ABSTRACT

Knowledge management, organizational learning, and the role of competencies for sustaining organizational strategy have been arousing increased interest in recent years. This paper summarizes the results of a bibliographical research carried out by the authors regarding knowledge creation and transfer, aimed at examining the relevance of studying the role of tacit knowledge and expertise in strategy, and at establishing a link between knowledge, expertise and competency studies. It concludes that tacit knowledge is an important source of sustainable competitive advantage, and tacit knowledge sharing techniques could also help reduce the knowledge gap between developed and developing countries.

Key-Words: strategic management, knowledge management, tacit knowledge, expertise, globalization

INTRODUCTION
There are many different approaches to strategy formation. The nineties were characterized by the loss in favor of the positioning school and the upsurge of the resource-based paradigm, with the seminal work of Hamel & Prahalad (1994). This paradigm emphasized the idea that a firm’s competitive advantage derives from its resources, mainly, its distinctive competencies, which would be rooted in the collective learning of the organization.

The resource-based paradigm, if taken alone, does not encompass all the factors to be considered in strategy formation. Yet, some of the recent integrative approaches in strategic management, that take a more comprehensive view of the conjunction of critical factors for optimizing performance, developed from this paradigm. This is the case of both Barney’s (1986) and Day’s (1996) frameworks. This is also the case of Vollmann’s (1996) model, where process competencies assume an important role in organizational transformation, linking strategic intent and strategic responses to organizational infrastructure. This author points to learning capacity as one of the eight key entry points from which an effort of radical change in organizations could be started. Another integrative framework, that of Macedo-Soares (2000), originally developed to help analyze whether an organization implementing a new strategy has the necessary conditions to do so effectively (Macedo-Soares & Chamone, 1994; Macedo-Soares & Lucas, 1996), has evolved in keeping with the resource-based view, so as help analyze the strategically relevant resources/competencies of an organization and their role for superior performance in the light of socio-cultural and other environmental variables at play. The central category of principal variables is “people”, interacting with two other categories of controllable variables, organization and technology, considered from both their “hard” and “soft” dimensions. These variables also interact with secondary variables, both internal and external to the organization, respectively called specific and general strategic contingencies, which are not controllable and merely favor or constrain the effectiveness of the principal ones.
Studies on knowledge management and intellectual capital, such as those of Edvinsson & Malone (1997) and Stewart (1997), cast new light on this issue, emphasizing the importance of human capital and its links with the two other types of intellectual capital, structural and customer capital. Equally relevant is the recognition, by Allee (1997), that knowledge has a quantic and holistic nature, being at the same time, object and process, stock and flow. Thus, permanent renewal of individual competencies, and their synergy in order to maintain and improve organizational competencies as sustainable competitive advantage, addresses the question of knowledge creation and knowledge transfer flows within the organization, as highlighted by Nonaka (1997); Nonaka & Takeuchi (1997) and, finally, by Krogh, Ichijo & Nonaka (2000).

One of the basic aspects of knowledge creation is the role attributed to tacit knowledge. However, this dimension has not been thoroughly investigated, as can be seen in Sternberg & Horvath’s study (1999) on tacit knowledge in professional practice.

Despite the fact that many studies have already been carried out on this topic, there are some gaps in the resource-based theory that are worth investigating further. Namely, how do organizational competencies relate to individual competencies? What is the role of tacit knowledge in strategy? Finally, is there a link between tacit knowledge and expertise? This last question was looked into by Starbuck (1997) and has been recently reviewed by Herling (2000); and Herling & Provo (2000).

In the next section, we summarize the most significant results of a bibliographical research regarding the following issues: 1) the relationship between strategy and knowledge; 2) the differences and relations between explicit and tacit knowledge; 3) knowledge creation enablers; 4) the role and limitations of tacit knowledge; and 5) the links between strategy, competency and expertise. Note that some of the examples given (Infoglobo, Globo Rural, Globo TV Network) are based on the experience of one of the authors as a former executive at Globo TV Network. By way of a conclusion, some suggestions are given for further investigation, in the scope of a more comprehensive research aimed at identifying the contributions of tacit knowledge and expertise to strategy formulation and implementation.

RESULTS AND DISCUSSION
Strategy and knowledge

According to Krogh et al. (2000), strategies can be divided into two types: survival strategies and advancement strategies. These two types differ from one another by their sources of competitive advantage, by the role knowledge plays within them and by the most important knowledge processes that are present in them. These two sources of competitive advantage were identified by Porter (1989) in terms of: 1) economies of scale, or economies of scope; and 2) product or service differentiation. While survival strategies are based on current sources of competitive advantage, advancement ones are linked to future capabilities.

Barney (1997), adopting the same line of thought as Prahalad & Hamel (1998), argues that competitive advantage is sustainable when an organization implements a value creating strategy which remains unique despite current and future competitors’ efforts to imitate it. Thus, in survival strategies, knowledge is a resource difficult to be imitated and also difficult to be replaced. It does not matter if it is exclusive knowledge developed by a single organization or public knowledge that has been absorbed in a rather peculiar way; in both cases, this knowledge will always be difficult to imitate and replace. Barney stresses that the capture of new knowledge is one of the main reasons for strategic alliances. In survival strategies, knowledge transfer capabilities are more important than the content to be transferred.

Where advancement strategies are concerned, what is at issue is new knowledge that drives product and process innovation, and that needs to have its content transferred. Krogh et al. (2000) consider knowledge transfer and continuous improvement the two most important knowledge processes in survival strategies, while the most relevant foundations of advancement strategies are knowledge creation and radical innovation. These authors emphasize the importance of strategic management, which aims at balancing these two types of strategy, because organizations, during the strategy formulation phase, are more interested in allocating resources to maintain their present competitive advantages than to develop strategies that better fit their vision of the future.

An example of the application of the concepts of survival and advancement strategies and of the role played by knowledge can be found in the successful case of Globo Organizations, Brazilian largest media conglomerate. Its broadcasting arm, Globo TV Network, has been managing to reach audience leadership in prime time for 30 years, thanks to widespread diffusion and acceptance of its
in-house made soap operas and TV series. Its products gather high technical quality, inventiveness, attractive scenarios and outside shots showing Brazilian natural beauties, all this seasoned with drops of tropical exoticism and contemporary scenic language. Besides these content-related aspects, Globo TV Network’s survival strategy has developed a sound customer knowledge and an administrative infrastructure that support the content and a national and international distribution of its programs through several media, thus creating a competitive advantage difficult to imitate. Some of its products are delivered by Brazilian and foreign subscriber TV channels and are exported not only to Portuguese-speaking countries and communities but also to many other countries, such as Russia, Germany and Turkey. Other Brazilian and Latin American competitors try to imitate it, by hiring directors, actors or authors, without replicating the same success, because its competitive advantage does not lie behind isolated factors, even when they are so important as artistic talent, but stems from a unique mix of the three types of intellectual capital [human, structural and customers capital, according to Edvinsson & Malone’s (1997) classification].

The printed media arm, Infoglobo, provides an example of one of the strategic options when new knowledge is required. When its executives were studying the launching of a daily newspaper specialized in economy and finance, they came to the conclusion that this could not be done only by using internal knowledge already available among its professionals and staff. Thus, a strategic alliance was established with one of its fiercest rivals (Folhas group), in order to gather new knowledge and to make possible licensing agreements with foreign specialized newspapers and magazines that had sound reputations. In less than 2 years, this newspaper, “Valor”, has ranked second among Brazilian business newspapers.

A third example refers to advancement strategies, encompassing radical innovation and new knowledge. Despite its undisputed primacy in prime time, TV Globo Network morning programming grid 15 years ago was based on products directed to both children and housewives’ audience and did not display enough profitability. Instead of keeping on trying to improve ongoing programs to its traditional audience, it identified an unexplored niche: land owners. Thus, veterinarians, agronomists, forestry engineers, rural educators, ecologists were hired to create, together with TV newspeople, a genuinely new program, “Globo Rural”, aimed at people living in rural areas, which roughly correspond to 30% of the Brazilian population. Its success has not only brought a wide array of new announcers but also enhanced the company’s new image, which
previously was a predominantly urban one. This strategy brought about deep changes in audience rate interpretation, modified customer relationship practices with advertising agencies, and gave much more operational autonomy to program crews.

In order to deepen this discussion, it is necessary to review the very concept of knowledge.

**Knowledge**

Davenport & Prusak (1998) give us a functional, provisional definition, where knowledge is a flowing mix of condensed experience, values, contextual information and experienced insight, which provides a structure for evaluating and incorporating new experiences and information. It is originated in and applied to the minds of knowledgeable people. Within organizations, it is embedded not only in documents and repositories, but also in routines, processes, practices and organizational rules.

There are several aspects worth being noted regarding this definition. Firstly, it points to the dichotomy between explicit and tacit knowledge. When mention is made to documents and repositories, explicit knowledge is at issue; when organizational practices, for instance, are mentioned, the tacit dimension of knowledge is referred to. Secondly, this definition recognizes that there is a kind of knowledge that remains individual, although another one becomes collective. Individual knowledge is emphasized when mention is made of the fact that knowledge is originated in the minds of knowledgeable people; on the other hand, collective knowledge is referred to in terms of condensed values. Thirdly, this definition draws on the coexistence of a cognitivist approach, which examines knowledge under machine-like logic lenses of mind and individual psychology, when mention is made to applying knowledge to the minds of people, with the constructivist approach, which examines knowledge as a social construction, where values provide a structure for evaluating and incorporating new experiences. All these facets stress that knowledge management is a very complex issue, far from being summarized by knowledge tools or infrastructure, and demanding an in-depth examination of all its intangible aspects. Finally, when Davenport and Prusak mention experienced insight in their definition of knowledge, they point to the relevance of discussing expertise within a knowledge framework and, consequently, of examining the role of expertise in strategic formulation and implementation. This is eloquently
expressed in Weick’s (1995) statement that intuition, a core element in tacit knowledge, could be considered as condensed expertise.

**Explicit knowledge and tacit knowledge**
Nonaka & Takeuchi (1997) identify the two dimensions of knowledge creation in the two first points mentioned in the previous paragraph: explicit and tacit; individual and collective knowledge. On the one hand, there is the epistemological dimension, where explicit knowledge and tacit knowledge are found; on the other hand, there is the ontological dimension, which, assuming knowledge is created by the individual, suggests that it is successively enlarged through the network of interactions, until it can be considered as team, organizational or inter-organizational knowledge.

The knowledge taxonomy, in terms of being explicit or tacit, was proposed by Polanyi (1966, in Prusak, 1997). Explicit or codified knowledge is transmitted via formal systematic language. It can be written down on a paper, formulated in sentences, captured in drawings. With adequate infrastructure and tools, it can be easily captured, classified, stored, retrieved and shared. On the other hand, tacit or implicit knowledge is personal and specific to a domain. Tacit knowledge can be found in our senses, body movements, skills, physical experiences, individual perception, rules of thumb and intuition. Hence, the difficulties to format it, communicate it, and share it with others.

Polanyi, rebelling against traditional epistemology, where knowledge is produced by the gap between subject and perceived object, put forward the concept of “indwelling”, where observer and observed thing, body and mind, reason and emotion mix and melt; so, knowledge becomes difficult to be managed, due to the presence of the tacit component.

Nonaka & Takeuchi (1997) define explicit and tacit knowledge by opposition, although they observe that both interact permanently. Tacit knowledge is subjective knowledge, born from experience, from our body; it is simultaneous knowledge of time and space, related to the “here and now” of the gestalt theory; it is an analog knowledge, rooted in practice. On the other hand, explicit knowledge is objective knowledge, coming from rationality, from our mind; it is sequential knowledge, related to “there and then”; finally, it is digital knowledge, embedded in theory. The
authors consider knowledge as being produced by the permanent interaction between explicit and tacit knowledge.

If one adopts this point of view, one can understand why many training and development initiatives are fruitless: they merely focus on transferring explicit knowledge, without giving access to tacit knowledge sharing. Knowledge transfer processes cannot be identical for different organizations within the same industry, because organizational cultures are different, affecting employees’ tacit knowledge, even when explicit knowledge embedded in technical manuals is almost the same. Though there is a dearth of studies relating organizational culture to tacit knowledge, it seems clear that alternative management and organizational development techniques, as storytelling (Evans & Metzger, 2000; Snowden, 2000), mentoring and coaching (Kaye, 2000) must be employed in order to tap tacit knowledge dimensions, instead of relying exclusively on traditional methods aimed at transferring explicit knowledge, as, for instance, in-house classroom training.

Wallace (2001) adds other suggestions for harnessing tacit knowledge, from strategic cascading and directed experiential learning, through the use of cross-functional teams for enhancing collective problem solving skills or business games and simulations, to more operational concerns, such as the extensive use of leadership by example, the adequate management of organizational social environment, and the importance of face-to-face communication, observing that “a handshake is worth a thousand phone calls”.

The same words of caution should be said when organizations base their knowledge strategy only on explicit knowledge tools and infrastructure, as e-mail and intranet.

When acknowledging the importance of organizational culture, it is necessary to be aware that “organizational culture”, “occupational culture” and “national culture” have almost become a business fad. As Hofstede (1997) points out, they generally refer to phenomena of a distinct order, with different places of socialization and varying degrees of similarity of values (national values are quite similar throughout different organizations within the same country) and similarities of practices (shared perceptions of daily practices are at the core of organizational cultures). Thus, pursuing this line of thought, and recognizing that national cultures are different from organizational cultural factors, one can argue that knowledge transfer from a multinational
headquarters to each one of its national branches, or between different national branches, must be carefully planned, taking tacit knowledge dimensions in consideration, in order to improve knowledge transfer efforts and to avoid cultural pitfalls. Rhinesmith (1996), though not discussing knowledge as such, makes a synthesis of Hofstede’s work, translating it into many useful tips, chiefly for American executives.

Saint-Onge, in Harkins, Carter & Timmins (2000), cites a 1999 survey of best practices in knowledge management and organizational learning, where the most important issue is how to develop a new kind of organizational culture that emphasizes the latter, thus pointing to the relevance of creating an atmosphere of learning and knowledge sharing and of developing a strong commitment at all organizational levels.

According to Nonaka & Takeuchi (1997), knowledge creation is a continuous spiral-like process, encompassing four types of knowledge conversion, as follows:

- **Socialization**: tacit knowledge transformed into tacit knowledge, by means of experience sharing.
- **Externalization**: tacit knowledge transformed into explicit knowledge, through concepts, analogies, metaphors, and hypotheses.
- **Combination**: explicit knowledge transformed into other explicit knowledge, forming a knowledge system.
- **Internalization**: explicit knowledge transformed into tacit knowledge, through “learning by doing”, creating mental models and “know how” to be incorporated into individual practice.

There are five phases in organizational knowledge creation:

1. Sharing tacit knowledge.
2. Creating a concept.
4. Building a prototype.
5. Cross-leveling knowledge.
During the first phase, team members exchange information about new technologies, share insights about customers’ needs and discuss individual skills necessary to perform complex tasks. In the concept creation phase, shared tacit knowledge is externalized, giving birth to a functionality specification, to an algorithm, to a description of a manufacturing process, to drawings, for instance. During the third phase, members use several sources of explicit knowledge, as market surveys, statistical trend studies, benchmarking reports, documents that formalize the organization’s vision and strategy, all this aimed at building favorable or unfavorable arguments for the concepts created in the previous phase. During this phase and the next one, adding functional experts can reinforce team membership. After careful scrutiny, a concept is chosen to be developed as a prototype, resulting from the convergence of the explicit knowledge accumulated through this process with all the explicit knowledge already present in the organization. Finally, the group takes the responsibility of sharing the new knowledge throughout the organization, which includes actively asking for feedback from all areas and hierarchical levels.

These five phases can be detected in our previous example, about the creation of “Globo Rural”, the TV program targeted to people in rural areas of Brazil. The first phase began with discussions between marketing and news professionals about potential customers’ needs and the skills required to create the program. After that, a concept was created, through a description of an ideal “hard copy” of the program. For justifying the concept and building a prototype (third and fourth phases), outside professionals of many areas were hired to work as team with Globo TV professionals. Finally, cross-leveling knowledge was promoted when marketing, programming and news people who took part in the project shared their ideas with their colleagues, asking and getting feedback from them, and immediately after, conducting a series of round tables with people from other areas (administration, engineering) for gaining buy-in.

Knowing what are the phases of organizational knowledge helps identify actions that enable knowledge creation.

**Knowledge creation enablers**

In spite of the indisputable importance of Nonaka and Takeuchi’s contribution, their work left few possibilities for translating these theoretical advancements into more practical recommendations aimed at incorporating knowledge creation in strategic formulation and implementation. This gap
could be reduced by adopting the suggestions by Krogh et al. (2000), which identify the following 5 knowledge creation enablers:

- Instill a knowledge vision.
- Manage conversations.
- Mobilize knowledge activists.
- Create the right context.
- Globalize local knowledge.

Enablers comprise both deliberate activities, which can be planned and conducted by the organization’s executives; and emergent activities, which are born as unexpected consequences of deliberate activities or by an ex-post finding that a given activity promotes knowledge creation. All these activities play the important role of helping to share information throughout the organization and to dismantle communication barriers.

There is a two-way link between enablers and knowledge creation phases. Firstly, because all five enablers are extremely important for succeeding in the fifth phase of knowledge creation, that is, for the interactive widespread knowledge sharing within the organization. Secondly, because management of conversations is an enabler that strongly affects all the five phases of organizational knowledge creation.

When instilling knowledge vision of the future, organizations sometimes need to incorporate the views of suppliers, consultants, universities and research centers in their internal group’s contributions. Enhancing knowledge creation, although primarily concerning activities within the organization, can and must involve its strategic partners.

An important feature of managing conversations is the fact that good interpersonal relationships, as a consequence of cross-level fluid communications within the organization, neutralize distrust and fear, reducing personal and organizational barriers that hinder knowledge creation. In our previous example, at first there were scattered prejudices and biased antagonistic positions between in-bred professionals and the newly hired ones. TV veterans, used to speedy pragmatic decisions, blamed newly hired professionals for too much theorizing; these ones blamed TV veterans for “acting first
and thinking later”. As time went by and all professionals used to work together and discuss their viewpoints freely, they began to act and think as a unified team.

Saint-Onge, in Harkins et al. (2000), emphasizes the wide gap between, on the one hand, IT and infrastructure that makes information available and, on the other hand, people and teams that do not take effective knowledge actions. Actual knowledge generation can only take place through human relationships, and a high level of interdependence requires deep changes in individual and group behavior.

Knowledge activists are people who make connections between internal and external knowledge activities and who mobilize supporters, all around the organization, for the most efficient use of knowledge. Their mobilization is very important mainly during the phases of justifying a concept and of building a prototype, when several kinds of functional expertise are added to the nuclear group which has started the knowledge creation process.

The right context is associated with creating an organizational structure that supports knowledge and is aligned with the organization’s strategy. This implies an adequate space, encompassing ideas of physical, virtual and mental space, as in the Japanese concept of “ba”, which unites space and time dimensions, but, at the same time, transcends them. According to Nonaka, Toyama & Konno (2000), “ba” provides the context that interprets information, transforming it into knowledge, in an endless spiral. In “Globo Rural”, all members of the team work together in a very charming house, surrounded by trees, communicating face-to-face with one another and exchanging ideas by whichever means available and fostering individual and collective knowledge with scholars, practitioners, rural union leaders, land owner associations spokespersons, government officials, UN Food and Agriculture Organization (FAO) representatives, and, last but not the least, learning a lot from visiting rural areas and small talking with people who live there.

Globalization of local knowledge concerns sharing this knowledge throughout the organization, overcoming geographical and cultural barriers, being alert to the emotional aspects of care-giving, avoiding the fostering of antagonistic feelings between “homeland” (headquarters) and “colony” (branches), creating psychological and material incentives for cross-sharing knowledge and even recreating knowledge in other contexts. Although it has not been sufficiently studied, this enabler
can decisively contribute to the creation of new knowledge alternatives, mainly tacit knowledge ones, not only for assuring competitive advantages for national firms in developing countries, but also for multinationals aiming at getting better results from their global or regional efforts. Many authors stress the importance of cross-cultural communication, but almost all restrict their analyses to the outer layers of culture. Lewis (1996), for instance, makes few comments on national values, but gives colorful highlights on cultural practices of many countries and continents, in spite of omitting Latin America and Africa. His great merit is to point to the very sources of these studies: history and anthropology.

Globalizing local knowledge provides many opportunities for tacit knowledge sharing, profiting from the best of national cultural diversity, and, thus, enriching strategic possibilities for countries and companies alike. A good example of sources of tacit knowledge to be harnessed in their home countries are international temporary migratory flows: Portuguese temporary workers in vacation returning from France to Portugal; a Turk gastarbeiter returning from Germany to visit his relatives in Turkey; Brazilian dekassegvis, after two or three years in Japan, when coming back to Brazil. Conversely, French, German, and Japanese national and multinational companies could significantly improve their knowledge capital if they were open to the tacit knowledge provided by their temporary workers, regardless of their formal educational levels.

In short, the joint action of knowledge enablers stresses interpersonal relationships and good communication, has a positive impact on the quality of new knowledge; on the speed of its creation; on employee satisfaction; on company image; and on its relations with strategic partners.

Reviewing another approach, which focuses mainly on knowledge sharing within groups, Dixon (2000) examines knowledge transfer mechanisms, dividing them into five types: serial, near, far, strategic, and expert transfer. Serial transfer occurs when knowledge gained by a team while accomplishing a task, can be transferred to the next event when that team will accomplish the same task in a different context. Near transfer arises when explicit knowledge, gained by a team that has often and repeatedly accomplished a task, is replicated by other teams doing similar work. Far transfer is present when tacit knowledge gained by a team performing a non-routine task is made available to other teams performing similar work in other parts of the organization. Strategic transfer occurs when an organization’s collective knowledge for performing a strategic task that
seldom occurs is transferred to the whole organization. Finally, expert transfer appears when a team needs technical knowledge, which is beyond its present level of knowledge, and when that needed knowledge can be found among experts somewhere else in the organization.

It is noteworthy that, according to Dixon’s classification, tacit knowledge can only be transferred through serial, far and strategic types, being absent in near and expert transfer.

**Tacit knowledge**

Sternberg (1999), in an article in his book edited together with Horvath, defines tacit knowledge as the kind of procedural knowledge that guides behavior, but is not easily available for introspection.

The main bottleneck in knowledge creation occurs when individuals know nothing or almost nothing; that is, before they have shared their tacit knowledge. For developing new knowledge by way of socialization, the group needs to be relatively small, so as to build a micro-community with its dense network of relationships. Within this community, through face-to-face communication, members better know each others’ personalities, interests and possible agendas, besides having a better understanding of acceptable forms of behavior (Egan, 1973). The development of the micro-community will be part of a collective memory where this kind of tacit knowledge allows group members to strengthen their relationships, to assimilate new participants and to deal with people leaving the team. As this knowledge becomes explicit, the group gains its own identity. The development and cultivation of communities of practice ranks first as the most important success factor in fostering knowledge management initiatives, according to a sample of organizations which pioneered in this domain, namely AT & T, Buckman Labs, Ernst & Young, Hewlett Packard, Microsoft, Shell Oil, and the World Bank, among others (Harkins et al., 2000).

When a community of practice (or community of learning) is suppressed, as DiBella & Nevis (1998) as well as Baumard (1999) observe, much of the tacit knowledge is lost, especially parts of it that are related to contacts among community members. As time goes by, the community’s ability to regenerate social relationships will gradually disappear. If one agrees that the ever-increasing speed of change affects organizational strategies, structures and processes, it is worth examining this loss of tacit knowledge in the light of issues such as the impact of tele-commuting and virtual offices on knowledge creation-based strategies.
Tacit knowledge is inextricably related to action and it is relevant to achieving important goals. Thus, it is frequently perceived as rules of thumb about what to do depending on the circumstances. Bickerstaff and Morris (1999), stress that one purpose of tacit knowledge is people development, by capturing core competencies at the smallest organizational level. They recommend the use of development tools and learning methods, such as, success stories, interviews, descriptions, observations and evaluations. Their findings were based on an extensive survey of participants in a Knowledge Management and Organizational Learning Forum at the 1998 International Conference of the American Society for Training and Development.

Argyris (1999) states that managers often use dual decision-making processes, roughly corresponding to logic (explicit knowledge) and intuition (accrued tacit knowledge). Thus, when pressed by time and faced with insufficient information to make a decision, they use more intuition than logical and explicit reasoning. If we observe the business world around us, time pressure and insufficient information are the norm; so, intuition and tacit knowledge in general are more often than not the true guidelines for managerial action. Hence, drawing on Weick’s (1995) statement that intuition is condensed expertise, a contradiction arises when confronting Weick’s view, endorsed by Davenport & Prusak (1998); and Dixon’s (2000) considerations about expert knowledge transfer, which circumscribe it to the explicit knowledge realm.

Tacit knowledge acquisition comes from experience, preferably from that one which is inserted in an environment where tacit knowledge can be necessary later on. McCall, Jr. (1998) list as the most powerful development tools for enhancing experience the extensive use of existing assignments that will prepare people to meet strategic challenges as well as the identification of effective coaches and role models, and the extensive use of temporary and permanent assignments to access them.

Sometimes, it is difficult to know if tacit knowledge fits a situation because its user has forgotten where and when he has acquired such knowledge. Besides, tacit knowledge changes with time and if the user does not remember when he or she acquired it, he or she risks to apply an outdated tacit knowledge, which can be harmful to his or her purposes. So, knowing when to apply tacit knowledge could be the difference between failure and success in a given situation. In the same fashion, unusual situations are better than routine when one wants to acquire tacit knowledge.
Archier & Sérieyx (1988), discussing the importance of the human resource system for more resilient companies, suggest that they try to minimize tacit knowledge drainage as well as to avoid discontinuity of knowledge, by creating programs where would-be early retirees use part of their last years in the company for mentoring young talented newcomers and for writing down or recording which past experiences could be worthwhile for future generations in the company.

Mainly in business negotiations, an important aspect of tacit knowledge is to anticipate how other parties will react to one’s actions. In competitive situations, it is relevant to be aware of competitors tacit knowledge, forecasting their actions and erecting defenses against their effects.

On the other hand, companies can be interested in creating barriers to avoid tacit knowledge dissemination beyond their boundaries, because if it leaks to competitors, it can be used against the organization that has created it, exposing its vulnerabilities. This is a very important issue when examining communities of practice, because they are generally created by the professionals themselves, with only a loose management sponsorship, and depending upon the extension of its membership, it is almost impossible to retain tacit knowledge within organizational boundaries.

Though the role of experience in acquiring tacit knowledge can be important, this is not sufficient and a personal predisposition to observation and learning is necessary, because what matters is the efficient way of using experience for acquiring knowledge that can be extracted from the environment. This is a limitation to forming a critical mass of knowledgeable people through tacit knowledge sharing techniques, because the success of sharing would depend on the previous identification of people with the right attributes, thus, preventing developing countries, such as Brazil, for example, from using tacit knowledge sharing techniques to their fullest extent for upgrading education and training.

Becker, Huselid & Ulrich (2001) observe how talent is important in building a sound strategic human resource architecture for sustaining organizational competitiveness. Presenting the case of GTE’s HR scorecard, talent is considered as one of its five strategic foci and split in:

- growth of the talent pool;
- selection, assimilation and retention of key talent;
- organization renewal;
-  high potential development; and
-  reduction of talent turnover rates.

McCall, Jr. (1998) also stresses the importance of managing talent within the organization and links this endeavor to tacit knowledge and competencies, summarizing the issue in five items, as follows:

-  to base the recruiting and early identification process on the ability to learn from experience;
-  to assess demonstrated competencies;
-  to assess the derailment potential;
-  to assess what was learned from each assignment; and
-  to establish a performance management system with development accountability.

Buckley and Carter (2000), when defining common knowledge, observe that sharing terminology, concepts and frameworks eases the exchange of knowledge among people, and that all these three aspects are applicable to tacit knowledge. However, professionals who work in isolation have few opportunities for acquiring tacit knowledge, because it is more difficult to share this knowledge merely by way of modern information technology tools, such as e-mail, Internet or teleconferencing. Towards this end, face-to-face interaction is generally fundamental.

Hatsopoulos and Hatsopoulos (1999) point to the fact that, in tacit knowledge, it is very important to know who are the right people from whom to acquire knowledge, because, due to the absence of codification, the use of bad models can be more harmful than the acknowledgment of the lack of any model at all.

A relevant observation, originally derived from medical practice, is that the more ambiguous are standards and situations, the more probable a wrong (incorrect or insufficient) use of tacit knowledge. Thus, Sternberg (1999) lists some limitations of tacit knowledge, as follows:

-  It seems to be rational and logical, not because it really is, but because we so deeply want it to be (Hatsopoulos and Hatsopoulos, 1999).
-  People and organizations often believe they are following guidelines for action, when they are not actually following them (Argyris, 1999)
Defensive reasoning, leaving people unable to perceive that what they are doing hinders the achievement of their own goals (Argyris, 1999)

Several preconceptions can interfere with the use of tacit knowledge, bringing into the situation prior beliefs that go against the tacit knowledge we have, resulting in our acting less than optimally (Torff, 1999).

Argyris (1999) summarizes this issue by saying that tacit knowledge is the very source of managerial effectiveness, but also the source of managerial deterioration. This deterioration occurs when tacit knowledge reinforces the “status quo”, becoming a conservative force instead of a change drive.

After examining tacit knowledge’s strengths and weaknesses, it is necessary to briefly discuss its link to competency and expertise.

**Strategy, Competency and Expertise**

Pfeffer & Sutton (2000); Quinn (1992) and Senge (1990), among others, point to the importance of knowledge, competency and expertise for sustaining competitive advantage.

Torraco (2000) states that knowledge ought to be managed differently from other resources, due to its technical and cultural dimensions. In this way, Herling & Provo (2000) stress that the strategic view of knowledge must consider not only how it is created and applied but also how it is leveraged for creating value for the organization. This leverage, according to Sveiby (1997), recognizes the strategic role of individual competencies, that is, of employees’ capabilities to act accordingly to several circumstances.

Competency must be observed from two viewpoints. The first approach is that of the organization’s core competencies, with their generic, universal character, to which Prahalad & Hamel (1998) attributed 3 basic traits: a) can contribute to the benefits perceived by customers; b) are difficult to imitate by competitors; and c) can be leveraged across different markets. Thus, core competencies are a unique mix of business specialization and individual attributes that shape their character. These individual attributes are called individual competencies. Parry (1998) defined this second
approach, privileging individual competency, as a set of factual knowledge, skills, experiences, attitudes and value judgments directly related to a determined work.

Another taxonomy of competencies that is worth mentioning is Vollmann’s (1996) distinction between 4 levels of competencies: distinctive, core, routine and outsourced. Distinctive competencies are those which cannot be easily copied by competitors, which sustain competitive advantage and assure higher margins. Core competencies are those common to direct competitors, but absolutely necessary to operate in a given economic sector or industry. Routine competencies are not only common to most organizations, but can be outsourced. The latter are better managed when assumed by a third party, instead of sapping the company’s energy and blurring its focus. Vollmann takes into account the complex multifaceted character of competency development and erosion, and the fact that that each competency domain within the organization (marketing, product engineering, logistics, and so on) could be at a different level of competency. Hence, each organization can be seen as a unique set of competencies.

Competency levels are in a dynamic flow. Thus, technological advancements of a competitor can challenge the distinctiveness of an organization’s competency, downgrading it to the core competencies’ level. For instance, Canon’s and Ricoh’s technological advancements in image digital processing have downgraded this former Xerox’s distinctive competency to a core competency in the copying and printing business. Likewise, prior core competencies, when widely shared, become routine ones; organizations, needing to sharpen their focus, are ceaselessly trying to seek new opportunities for outsourcing their routine competencies. In stressing this dynamic aspect, it is worth noting that this is not a one-way, top-down movement towards progressive downgrading of competency levels. Though less common, the organization’s strategic intent could point to new paths of unlearning former distinctive competencies and replacing them by new distinctive competencies, through planned innovation, targeted investments, mobilization of adequate resources; or by obtaining a new distinctive competence through strategic alliances (Spekman, Isabella & McAvoy, 2000); or even through mergers and acquisitions (Hall, 1995), although this kind of motivation has received scant attention in specialized books (Gaughan, 1999). An example of a strategic intent guiding the acquisition of brand new distinctive competencies was the case of the French group Vivendi (Générale des Eaux, up to 1996). With its more than one hundred years of tradition in sewage and water treatment, it bought, in 2000, significant stakes in Canal Plus (49%)
and in Universal, the music and entertainment arm of the Canadian group Seagram (The Economist, June 17- June 23, 2000:60). This move made possible, in few years, its repositioning as a key actor in content distribution in this new digital economy era and, at the same time, signaled its progressive abandonment of its distinctive competency of dealing with governments.

However, the conglomerate maintained its distinctive competency of servicing large communities, which should be valuable in servicing large subscriber databases. It is nowadays the world’s second largest media and communication group, ranks second in fixed and mobile telephony in France and has a joint venture with Vodafone Airtouch in order to set up Vizzavi, the largest multi-access portal in Europe.

Another example of radical change in distinctive competencies can be found in the outstanding, although short, success story of Mannesmann, a well-known German steel maker until the beginning of the nineties (The Economist, February 12 – February 18, 2000: 68). Mannesmann reshaped its strategic intent, exchanging the slow paced steel technology for entering the telecoms market, firstly by building a successful mobile phone base in Germany, extending it to other neighbor countries and finally by buying Orange, the third largest British mobile phone company and considered the best in quality service. This extraordinary trajectory was interrupted when Vodafone Airtouch acquired it in February, 2000.

Competency implies an ability to maintain a consistent performance level. It can thus be said that competency positively correlates with work performance, that it can be measured against predetermined standards and improved through training and practice. However, a problem lies behind those standards, which are set for a minimum acceptable performance level. Another issue, as Swanson (1999) stresses, is the existence of a gray zone between performance and some of its variables, as competency and expertise. There is significant disagreement between the different definitions proposed for the concept of performance. For instance, definitions vary from “execution of a work, activity, undertaking, etc., which needs competency and/or efficiency” (Novo Aurélio XXI, 2000:645) to “the valued productive output of a system in the form of goods or services” (Swanson, 1999). Holton III (1999) points out that performance is a multidisciplinary phenomenon; that each performance model has its own bias; that there is no unifying view of performance; that performance levels and indicators are confused; and that all this indicates the need of an integrated
model for all performance domains. However, it is worth noting that integrative efforts have been made in order to assess organizational performance, as seen in Kaplan & Norton (1996, 2001) and Hope & Hope (1996).

The strategic perspective, when examining core competencies, focuses on the importance and the development of these competencies. On the other hand, Leonard-Barton (1995) warns about the danger of core competencies, especially when they only have a technological basis, becoming core rigidities and causing a loss of organizational competitiveness. As far as individual competencies are concerned, the strategic perspective seeks to identify general competencies that can be assessed in personnel selection and development decisions. Zwell (2000), adopting a behavioral view, classifies them into 5 groups: task achievement; relationship; personal attribute; managerial; and leadership competencies. Task achievement competencies relate to performing a job well. Relationship competencies concern communicating with and working well with others and satisfying their needs; personal attributes are intrinsic to an individual and relate to how people think, feel, learn and develop. Managerial competencies relate to managing, supervising and developing people. Finally, leadership competencies are oriented towards leading an organization and the people who work, with a view to achieving the organization’s purpose, mission and vision.

Many companies, even when leaders in their field of specialization, have not yet identified their organizational core competencies and assessed behavioral competencies of their key personnel. One of the authors of this paper conducted, together with two other consultants, a two-day workshop, in December 2000, for the leading Brazilian and Latin American media audience rating company, focusing on organizational and behavioral competencies. Results obtained through intense participation helped not only to review its 2001 business plan, but, also, to reorient its human resources development budget towards a more competency-based and tailor-made one.

A sound approach to linking individual and organizational competencies, exploring theoretical and practical issues, can be found in Saint-Onge (2000), describing his experience in reshaping human resources management, in the scope of a knowledge capital initiative, at Clarica Life Insurance Co., a Canadian firm.
Concerning strategic perspective, core competencies cannot be erected on minimum acceptable levels of individual performance. That is why expertise is so important. Expertise is continuously built on outstanding individual performance. So, core competencies are built upon the complex synergy of expertise in various domains.

Expertise is the optimal performance level an individual is able to attain within a specialized domain of human activity (Swanson, 1994, apud Herling, 2000). Similarly to competencies, expertise encompasses value judgments, sets of knowledge and skills, seasoned experiences and problem-solving skills.

Nevertheless, different from competencies, which are generic and universal, expertise is specific to a domain. The critical factor of the strategic perspective on expertise is the development of capabilities and specific knowledge in a given domain. Expertise has another characteristic of its own: it takes a lot of time to develop, needing intensive and extensive training and practice. Some researchers establish a minimum threshold of 10,000 hour training and experience to be considered expert in a specific domain.

Although there is no overall consensus about what expertise really is, Herling (2000) identifies 3 key elements that are present in all other pertinent theories:

- It is a dynamic state.
- It is specific to a domain.
- The three components of expertise are knowledge, experience and problem solving.

Expertise, viewed as a dynamic state, is an internal process of continuous learning, characterized by ceaseless knowledge acquisition, continuous reorganization of information and ever refined problem-solving skills. Regarding its specificity, there is scant evidence that an outstanding expert in one domain could transfer his expertise to another one. For instance, a renowned brain surgeon could hardly have the same expertise in performing an orthopaedical surgery.

Herling (2000) also gives us some insights on the three components of expertise. Knowledge is an interactive component of expertise, but cannot be confounded with it, because both experts and non-experts can have knowledge, the difference lying in how much knowledge they have, how
integrated it is, and how efficiently it is linked to individual performance. As for experience, it relies very much on the kind, quality and quantity of events in which an individual has participated. Experience distinguishes between veterans and newcomers, but, taken solely, cannot distinguish between experienced experts and non-experts. After all, ten years of diversified experiences are qualitatively different from ten years of the same experience, repeated year after year.

From all we have previously discussed, we come to the conclusion that the key to understanding expertise is found in the individual’s propensity to solve problems. Regardless of the extent of the problem-solver’s previous experience, his or her originality in organizing available information is what makes the difference.

McLagan (1997) says that competency is an outcome, whereas expertise is a process. For instance, achieving a goal is to give proof of competency; achieving this goal by using nimbler, cheaper and more flexible processes is to give evidence of expertise. Herling (2000) states that expertise is displayed behavior within a given domain, in the form of consistently demonstrated actions of an individual that are both optimally efficient in their execution and effective in their results, while competency is distinguishable from expertise because its actions are minimally efficient in their execution, though both concepts converge to effectiveness of results. For instance, a lawyer who succeeds in freeing his client, convincing the jury of his client’s innocence, displays more expertise than another defensor who gets the same result by merely alleging lack of material proofs against him. Both attorneys were competent, but only the first one displayed expertise.

CONCLUSIONS
The results of the bibliographical research at issue in this article suggest that tacit knowledge is an important source of organizational sustainable competitive advantage, as well as a permanent source of innovation. Thus, it is up to organizations to acknowledge its value and to imagine how to use it best. Here lies the main challenge for an organization that aims at creating knowledge.

Considering that most of knowledge management tools are directed towards fostering explicit knowledge and these are generally very expensive and complex, it is evident that they are out of the reach of most local companies in developing countries, widening the knowledge gap between multinationals and the companies that do not belong to the USA - Western Europe – Japan tripod.
On the other hand, tacit knowledge sharing tools, although less studied, could help reduce this gap, when adequately used, enhancing competitiveness of local companies of developing countries.

Though organizational cultural values and practices foster or hinder tacit knowledge sharing, this link has not been sufficiently studied. Especially, the impact of organizational symbols, heroes and rituals on tacit knowledge deserves deeper inquiry. The same holds for the relationship between, on the one hand, national cultural dimensions, such as those pointed out by Hofstede (1996), namely, collectivism versus individualism, power distance, conflict avoidance, gender differences and the use of time, and, on the other hand, knowledge creation and tacit knowledge sharing.

The results also suggest that expertise is not an exclusive outcome of explicit knowledge, although tacit knowledge’s contributions to expertise need further inquiry. The confrontation of Weick’s (1995) observation about intuition, as being condensed expertise, with Dixon’s (2000) definition of expert transfer could probably provide some new insights on the link between tacit knowledge and expertise.

As expertise involves a time variable (hours of practice), an issue to be further explored concerns organizational and individual possibilities of speeding up expertise acquisition, namely by making use of tacit knowledge sharing techniques.

Another area of study could be the connection between tacit knowledge, expertise and early identification, development and retention of talents, in as much as these are, increasingly, the scarcest and the most necessary organizational resources. In the same way, it is worth examining the relevance of tacit knowledge for the development, maintenance, and retention of employees’ expertise in the light of present and future core competencies. This indeed seems to be an essential task for organizations that seek to maintain sustainable competitive advantages, although appropriate metrics deserves more attention. Buren (1999) proposes some indicators, which could be a good starting point: retention of key personnel; ability to attract talented people; replacement costs of key personnel; employee satisfaction; and employee commitment.
If tacit knowledge sharing is limited in practice by the size of micro-communities, a worthwhile research issue would be the impact of this kind of limitation on strategy implementation and on the design of new organizational structures and processes.

REFERENCES


