

KNOWLEDGE MANAGEMENT IN THE REAL ESTATE SECTOR: INNOVATION AND COMPETITIVE ADVANTAGE

***Gonçalves, Juliana Pinheiro ; * Bernardes, Maurício**

juliana.pinheiro@tecnisa.com.br eng.mauricio@tecnisa.com.br,

**TECNISA SA, Avenida Brigadeiro Faria Lima, 3144, 5º Andar, São Paulo,
SP, Brasil.*

ABSTRACT

In recent years, the Brazilian economic scenario has shown clear signs of stability, with increasing incomes and, at the same time, the expansion and enhanced flexibility of the credit supply combining to strengthen the country's construction market. Although this is a favorable scenario, it also presents enormous challenges to the companies, as they try to maintain the profitability of their businesses in an environment where there is a scarcity of resources, and particularly of specialized labor.

Meanwhile, customer expectations appear to be increasingly stringent, when it comes to purchasing a property, thus presenting a further challenge to Brazilian real estate companies in what is already a very competitive environment.

In this context, new forms of business organization and management are likely to emerge, based on managing existing areas of expertise and creating an environment that favors innovation, which to begin with will provide a competitive advantage but will subsequently become a necessity for the business to endure.

In the more competitive markets of the information age, companies that have managed to create differentials and obtain competitive advantages have been able to consolidate their strategies and manage their areas of expertise through Knowledge Management models that showcase the different means of generating, capturing, recording, selecting, transforming and disseminating content, thereby reinforcing one of their principal assets: intellectual capital. This asset plays a fundamental role in innovation and the sustainable growth of the business.

This work aims to present the experience in the practice of Knowledge Management of a Brazilian real estate company that, through innovative tools and models, has been obtaining significant results, in terms of brand development, profitability and customer satisfaction.

Keywords: Knowledge Management, Innovation, Results, Competitive Advantage

INTRODUCTION

Over the last decade, the Brazilian economic scenario has shown strong growth, with rising incomes and the expansion and enhanced flexibility of the credit supply, which has bolstered the local construction market. According to data from FIESP (Federation of Industries of the State of São Paulo), during the period 2009 to 2022, the Brazilian sectors that will show the highest rates of growth are non-metallic mineral products (6.7% p.a.), construction (6.1% p.a.) and resource extraction (5.7%). Over this same period, the construction

chain's share in the country's GDP will increase from 8.3%, in 2009, to 9.5%, in 2022, while employment in the construction sector will increase from 6.9 million, in 2009, to 10.2 million, in 2022. This represents the creation of 3.3 million new jobs.

Even with such an optimistic scenario, the challenges are considerable for organizations seeking to perpetuate their business in an environment where there is a scarcity of resources.

The market has faced up to the challenges by adhering to a process of constructive rationalization. According to Sabbatini (1989), *constructive rationalization is a process composed of actions that aim to optimize the use of material, human, organizational, energy, technological, time and financial resources available in all the construction phases.*

For such action to occur at all levels, it is essential that all the knowledge involved be discussed, registered and shared throughout the construction chain. In this way, it is possible to sustain the building culture of a given company despite a turnover in its technical staff over the years.

According to Thurow, as cited by Terra (1999, p.47), companies that are ahead of their competitors are creating a more organic network, whereby the absence of functional barriers is fundamental for the invention, design, manufacture, sale, logistics and services to be decided at the operational level of the organization. The effective performance of the network will depend on good communication between the different levels, which must all be in due alignment with the organizational strategy.

This paper aims to present business practices relating to the management of the knowledge (KM) and innovation of a company operating in the Brazilian real estate sector. Through this example, we show that, with innovative models and determinate tools, it is possible for the sector to achieve significant results, in terms of the brand, profitability and satisfaction, for both employees and customers.

KNOWLEDGE MANAGEMENT AND INNOVATION

The concept of Knowledge Management is unusual in its ambiguity, extraordinary in its depth, unfathomable in its rapid expansion and – best of all – it has no single owner. From a few seeds planted by a few of us twenty years ago, the framework and the practices are now growing exponentially, through the efforts of hundreds of thousands of practitioners and thinkers worldwide who practice what they teach in a very broad range of pioneering experiments. The sharing of knowledge about KM is unprecedented in history. KM is a “Linux” of management concepts. A ‘movement’ of people around the globe connected and contactable via the Net. (Sveiby, 2005)

Sveiby (1996) stated that people's learning within an organization takes on another dimension when it evolves from the operational perspective to a strategic perspective of creating new assets. He believes that, unlike in the past, the value of a company is largely determined by its intangible assets.

According to Davenport and Prusak (1993), academics, consultants and managers argue that information is the basic weapon in competition and is capable of transforming organizational structures and processes in this information age. However, they are careful to point out that the technology used by the IT platforms is no substitute for humans in the generating of information and knowledge.

Drucker (1994), as cited by Graham and Pizzo (1996, p.338), reminds us that the essence of management is the transforming of knowledge into something productive. He considers that this capacity for transformation has to be preserved over time, otherwise there is a risk of wasting resources and opportunities. Consequently, taking advantage of the existing resources in an organization is fundamental to people seeking, finding and utilizing the best practices and best processes, instead of trying to create that which has already been created.

Nonaka and Takeuchi (1995), as cited by Fugate, Stank and Mentzer (2009, p.247), go more deeply into the subject, adding that KM is not limited simply to the transferring of information. In their view, the effective communicating of the knowledge acquired within the business environment is a key instrument in the fine-tuning of a company's operations.

According to Davenport and Prusak (1998), the only competitive advantage that a company possesses derives from its collective knowledge, the efficiency with which it uses that knowledge and its willingness to acquire and use new knowledge. The authors go on to state that the spontaneous, non-structured transferring of knowledge is vital if a company is to be highly successful. Although the term "Knowledge Management" suggests a formal transferring of knowledge, one of the essential ingredients for its success is the encouragement to spontaneous exchanges that generate trust and consequent collaboration among the staff. These authors state that *probably the best knowledge market signals – though they are still imperfect – flow through the informal networks of practice that develop in organizations. Within these webs, people ask each other who knows what – who has previously provided knowledge that turned out to be reliable and useful. If the person you ask where to go for specific knowledge doesn't know an appropriate seller, she probably knows someone else who does know.* According to the authors, trust is one of the main solutions for breaking down some of the cultural barriers that inhibit knowledge transfer. They call these difficulties "friction" and propose some solutions that are summarized in the table below:

Friction	Possible Solutions
Lack of trust	Build relationships and trust through face-to-face meetings
Different cultures, vocabularies, frames of reference	Create common ground through education, discussion, publications, teaming, job rotation
Lack of time and meeting places; narrow idea of productive work	Establish times and places for knowledge transfers: fairs, talk rooms, conference reports
Status and rewards go to knowledge owners	Evaluate performance and provide incentives based on sharing
Lack of absorptive capacity in recipients	Educate performance and provide time for learning; cultivate openness to ideas
Belief that knowledge is prerogative of particular groups, not-invented-here syndrome	Encourage non-hierarchical approach to knowledge; quality of ideas more important than status of source
Intolerance for mistakes or need for help	Accept and reward creative errors and collaboration, no loss of status from not knowing everything

Fig. 1 – The most common frictions and ways of overcoming them (adapted from Davenport & Prusak, 1998).

Facilitating and encouraging knowledge transfer is a fundamental step towards innovation. Sveiby, Linard and Dvorsky (2002) highlight the importance of conversation in enabling KM to yield the sort of returns that are expected by companies.

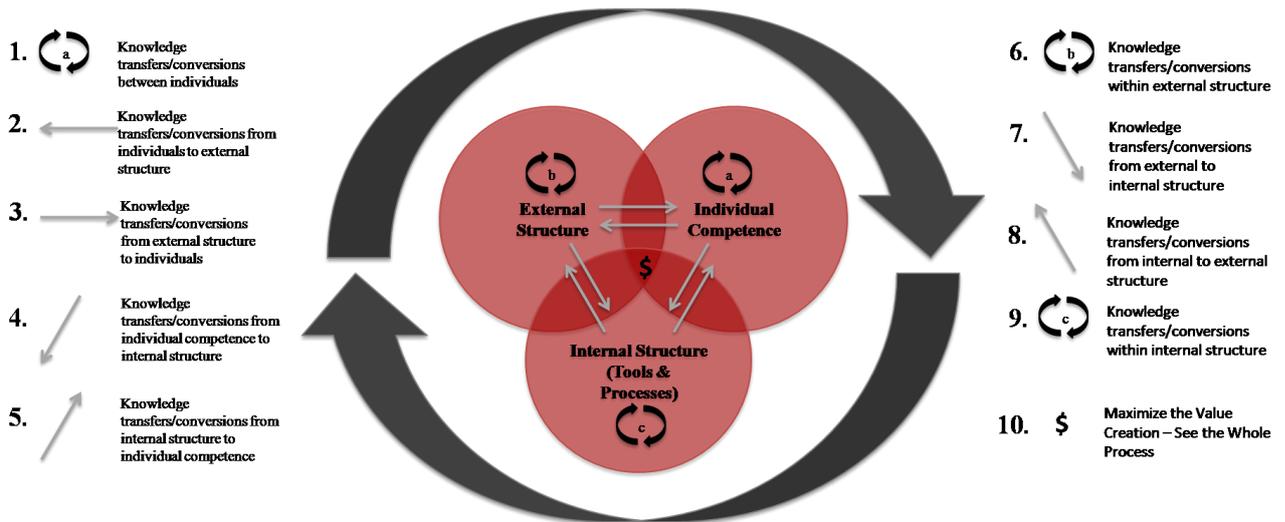


Fig. 2 – The ten knowledge strategy issues (adapted from Sveiby, Linard and Dvorsky, 2002).

Nonaka and Konno (1998) link the process of innovation to the tacit and explicit knowledge¹ already existing within an organization. The knowledge contributed by each individual, as part of the organization, needs to be collectively disseminated. According to the authors, this process, which includes socialization, externalization, combination and internalization, was the path encountered by the Japanese corporations for creating and consolidating their corporate cultures.

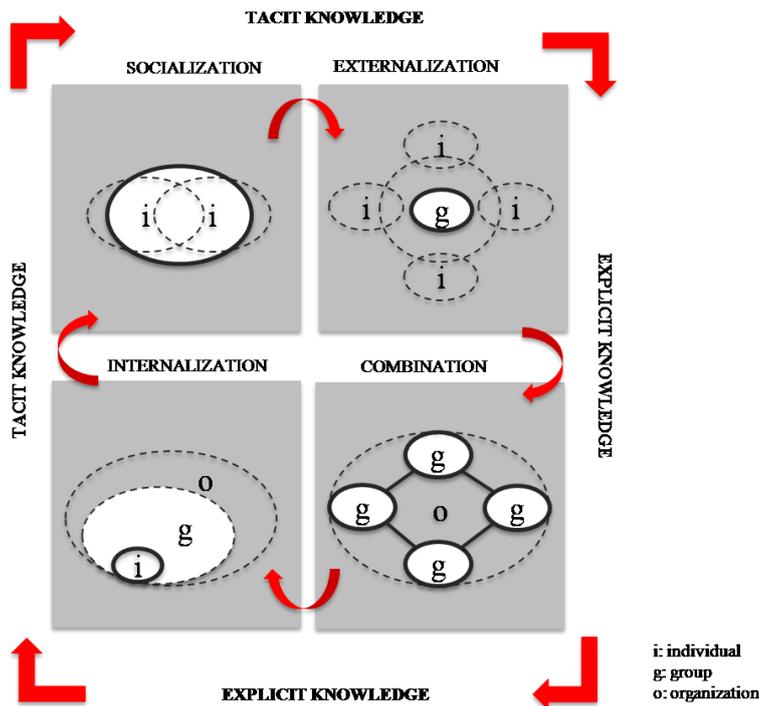


Fig. 3 – Means of transforming knowledge (adapted from Nonaka & Konno, 1998).

Terra (1999) analyzes each stage of the process:

¹ According to NONAKA and TAKEUCHI (1995), tacit knowledge is that which is hard to formalize and communicate, since it is the fruit of personal experience. Explicit knowledge, however, is objective and easier to codify, in other words, to formalize through words, numbers and formulae, for rapid transmission on a large scale.

- Socialization: experience is shared and tacit knowledge is developed. In practice, this will occur through workplace dynamics, informal and brainstorming sessions, customer interaction and other activities.
- Externalization: the most important means of conversion, since it enables the creation of new concepts. In the case of Japanese corporations, it involves converting tacit knowledge into explicit knowledge, by means of frequent communication through metaphors, analogies, concepts, hypotheses and models.
- Combination: involves the use of media formats such as documents, formal meetings, phone conversations and computer networks. By the same token, formal education falls within this type of conversion. It is in this stage of the process that the first prototypes and models are developed.
- Internalization: at this point, organizations experience the practical results of the new knowledge, as it is applied in the operational sphere.

Once the aforementioned process is occurring, it is necessary to sustain it, so that the knowledge generation cycle does not stagnate. To this end, it is important that the organization provides a favorable environment for successful knowledge management. According to Davenport and Prusak (1998), there are nine factors that are key to success:

- A knowledge-oriented culture
- Technical and organizational infrastructure
- Senior management support
- A link to economics or industry value
- A modicum of process orientation
- Clarity of vision and language
- Non-trivial motivational aids
- Some level of knowledge structure
- Multiple channels for knowledge transfer

From this bibliographical review, it is clear that the KM process is not static and that there is no simple formula for success. Davenport and Prusak (1998) emphasize that *successful knowledge management requires an exceptional combination of human, technical and economic skills*.

According to Zhang, Mao and Abourizk (2009), KM is particularly important in the construction sector, which is extremely competitive, with tight margins, complex production procedures, and highly specific, non-standardized projects.

Other authors emphasize the importance of knowledge in the real estate business. Miozzo and Dewick (2002), for example, when discussing the process of technological development in European construction, emphasized the structure provided by the companies. They highlighted, for example, the effectiveness in Switzerland of the companies' internal mechanisms for coordinating, evaluating, financing and disseminating innovation. And they pointed out that, in France, some construction companies employ sophisticated KM practices, particularly for managing their technological research and development. A similar situation for the structuring of technological development can be found in the United Kingdom, where companies organize discussion forums, technical libraries and databases relating to the topic.

CASE STUDY OF A BRAZILIAN COMPANY IN THE SECTOR

The company chosen for the case study has been active in the Brazilian market for the last 35 years. In 2007, it launched its IPO on the São Paulo stock market (BM&GBOVESPA). That same year, it established a portal – the Knowledge Management Portal – on its intranet, where employees can access the best engineering practices. In 2008, recognizing the importance of intellectual capital to the success of the business, the R&D department studied new Information Technology (IT) environments, with a view to migrating the existing content, so that the staff could not only access what was already there but add their own comments about their experiences and even the collective creation of material. In 2009, they chose the wiki platform, which met all the company's requirements at that time:

- Simple architecture that is easy to browse;
- Possibility of creating, revising, indexing and publishing documents through remote controlled access;
- Traceability of system usage;
- Possibility of extracting managerial reports;
- Environment that preserves the recorded information;
- Automatic backups;
- Direct communication channel with the system administrators;
- Alternative paths for obtaining the same information;
- Possibility of customizing the portal content;
- Fast implementation of the system;
- Streamlined cost of development and implementation.

In 2010, following its desire to provide its customers with more precise answers, the company inaugurated a platform based on the open innovation concept and threw questions at the virtual community aimed at gauging the profile of its consumers. The online platform allowed user interaction, so that they could submit their ideas, comment and even vote.

In 2011, the company launched a project to stimulate partnerships with suppliers and innovation, involving a regular event in which the doors of the company are opened to new suppliers and technical partners have the chance to present their projects, innovations and distinctive services. There are meetings and presentations that bring together new suppliers and partners and various different company departments, all coordinated by an innovations committee. The company affirms that the aim is to democratize access and create a fertile environment for new ideas, processes and knowledge capital.

That same year, the company started taking a broader view of knowledge management and its significance for the business, where previously its importance had been limited to R&D, where its KM began. All knowledge generated there was transformed into a report and stored in the wiki system for collaboration with other departments. The flow was organized as follows:

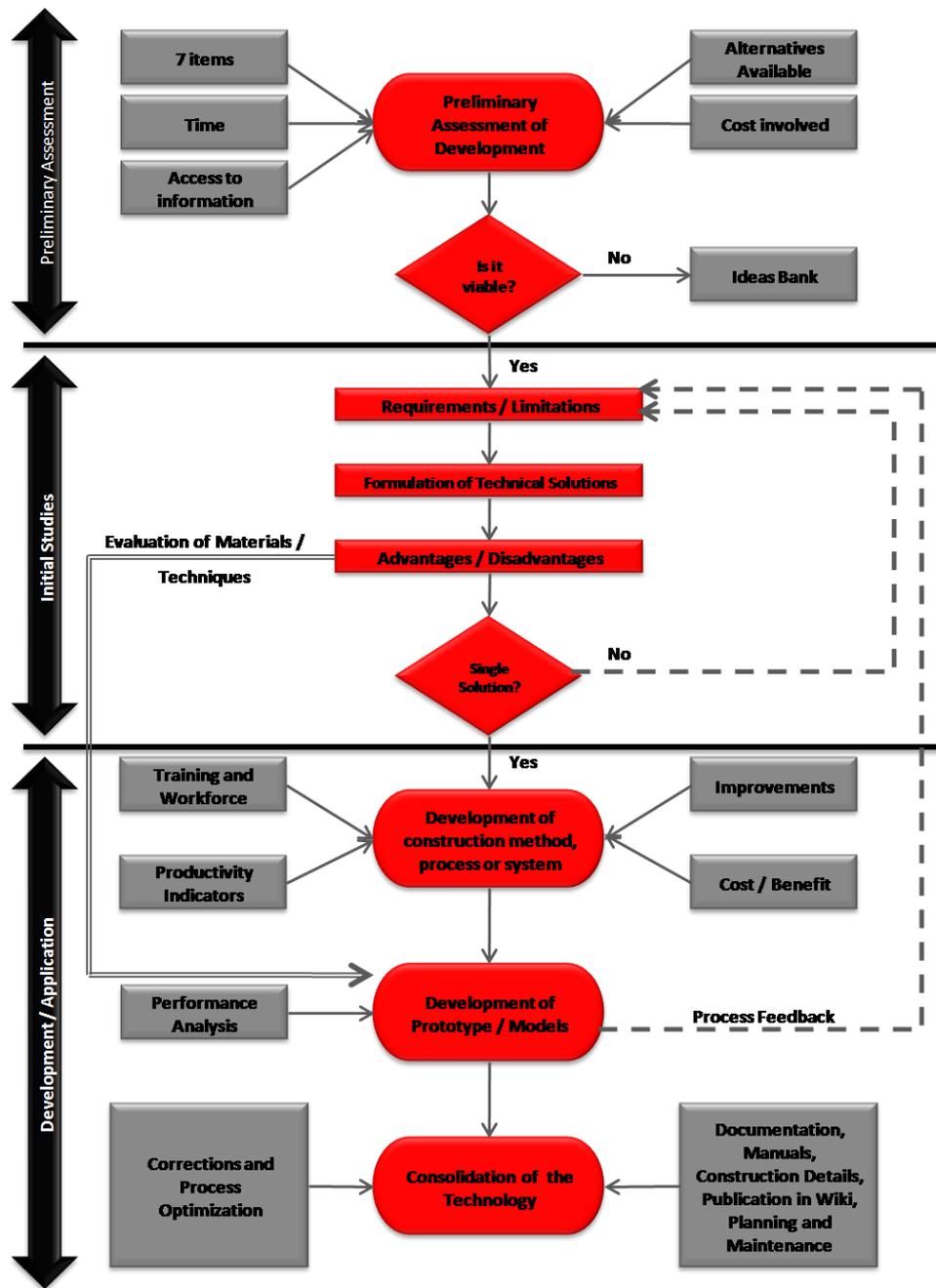


Fig. 4 – The company’s R&D flowchart

Now the approach is broader, with R&D assisting in the decision making process of other departments in relation to projects and developments, drawing on all the sources of ideas, developing them and managing them, as follows:

- Gathering ideas: the R&D department is responsible for drawing on all sources of knowledge.
- Selection: the R&D department, together with the Developments department, is initially responsible for analyzing all the knowledge sources. Ideas may be discarded, or selected for the next phase. The selection criteria are based on generating value for the company, in terms of the seven items of the R&D flowchart: product quality, the company brand, product performance, overall project cost, execution period, safety and working conditions and operational sustainability.

- Development: an R&D specialist studies the viability of the idea, assisted by the area manager, who acts as a tutor during this process.
- Technical approval: the initial study is analyzed by the R&D team, which adds its own experience, references, etc. The matter is discussed at the weekly meetings. The study is consolidated in a technical report that is made available throughout the company, on the wiki portal.
- Development approval: if the idea is technically viable, it is then analyzed by the Developments department management, who assess on a case by case basis whether the matter is viable for the business as a whole.
- Prototype phase: if the idea is approved in the preceding stage, a prototype will be developed, whereby the interfacing with other systems, services and products will be evaluated. Training of the team involved is carried out and the entire process is monitored.
- Enterprise phase: once the prototype has been approved, the idea can be introduced in all the company's developments, with assistance from the team trained under the previous phase.
- Standardization phase: the idea is incorporated within the company guidelines, becoming part of the construction culture or a distinctive feature of the company.

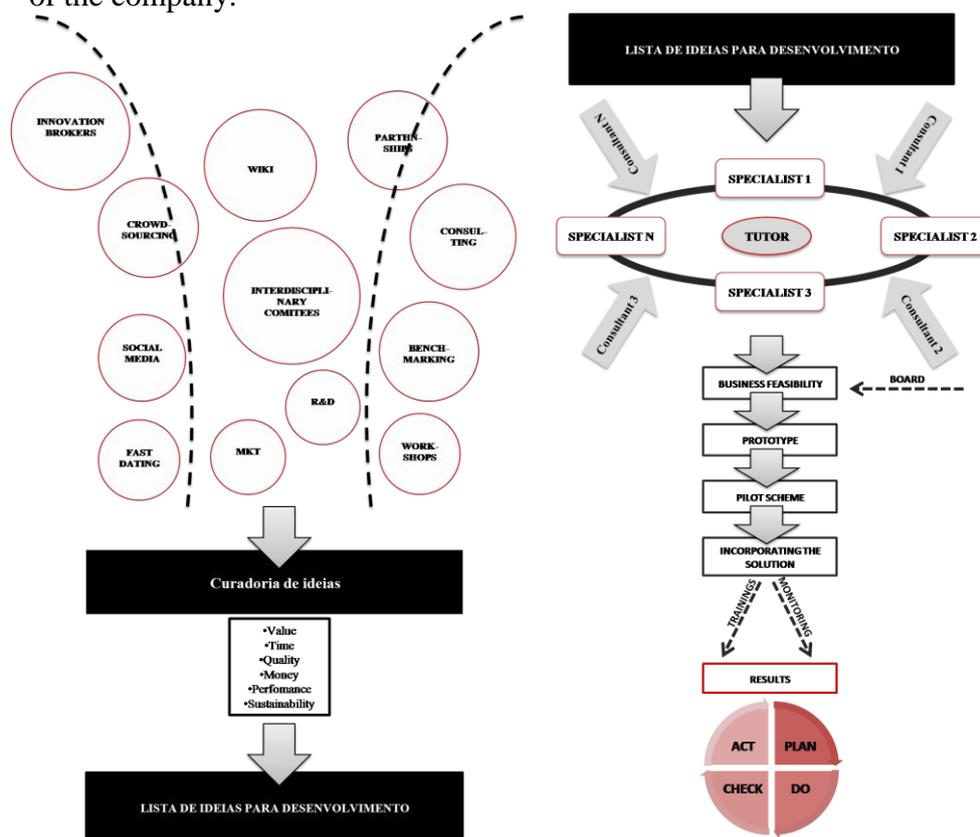


Fig. 5 – The company's KM flowchart

RESULTS ATTAINED

The company has been able to organize and put into practice the skills, abilities and experiences accumulated to support its growth and business results. The enterprise considers the intellectual capital as its greatest and most valuable intangible asset. As a result of this view, KM is considered strategical

for the continuous improvement and occurs through the exchange of experiences among employees, suppliers, customers, community, market and even competitors. These contacts generate ideas for more efficient construction solutions, in terms of economic and environmental aspects, as well as improvements that add value and provide more comfort and savings to customers.

The sources of innovation used in recent years have brought promising results. From the platform based on the open innovation, the company has already selected 30 ideas to be implemented from more than 1000 ideas posted so far. Besides that, the platform keeps promoting an important role by indicating consumption tendencies and aspirations of the Brazilian market. In addition to this, the R&D department has assisted the company in its quest for innovation, with KM playing an essential role throughout this process. The following chart shows the company's spending on R&D and the results, in terms of savings, during the period 2007 to 2010:

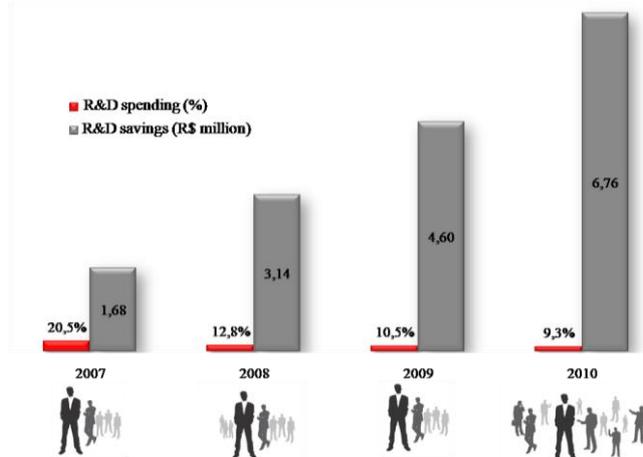


Fig. 6 – Percentage of spending on the R&D team and the savings this has generated (in R\$ million). Obs.: the 2011 data have not yet been disclosed by the company.

Note that, despite the increase in the size of the team, the performance has been increasingly efficient, since the spending percentage has declined during the period, even though the savings have grown. There has also been growing use of the KM portal, as a result of the program launched in 2010, involving breakfast meetings to present the portal and discussions about the topic. The company revealed that the number of hits doubled between 2010 and 2011, due to the encouragement and interest in the content that is regularly posted to the portal.

FINAL CONSIDERATIONS

The company today is a benchmark for innovation, not only for other companies in the sector, and its intangible assets indicate that it is ahead of the competition. A good indicator is that 21% of sales happen by indication of satisfied customers. Since the structuring of KM in areas where knowledge is a vital resource, it has been possible to achieve efficient results that are in alignment with the company's strategies. It is essential that each company understands its own needs before embarking on the structuring of the KM process, which should ideally reflect the corporate vision, mission and values. Some guidelines proposed by authors who are specialists in the matter may help in planning the process.

- the place to start is with high-value knowledge;
- begin with a focused pilot project and let demand drive other initiatives;
- work across multiple fronts all at once (technology, organization, culture);
- don't put off what gives you most trouble until it's too late;
- get help throughout the organization as quickly as possible.

Besides that, the company:

- needs people that are revenue creators, not cost items;
- treats its clients individually;
- builds company strength through skilled individuals;
- develops the organization through developing the employee's know-how
- has managers who are formal as well as informal leaders.

REFERENCES

Davenport, T.H. and Prusak, L., 1993. Blow Up The Corporate Library. *International Journal of Information Management*, 13, p.405-412.

Davenport, T. and Prusak, L., 1998. *Working Knowledge: how organizations manage what they know*. Boston: HBS Press.

FIESP – Federação das Indústrias do Estado de São Paulo, 2010. Brasil 2022: planejar, construir, crescer. *Construbusiness 2010: 9o Congresso brasileiro da construção*, [online] Available at: <<http://www.fiesp.com.br/construbusiness/pdf/apresentacoes/ConstBusiness2010Portugues.pdf>> [Accessed 09 December 2011]

Fugate, B.S., Stank, T.P. and Mentzer, J.T., 2009. Linking improved knowledge management to operational and organizational performance. *Journal of Operations Management*, (27), p. 247–264.

Graham, A.B. and Pizzo, V. G., 1996. A Question of Balance: Case Studies in Strategic Knowledge Management. *European Management Journal*, 14, (4), p. 338-346.

Miozzo, M. and Dewick, P., 2002. Building competitive advantage: innovation and corporate governance in European construction. *Research Policy*, 31, p.989-1008.

Nonaka, I. and Takeuchi, H., 1995. *The Knowledge Creating Company*. New York: Oxford University Press.

Nonaka, I. and Konno, N., 1998. The concept of 'Ba': Building foundation for Knowledge Creation. *California Management Review*, 40(3), p.40-54.

Sabbatini, F.H., 1989. *Desenvolvimento de métodos, processos e sistemas construtivos: formulação e aplicação de uma metodologia*. Ph. D. University of São Paulo.

Sveiby, K., 1996. Transfer of Knowledge and the information processing professions, *European Management Journal*, 14(4), p.379-388.

Sveiby, K., 2005. The New Organizational Wealth. Sveiby, [online] October. Available at: <<http://www.sveiby.com/articles/Koreanewforeword.htm>> [Accessed 20 December 2011]

Sveiby, K., Linard, K. and Dvorsky, L., 2002. Building a Knowledge-Based Strategy A System Dynamics Model for Allocating Value Adding Capacity. Sveiby, [online] October. Available at: <<http://www.sveiby.com/articles/sdmodelkstrategy.pdf>> [Accessed 20 December 2011]

Terra, J.C.C., 1999. *Gestão do conhecimento: Aspectos conceituais e estudo exploratório sobre as práticas de empresas brasileiras*. Ph. D. University of São Paulo.

Zhang, X., Mao, X. and Abourizk, S. M., 2009. Developing a knowledge management system for improved value engineering practices in the construction industry. *Automation in Construction*, 18(6) p.13.