of rents generated, and subsequent profits (Szulanski, 2003).

The process of resource accumulation is considered to be a reflection of innovative and entrepreneur activities. Profits can only emerge from these activities if resource accumulation costs are inferior to the rents that those resources might actually produce (Peteraf, 1993). Considering a strategic perspective of the RBV of the firm, the organization is a collection of unique competencies and capabilities influencing its evolution and its strategic growth options (Barney, 1991; Dierickx and Cool, 1989; Winter, 1987).

The nature of rents generated in the perspective of the RBV is *Ricardian* (Barney, 1986a, 1997; Conner, 1991; Montgomery and Wernerfelt, 1988; Peteraf, 1993; Wernerfelt, 1984), *apub*, Makadok (2001), Teece *et al*., (1997), this means that the choice of the resources is the main mechanism influencing the generation of the economic rent (Makadok, 2001). The *Ricardian* logic explains the heterogeneity of firm performance as a consequence of organizations owning resources with different productivities. In this sense one should be led to ask: How do organizations acquire resources with heterogeneous productivities? Barney (Barney, 1986a, *apub*, Makadok, 2001) answers that question this way: the organization should apply a superior capacity to choose resources at the resource markets. These capacities will traduce in most precise and better well define expectations of the future value of resources, than those presented by other participants in the resource market (Makadok, 2001).

A consequence of this *Ricardian* RBV of the firm is that the mechanism for economic rent creation acts ***before*** the acquisition of resources. The firms processing the superior capacities to identify which are the winning and the loosing resources will be able to acquire the former ones and avoid the last ones. Considering this mechanism, every choice happens ***before*** the acquisition of the resources. A corollary it is then possible to establish: the capacity to choose resources may affect the economic performance of the firms even when they do not acquire the resources (Makadok, 2001).

The RBV of the firm is a suitable approach to understand competitive dynamics (DeNisi *et al*., 2003). Since Barney's paper in the early 90's (Barney, 1991), several authors approached the firm and its strategy from a resource-based perspective. Barney presented in his paper a method of analysis to identify the characteristics of firm resources that are able to generate sustained competitive advantage (Hoskisson *et al*., 1999). More recently Barney (Barney, 2001b) further developed his work, a decade after, contrasting the RBV of the firm to other theories, for many have been the developments and critics to his work since its publication in 1991 (Barney, 2001a).

The RBV of the firm is a strategic line of thought that analyses the organization's strengths and weaknesses. The organization's attributes that allow it to conceive of and implement value-creating strategies are resources. According to Barney (1991) firm resources can either be: physical, human, or organizational. Resources can also be tangible, or intangible (Hoskisson *et al*., 1999; Hannes and Fjeldstad, 2000; Gupta and Roos, 2001; Spanos and Lioukas, 2001; Mathews, 2003). The resources, assets and capabilities the firm possesses are used to build its competitive advantage and, as a consequence, economic wealth (Dess *et al*., 1995). The resources and capabilities, tangible and intangible, generate economic returns to the firm (Amit and Schoemaker, 1993).

The RBV of the firm considers that resources are not limited to the traditional economic productive factors; they also include socially complex resources, such as interpersonal relationships within firm managers, the firm's culture, or its reputation near the suppliers or clients (Barney, 1991). Physical resources may originate returns above average levels, but are the intangible resources, developed through a unique historical sequence and having a socially complex dimension, that are able to create and sustain competitive advantage of the firm (Makhija, 2003). The RBV of the firm approach recognises the strategic importance of social and behavioural interactions in the conceivability of, the choice and the implementation of the organization's strategies (Barney, 1986b, *apub*, Barney and Zajac, 1994). Intangible resources can hardly be changed, except in the long term (Teece *et al*, 1997). These intangible resources are frequently found in the organization in the form of tacit knowledge (Makhija, 2003).

The resources are the basis of this theory and they explain the differences in performance between firms, as a consequence firms that possess certain competitive advantages obtain higher returns. On the other hand, resources are the basis of the organization's strategy and are used to implement it. Having this in mind we are able to observe the joint effect of resources and strategy in the organization's returns (Hitt *et al*., 2001). According to Barney (1991), following other authors, firm resources are the assets, the capabilities, the organizational processes, the firm attributes, the information, the knowledge, etc.

Following the RBV of the firm we should consider the conditions set by Barney (1991): resources heterogeneity – necessary but not sufficient to obtain a sustainable competitive advantage – and the resources immobility – through the retention of resources in certain firms. Both conditions have already been explored by other authors, as Dess *et al*. (1995) and Mata *et al*. (1995), but the last can be partially avoided by the capacity of producing and developing imitations (Alvarez and Barney, 2001).

Barney (1991) considers that firm resources can be classified into three categories: physical capital resources, human capital resources and organizational capital resources. According to Barney (1991) there are certain conditions that resources must present to enable the firm to sustain its competitive advantage: rareness, value, imperfect imitability and non-substitutability. We find these conditions are still respected in recent literature, as in Hoopes *et al*. (2003), King and Zeithaml (2003) or Wiklund and Shepherd (2003), *inter alia.* The competitive advantage does not emerge from the industry dynamics, but from the processes of accumulation and utilization of resources within the firm, in other words, it is the result of the way the firm uses what it has got (Roos *et al*., 2001).

The strategic value of the organizations resources and capabilities can be increased by the difficulty of buying, selling, imitating or substituting them. The invisible asses, like tacit knowledge or trust, can not be transacted or easily replicated by competitors, as they are usually founded in organizational history (Amit and Schoemaker, 1993).

The human resources present a certain degree of mobility, but the capabilities they possess can be valuable to a firm and not so for another firm, or competitor. Certain capabilities, based upon the tacit knowledge of the firm, are only valuable when integrated with other individual capabilities specific to that particular firm, and that capacity of being complementary is immobile (Hitt *et al*., 2001).

The RBV of the firm establishes the possibility for researchers to link the resources of the firm to its sustained competitive advantage. This theory identifies the existence of rivalry between firms that present differences in efficiency due to resources heterogeneity. Industry equilibrium is based on the productivity differentials between firms. The RBV of the firm considers that the differences in efficiency between firms within the same industry persist due to the difficulty in imitating the resources each firm possesses (Seth and Thomas, 1994), this means that systematic variations in profit and performance have their origins in particular firm factors (Amit and Schoemaker, 1993).

2. From the resource-based to the knowledge-based view of the firm

It is largely accepted that the knowledge-based (KBV) of the firm is a recent extension of the RBV of the firm (Grant, 1996a; Roos, 1998; Hoskisson *et al*., 1999; Sveiby, 2001b; Bontis, 2002b; De Carolis, 2002; Huizing and Bouman, 2002; Balogun and Jenkins, 2003). The KBV of the firm considers knowledge as the most important strategic resource and, in that sense, this perspective is and extension of the RBV of the firm (De Carolis, 2002).

The recent extension of the RBV, the KBV, is accepted to be adequate to the present economic context (Drucker, 1993; Sirois, 1999; Stewart, 1997; Garud and Kumaraswamy, 2002; Grant, 2002; Guthrie, 2001; Mathews, 2003). In this context, intangible assets are highly valued (Bontis *et al*., 1999; Petrick *et al*., 1999) (Eustace, 2000; Barney, 2001b; Hitt *et al*., 2001a; Grant, 2002; Mathews, 2003).

The interpretation of knowledge as a resource establishes the theoretical connexion between the RBV and the KBV (Ariely, 2003). The KBV of the firm is a recent extension of the RBV of the firm, and the capabilities made that extension possible (Malerba and Orsenigo, 2000). The competition based upon the capabilities, and the notion of increasing returns was first suggested by Edith Penrose (1959), *apub* (Marr, 2004), and then further explored by Wernerfelt (1984), *apub* (Marr, 2004), and Rumelt (1984), *apub* (Marr, 2004), as they are considered to be the developers of the modern RBV of the firm (Foss, 1997), *apub* (Marr, 2004).

The KBV of the firm is an extension of the RBV of the firm because it considers that organizations are heterogeneous entities loaded with knowledge (Hoskisson *et al*., 1999). The resource base of the organization increasingly consists of knowledge-based assets (Roos *et al*., 1997; Stewart, 1997; Sveiby, 2001b; Marr, 2004). The logic of the RBV of the firm suggests that unique characteristics of the intangible resources (especially knowledge) should determine the focus of research (Rouse and Daellenbach, 2002). Knowledge resources are particularly important to ensure that competitive advantages are sustainable, as these resources are difficult to imitate they are the foundation for sustainable differentiation (Wiklund and Shepherd, 2003).

The KBV of the firm has attracted great interest as it reflects that academia recognizes the fundamental economic changes resulting from cumulatively and availability of knowledge in the past two decades. We are witnessing a structural change in the productive paradigm (Carneiro, 2003). The change from manufacture to services in the majority of developed economies is based on the manipulation of information and symbols and not on the use of physical products (Fulk and DeSanctis, 1995).

The RBV of the firm literature justifies the existence of differences in performance between organizations as a consequence of knowledge asymmetries (capabilities and competences). As a result, an important KBV of the firm proposition states that

ISSNº 0874-8470

the organization exists to create, transfer and transform knowledge into competitive advantage (Kogut and Zander, 1992). Nevertheless, transferring knowledge through the organization can be difficult, that's the so-called "*stickiness*". *Stickiness* reflects the presence of internal factors that enable the true achievement of competitive advantage. *Stickiness* also hinders the appropriation of rents from existing knowledge assets (Szulanski, 2003).

Conner and Prahalad (2002) argue that clearly there is a body of literature that considering KBV of the firm as being the essence of the RBV of the firm. According to these authors there is an emerging strategic management literature on the RBV that points out knowledge as the basis for competition. The RBV of the firm should incorporate the temporal evolution of its resources and the capabilities that sustain the competitive advantage (Helfat and Peteraf, 2003), and that was achieved by the "dynamic capabilities".

The *Ricardian* perspective of rent creation adopted by the RBV of the firm is challenged by the *Shumpeterian* perspective of the dynamic capabilities vision (Amit and Shoemaker, 1993; Dietrickx and Cool, 1989; Mahoney, 1995; Nelson and Winter, 1982; Teece *et al*., 1997) *apub*, Makadok (2001). This vision of dynamic capabilities enlightens the importance of an alternative rent creation mechanism – capability building –, which is different from resource choosing Makadok (2001). Teece and other authors (Teece *et al*., 1997) present a clear distinction between the two perspectives: the RBV and the dynamic capability view; the former is mostly dependent on resources and presents a *Ricardian* rent creation. On the contrary, the dynamic capability view is strongly related to processes and paths, presenting a *Schumpeterian* rent creation.

It is largely accepted that KBV of the firm is an extension of the RBV of the firm. Considering that the capabilities made that extension (Malerba and Orsenigo, 2000), we can make a logical deduction and admit that the influence of the capability development mechanism will affect KBV of the firm. Dynamic capabilities have the capacity to reconfigure, redirect, transform, shape and integrate central knowledge, external resources and strategic and complementary assets. They will allow the firm to respond to the challenges presented by the *Schumpeterian* competitive world, made of competition and imitation, changing so fast and pressured by temporal factors (Teece *et al*., 1997). The KBV of the firm is the logical evolution of the RBV of the firm considering that it is a way to incorporate the temporal evolution of its resources and the capabilities that sustain the competitive advantage (Helfat and Peteraf, 2003).

Petrick and other authors (1999) present the intangible assets (both individual, such as leadership, and social, such as organizational reputation) as being the basis for sustained competitive advantage. Following a RBV approach, the central capabilities (such as the capabilities to define and solve the organizational problems) are the base for the specific competitive advantage of the firm (Lei *et al*., 1996). The present management literature strongly points out capabilities and competences as the basis for the competitive advantage of the firm (Amit and Schoemaker, 1993).

3. The knowledge-based view of the firm

The economic change of material-based production to information-based production created a revaluation of the firm workers. Increasingly we find knowledge workers at the core of the organization functions: concept and technology designers, as well as finance and management people. Other individuals are considered to be in the firm's periphery, as a consequence their responsibilities change permanently and they are defined by the tasks they perform at the moment. This way, a new differentiation in labour arises (Child and McGrath, 2001).

Many firms consider that to act with efficacy in today's economy, it is imperative for them to become a knowledge-based organization. But few understand what that means, and how to make the changes necessary to achieve it. Perhaps the most common mistake firms do is considering that the higher the knowledge content of their products and services, the most close they are to be true knowledge-based organizations. But the products and services are only the visible and tangible reality they present to their clients – the tip of the iceberg. As in real icebergs, the largest reality that allows the firm to produce is located below the surface of the water, hidden in the intangible assets of the organization, and it entails the knowledge of what the firm does, how it is done, and why it is done that way (Zack, 2003).

The perspective of the KBV of the firm is consistent with the approach to organizations as cultures (Balogun and Jenkins, 2003). Considering that organizations are conceptualised as cultures, they are suppose to learn through activities that involve cultural artefacts. Organizational learning allows the firm to acquire, to change and to preserve its organizational capabilities (Cook and Yanow, 1995). Culture is most repeatedly defined after Schein (Schein, 1985, *apub*, Balogun and Jenkins, 2003), as a set of assumptions and beliefs held in common and shared by members of an organization, or as shared beliefs and knowledge after Nonaka and Takeuchi (Nonaka and Takeuchi, 1995, *apub*, Balogun and Jenkins, 2003).

Organizational culture is, in each moment, the stock of knowledge, coded or not, integrated in patterns and recipes of action to be taken before certain situations. Time and routines often make knowledge become tacit, embedded, and a drive for action (Balogun and Jenkins, 2003). A routine consists of behaviour that is learned, highly patterned, repeated and founded, even if only partly, in tacit knowledge (Winter, 2003).

Following the words by Nonaka (1991) "… the only true lasting competitive advantage is knowledge…" we are able to find some related concepts like the knowledge-based organization (Blackler, 2002) and the knowledge-based advantage (McEvily and Chakravarthy, 2002). These authors recognize that non-observable factors have impact on firm performance. Those factors, as management capabilities and competences, technical knowledge or tacit organizational routines, may turn out to be the main determinants of firm performance (Dess *et al*., 1995).

Strategic management literature is recently analysing the competitive advantage in a way that it associates firm performance variation to intangible factors (Rouse and Daellenbach, 1999). Apart from natural resources monopolies, the intangible resources present a superior probability to produce competitive advantage, as they are generally rare, socially complex, and though, hardly imitable (Hitt *et al*., 2001).

In the same sense, it is appropriate to point out that there is a knowledge management literature that associates superior knowledge bases, resulting from organizational learning, to superior firm performances (Senge, 1990 *apub* Garvin, 1998), as well as presenting differences in knowledge inventories as the basis of competitive advantage (Miller, 2002). A superior knowledge base can be associated to higher strategic flexibility and faster reaction to environment changes (Grant, 1996b; Volberda, 1996), so, knowledge is considered to be one of the most important assets to the creation of sustained competitive advantage (Umemoto, 2002).

Through the use of dynamic capabilities, organizations get to integrate, to build and to reconfigure their internal and external capacities to face fast changing environments (Teece *et al*., 1997). Organizational capabilities emerge over time through a process of organizational learning (Levitt and March, 1988, *apub*, Szulanski, 2003).

Knowledge-based capabilities are considered to be the most strategically important ones to create and sustain competitive advantage (DeNisi *et al*., 2003). Superior talent is recognized to be the main creator of sustained competitive advantage in high performance firms (Hiltrop, 1999). The capacity to learn faster than competitors could turn out to be the only sustained competitive advantage (Geus, 1988). This dynamic capability builds up over time a historical or path dependency (Collis, 1991; Winter, 1987), creating causal ambiguity (creating barriers to imitability and making it very difficult for other firms to recreate the unique historical evolution each organization develops), and it establishes a basis for competitive advantage (Lei *et al*., 1996).

Capabilities and capacities lead to superior sustained performances because they are specific to each organization (they are temporarily immobile and unique to that firm), valuable to the clients, non substitutable and hard to imitate (Rugman and Verbeke, 2002). Capacities are difficult to duplicate (Blackler, 2002). The replication of organizational routines, for example, is a very difficult and expensive process because replication itself is an organizational capability only developed through execution (Winter and Szulanski, 2002).

The tacit, specific and complex knowledge that the organization develops inside generates long lasting advantages because that knowledge is difficult to imitate (McEvily and Chakravarthy, 2002). The firm absorbs internal and external

ISSNº 0874-8470

knowledge, combines them with pre-acquired knowledge, and creates new one (Cohen and Levinthal, 1990). The organization may enlarge its knowledge base through the new application of pre-existing knowledge in the firm (Szulanski, 2003), as these new combinations of pre-existing knowledge generate new knowledge (Gratton and Ghoshal, 2003). Even external, explicit knowledge, involving high acquisition costs to the firm and available to competitors simultaneously, combined with unique internal knowledge may result in new and exclusive knowledge (Zack, 2002).

Knowledge intensive firms abandon formal structures and achieve coordination through social rewards and internal normative systems, instead if hierarchical control. Dimension is a relevant factor to these organizations, when intensive knowledge firms grow they become more bureaucratic (Starbuck, 1992). Structure and control are the most addressed subjects by the researchers analysing the “productive process” that transforms knowledge into products and services (Rylander and Peppard, 2004). The dilemma between autonomy and control is frequently approached in the literature. Some arguments defend that the resolution of such dilemmas is better achieved through the application of cultural and normative processes, than through the utilization of formal hierarchy and structure (Rylander and Peppard, 2004).

Research has demonstrated that intangible resources play an important part in the organization and that they have a positive impact on the competitive position of the firm (Hannes and Fjedstad, 2000). The intangible resources are considered to be the ones that truly generate sustained competitive advantage, as they are generally rare and socially complex (Barney, 1991; Peteraf, 1993). Intangible assets are those non-monetary assets that present no physical existence, are used in the production of products and services, are rented to others or are applied in administrative routines (Reinhardt *et al.*, 2003).

The capabilities of problem solving, of recognizing the importance and assimilating information, and of knowledge application for commercial purposes, *inter alia*, are considered to be intangible resources (Cohen and Levinthal, 1990), and the knowledge resources are especially critical for the organization (Grant, 1996a). Resources like knowledge, learning capacity, culture, team work and human capital, *inter alia*, are pointed out to be the ones contributing the more to the sustained competitive advantage of the firm (Hitt *et al*., 2001; Barney, 2001a). These resources have the potential of recognizing each other (information, relationship importance, contacts and knowledge within the sector) and to absorb them.

The sustainability of the knowledge-based competitive advantage depends on the following association: knowing better certain aspects than the competitors, along with the time limitations competitors have to acquire similar knowledge despite the amount of money they are willing to invest to achieve it (Zack, 2002). According to Sveiby (Sveiby, 2001), regarding a knowledge-based strategic formulation the main intangible resource is people’s capability. Human experience, in the large sense, might be the foundation of the KBV of the firm (von Krogh and Grand, 2002).

The post-industrial economy that is emerging based upon knowledge is largely referred to as "new economy" (Grant, 2002). In this economy organizations become virtual, geographically dispersed, presenting knowledge nets highly dependent on computer mediated communication. Firms negotiate almost exclusively in the cyberspace and give extreme emphasis to learning and knowledge-based work (Markham, 1998). Organizations operate in a net independently from their geographic location, based upon the use of communication technologies (Blackler, 2002).

Cole (1998) considers that together with traditional resources (Land, Labour and Capital) knowledge is a determinant element of the firms and nations competitiveness. According to a report by the OECD (OECD, 1999, *apub*, Cavalcanti, 2003) 55% of the 1998 production of the world wealth was generated through knowledge. According to Boisot (2002) the recognition that knowledge contributes to the construction of national wealth and de development of a strong and competitive country goes back to the mercantilist era. In recent literature we still find research reports that describe the search for the knowledge-based foundations of national wealth as in (Bontis, 2002a), and (Jeong, 2002).

Contrasting with this view we still find, as well, certain countries very rich in natural resources falling in the commodity trap, this meaning that they belief that their mines, rather than their minds, are the source of their prosperity. Nations' real wealth doesn't reside in forests of rubber trees or acres of diamond mines, but in the techniques and technologies for exploiting them (Stewart, 1998). The problem is that it is much more difficult to count ideas and specialization than to count money, or quantities of products (Reinhardt *et al.*, 2003).

4. Implications

The new economic order is driven by knowledge:
The evolution of economic history presents some parallelism to the relative success obtained by the different intensities of the classical production factors in wealth creation (Land, Labour and Capital) put to use over the centuries. In the beginning of this millennium, economic behaviour is being attributed to a new factor – knowledge: the critical dimension in the sustainability of competitive advantages (Carneiro, 2003). The century we are living in is the knowledge century (Silva and Castro, 2003). Competitive advantage does not arise from those possessing huge dimensions or those blessed with abundant natural resources. In this global economy knowledge is the King (Garud and Kumaraswamy, 2002), and maybe that's the biggest competitive advantage of them all (Davenport and Prusak, 2000). The knowledge-based competition will be critical for organizational success in the coming years (DeNisi *et al.*, 2003). The "new economy" is driven by knowledge (UKDTI, 1998a; UKDTI, 1998b), is based upon knowledge (Sirois, 1999), and it is moved by knowledge (Wenger and Snyder, 2001). Its main output – knowledge – is intangible (Wenger and Snyder, 2001); it is the economy of the intangibles (Stewart, 1997).

The most important resources are intangibles:
This new economic perspective considers the firm as a recipient of individual and social capabilities, processing and transforming them into economic valuable products (Hoskisson *et al*., 1999), in other words, with market value. This economic approach has become more relevant as recent research shows that firms basing their strategies on inimitable (through historic dependency, causal ambiguity or social complexity) as well as intangible resources outperform others that base their strategies exclusively on tangibles (Barney, 2001b). Intangible resources present a higher probability than tangibles to produce competitive advantage, especially firm specific resources like knowledge (Hitt *et al*., 2001).

Knowledge resources present special characteristics:
Organizational knowledge presents a tremendous wealth creating potential. Contrary to traditional and finite production factors, knowledge can generate increasing returns, through its systematic use (Kim and Mauborgne, 1999). Knowledge presents very special characteristics that differentiate it from physical resources and contribute to the creation and sustainability of competitive advantage. Knowledge can be used simultaneously in several applications and still it does not devaluate (King and Zeithaml, 2003). Organizational knowledge is such a marvellous substance, contrary to other resources, its utilization, under different forms, increases it, instead of decreasing it (Adler, 2002; Spender, 2002). The knowledge patrimony of the firm has a strategic potential (Birchall and Tovstiga, 1999), as this asset becomes more valuable when is used, instead of depreciating (Stewart, 1998).

Organizational procedures will have to change:
Another implication of the KBV of the firm is the necessity for knowledge integration in the production processes (Grant, 1997). The relationship between organizational knowledge and the firm's competitive advantage is influenced by its capacity to integrate and apply knowledge (Matusik and Hill, 1998). In this sense research has changed its focus from the institutions to the coordination mechanisms and their respective contexts (Grant, 2002). According to Drucker (1998), in future organizations coordination and control will depend on the availability of individuals to self-discipline.

Prescriptive models are welcome:
As previous mentioned the KBV of the firm is a recent extension of the RBV of the firm (Grant, 1996a; Roos, 1998; Hoskisson *et al*., 1999; Sveiby, 2001b; Bontis, 2002b; De Carolis, 2002; Huizing and Bouman, 2002; Balogun and Jenkins, 2003). The RBV approach is pointed out to be very descriptive (Priem and Butler, 2001a), in that sense we may consider that the lack of prescriptive models that authors identify in the RBV of the firm literature (Priem and Butler, 2001a; Priem and Butler, 2001b; Helfat and Peteraf, 2003) is a criticism also applicable to this recent extension. So we may assume that the KBV of the firm welcomes the development of prescriptive models.

5. Conclusions

The variety of typologies, taxonomies and theories on organizational knowledge that are presented in the literature, reveals that there is a substantial scientific production on the theme, because of the relevancy researchers identify in it. However, it can be still noticed some lack of cumulative theoretical development in this particular field of research. There is a diversity of concepts, terminologies and definitions reflecting the embryonic state of the theme's theoretical edification; as a consequence, the development of academic studies that bring rigor to a clear relevant subject is needed.

The solidity of a desired and uniform theoretical body accepted by academia will be achieved through the persistence of researchers, combining theoretical deduction to the applied research. But there is still no common language or unifying paradigm that gathers all those researching in organizational knowledge, so there is the necessity to develop a largely accepted vocabulary able to unite researchers. As a consequence, the strategic theory of the KBV of the firm is confronted with the limitations and criticisms organizational knowledge still arouses.

Although there is much to be done, the knowledge-based view of the firm presents some very important characteristics:
1 – The KBV of the firm presents a *Schumpeterian* rent creation logic.
2 – Organizational learning plays an important role in the sustainability of the competitive advantage considering the KBV of the firm.
3 – The nature of the most important resources in the KBV of the firm is mainly intangible and dynamic.
4 – The idiosyncratic intangible assets developed through path dependency and causal ambiguity are the basis of the mechanism for economic rent creation in the KBV of the firm.
5 – The KBV of the firm considers a very special resource that does not depreciate, and can generate increasing returns – knowledge.

ISSNº 0874-8470

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