

The importance of people management to the culture of innovation in a Brazilian service firm

***Abstract:** This paper presents a case study to show the importance of people management for innovation in a Brazilian service firm, whose services and business operations are heavily based into professional knowledge and skills. For companies who provide technological services is essential to have a culture of innovation based on technical improvement and professional development, as well as they must have efficient processes for motivation, retention and management of their talents' creativity. This study also discusses theoretical concepts about the process of innovation in Knowledge Intensive Business Service - KIBS, involving knowledge and creativity management.*

1. Introduction

Developing a culture of innovation is an essential part of the strategy for the organization that is seeking competitive advantages in its industry. Services companies also share that goal, mainly those, which develop new solutions and services. According to Kubota (2009), when talking about innovation, the service sector, for long time, was marginalized in economic studies; however, he points out that the emerging literature on services is well convergent in citing this sector as innovative. Despite its innovative features, some authors (HOWELLS, 2009; POTTS, 2007; SUNDBO, 1997) consider innovation in services less technological than the one developed by the products industry, mainly because it is focused mainly on innovations for organizational processes.

This apparent lack of technological innovation is even a misconception when looking at technology services companies, also called KIBS - *Knowledge Intensive Business Service*. This false feeling is due to fact that the largest part of their projects, commercial or research, are aimed at finding solutions to problems arisen in their customers' environment. In other words, KIBS generate business value from their projects, which usually solve technological challenges posed by industry. Thus, KIBS are an important links of innovative value chains.

Typically, innovations pursued by service companies involve people management and organizational processes improvement. According to Potts (2007), expenditure on R&D in a services company are less important than in a manufacturing. Services are not focused on the development of new products; they are

devoted to produce new services, which are based mainly on human capital assets. Knowledge, experience, ability to learn and create new solutions are the main attributes expected from employees. Together, they contribute to improve organizational innovation capabilities. In that context, KIBS acknowledge that it is more important to invest in communication technologies, and on the improvement of the skills and abilities of their employees, who have a key role in the service innovation process.

Innovation for KIBS requires an entrepreneurship posture, which has to be part of their culture, and has to be adopted as a significant guide to innovation for all employees, who develop together new solutions for their clients. As stated by Drucker (1986), innovation is the specific tool for entrepreneurs; the process by which they exploit change as an opportunity for a different business or a different service. In KIBS, a favorable environment and tools for innovation, such as knowledge, should be available to all employees.

For these reasons, this paper intends to argue that KIBS are really innovative, and that their processes for innovation and competitiveness have to be beyond the limits of an R&D area, and have to favor an effective people management, as well as creativity and knowledge management, which are essential processes to achieve a culture of innovation in these companies. To show justifications for the importance of people management for preserving a culture of innovation in service companies, this paper is organized as follows: Section 2 presents a brief theory on KIBS and its peculiarities for innovation. The innovation processes composed of technological and partnership management, essential for innovation in service firms are described in Section 3. Section 4 presents the importance of people management as well as knowledge and creativity for developing an innovative culture. In Section 5, we present our study case, the Brazilian company that provides engineering and software services, and section 6 shows the final considerations of this application paper.

2. The role of the R&D and Innovation in services companies

Some technological services companies, known as KIBS, are based mainly on services with high value which is obtained through knowledge and specific professional skills - intellectual capital. The KIBS rely on specialized areas of knowledge to provide its users and society itself, specific products or services (LI, QIAN and YE, 2009).

The name KIBS has been around for over a decade, but only recently began to be studied by academics because of perception that service sector influences directly in the economy of the countries. For Muller and Zenker (2001), the importance of KIBS increased due to its role in the "Knowledge Economy", because these companies are responsible for much of the production and dissemination of knowledge: they develop, apply and combine different types of knowledge, sometimes on generic technologies, for solving real problems. The KIBS are usually supplying inputs to the business process of other organizations and industries, public or private, so they are considered primary suppliers of knowledge and information, and sources for increasing business competitiveness (MILES, KASTRINOS and BILDERBEEK, 1995).

Muller and Doloreux (2009) define KIBS according to three main elements:

- The term **business services** refers to specialized services that are demanded by other companies and they are not consumed internally;
- The **knowledge intensive** phrase can be interpreted as skilled labor or represent the conditions for transactions between the service provider and its user;
- The term **knowledge intensive firms** refers to companies that undertake intellectual complex operations, where human capital is the dominant factor.

Innovation in services is seen as a precursor and facilitator of innovation in the industry, because the service company helps the industry become more competitive with efficient processes that allows it to bring new products to market faster (KUBOTA, 2009). This collaborative relationship between industry and services does not mean that the R&D and innovation are performed the same way in these two kinds of companies, as shown in Table 1. Thus, it is observed that while the focus on R&D manufacturing is to develop new products, in KIBS the R&D focus is to develop organizational processes to facilitate the generation of new knowledge to create solutions demanded by customers. Additionally, according Sundbo and Gallouj (1998), innovation in service tends to be more incremental than radical, because the development processes services evolve more rapidly, only often suffer only minor changes. Innovation in services may be a new service, new procedure for the service delivery or the introduction of new technologies to solve problems of their clients. Another difference is that, in many cases, services can not be stored - they are produced at the time of consumption (GRÖNROOS, 1990). This means that the process can not be completely separated from the product, concluding that it is difficult to change a product without altering its process of development.

Thus, the service innovation is usually large in order to alter many elements in the production process and product simultaneously. Regarding the results, we note that in manufacturing a key part of the knowledge generated is codified knowledge in the form of products, while in KIBS most expertise to build solutions for customers are in the minds of teams project as tacit knowledge and intangible product.

Table 1: Differences in KIBS and manufacturing to R & D and innovation

	Services – KIBS	Manufacturing
Results	Tacit knowledge and intangible product	Knowledge encoded in the form of products
R&D Focus	New knowledge and organizational processes	New products
R&D Department	Least Important	Most important - prototype
Kind of Innovation	Incremental	Radical
Adaptability	Faster	Slower

(Source: Authors)

Despite the differences between business services and products, it is observed that the service companies have their role in the supply chain (suppliers, customers and producers), innovating and thereby contributing to the development of the economy. In this sense, there is a trend of large companies outsourcing parts of their R&D processes for KIBS, which already has the focus on knowledge.

3. Innovation process in service firms

Usually, the process of innovation is directly connected to R&D department of a company. In a KIBS, the purpose of R&D and Innovation area is beyond the portfolio management of research projects that will be transformed into new services which will later be put on the market by the company. In the case of a service company, a project should be implemented not only focusing on the final product, but in all learning generated during its development. And the innovation process only occurs when the knowledge generated by researchers is transmitted to the teams who execute and deliver solutions to the clients. Thus, it is important that companies have adequate infrastructure to manage knowledge created internally or acquired through partnerships, programs to support organizational learning, so that KIBS can provide increasingly innovative services.

The R&D department must also act as a facilitator for the dissemination of knowledge within the company. He should be in direct contact with other areas like sales and marketing, engineering, operations, and especially, human resources. The main processes for innovation in KIBS can be divided into technology management, partnerships management and people management, which will be discussed in the next section.

The technology management is responsible for taking care of the technological environment within and outside the organization. This environment consists of institutions involved in the creation and application of knowledge in the development of products, processes and services. According to Narayanan (2000) technology management should be focused on the organization's strategy for selecting technology, guided by the purpose of creating value for its investors. The National Research Council, in 1987, defined the management technology as a composition of engineering, science and management disciplines to plan, develop and implement technological capabilities to achieve the strategic and operational objectives of the organization.

For the selection of technologies that are aligned with the goals and strategies of the organization, activities such as forecasting and technological vigilance are important. Technological vigilance is the process of capturing, analysis, dissemination and exploitation of scientific and technical information useful to the organization. This process also warns about threats to the business or to detect new business opportunities. The forecasting process seeks to discover new ideas that guide the development of future products or processes for the organization. Trends in technology should be effectively observed and considered, and the basis for the survival of businesses services. Prospecting activities and technological vigilance usually make use of maps and technical profiles that provide an overview of what is happening in the industry and also monitor the technological trajectory of the firm.

Several studies on the firms organization demonstrated the advantages of the partnerships composition to speed the innovation process (DE BACKER, LOPEZ-BASSOLS and MARTINEZ, 2008, OECD, 2008; ROBINSON and PROPP, 2008). Chesbrough, Vanhaverbeke and West (2010) combine the concepts of collaboration strategy with the open source software development process and create the paradigm called Open Innovation, assuming that companies should use the internal and external knowledge to improve their innovation. Currently it is very common to see partnerships between departments, companies (CLOODT,

HAGEDOORN and ROIJAKKERS, 2010) and between companies and research centers, for example, universities (ETZKOWITZ and ZHOU, 2006) to develop new products, processes or services.

Partnerships management among companies occurs frequently when they need a new technology that cannot be developed by a single company because there is a lack of knowledge or resources. Typically this knowledge must be acquired from multiple areas of study which makes the development of new technologies more complex.

In an attempt to overcome the barriers to development of complex technology, reduce costs and share project risks, the model of open innovation and research networks are an option. The role of R&D as the center of this complex innovation process must be linked closely with the science, requiring for a greater interaction between R&D departments and institutions that promote the advance of human knowledge, such as universities and research institutes. This partnership is an important contributor to industrial innovation, in other way, the academic research would be hardly transferred to industry researchers.

Other advantages found in the collaborative process of developing new technologies are (PIRES and URBINA, 2009):

- Multiplication of skilled human resources,
- Optimization of financial and physical resources,
- Reduction time to implementation of R&D projects,
- Government incentives to support research and innovation.

Furthermore, the formation of partnerships reflects the Social Capital of the company that represents the organization's ability to establish relationships of trust and cooperation. These relationships allow it to access the collective and individual knowledge, which brings the important common benefits cited above. The definition of Social Capital, in the synthesis from Milani (2004) refers to the set of resources accessible to individuals or groups as a network of mutual knowledge. This network is a structure whose social relations, norms and conditions of trust that helps to develop coordination and cooperation mechanisms and to contribute to partners' growth.

Despite the advantages, collaborative development is still a touchy subject within the organizational strategy. It is not always easy to organize the innovation shared process. What should be done internally and how to exploit external knowledge are questions that must be answered. According to Chesbrough,

Vanhaverbeke and West (2010), this format requires that collaboration partners should be committed and should be aware of their responsibilities for the possible success or failure of the project, and therefore they should actively participate in the decision-making processes involved in innovation. Nowadays, in partnerships for technology development is very common to see companies joining the KIBS products to leverage its innovation process.

4. People Management and the Culture of Innovation

The previous management processes are essential tools for services companies become effectively innovative. However, the base of KIBS is people, they are responsible for the knowledge necessary for the company's survival. Typically, a technology services company does not have large fixed assets.

Discussing the process of human resource management in organizations is a delicate issue, since each company has its own culture, mission, values and management models. However, some guidelines are important to service firms: improvement of the learning skills of employees, management of creativity and motivational and retaining talent programs. According to Angel (2006) what defines the innovation culture is: (i) the degree of incentive to sharing ideas within the team, by removing possible barriers, (ii) expanding horizon of employees, and not only address the internal needs, (iii) creation of an environment conducive to creativity and intellectual satisfaction by identifying the professionals who fit their skills or not for specific activity, and (iv) setting criteria to stimulate increased performance and continuous improvement. Anyway, make your frontline leaders trained to seek what is best for their team, for themselves and, in consequence, for the company.

The organization must also establish initiatives to promote creativity as a mental process that helps generate new ideas and the ability to think in an unusual way to solve a particular problem. This is all important because, unlike traditional products industry, which mainly depends on the entry of financial capital and natural resources, the production process of KIBS depends on the ownership and disposition of knowledge, *i. e.*, people. The big difference among the several knowledge-based businesses services is their ability to produce it, protect it, share it and apply it more efficiently. Knowledge production involves invention, creation, innovation and replication of knowledge.

Although there are information systems that help the storage of existing knowledge in the organization, losing a specialist can result in loss of competitive advantage for KIBS, this is because knowledge was not widespread or well protected, or because this person can work for competitors bring new and even more innovative solutions for them. Thus, motivation and retention programs, the benefits and wages are very important.

People management is the basis for maintaining an innovation culture through improving the skills of team, encouraging creativity and investing in leadership.

4.1. Knowledge and Competences Management

Competences and knowledge management is essential in technology companies that are located in environments of rapid technological change. Edith Penrose was one of the first researchers to accurately highlight the importance of knowledge inside the firm as a generator of new technological opportunities and competitive dynamics. According to her, the opportunities arise from the company experiences and the knowledge acquired and developed over time through formal training and practical (SZMRECSÁNYI, 2001).

Service innovation requires a structured process of knowledge and competences management, because it facilitates the flow of the information across the company. This kind of innovation cannot occur in single events, but should generate patterns. The trend is that knowledge in services is easier customized and allows its reuse (SUNDBO, 1997).

The knowledge management is defined by Moran (1994) as a set of processes that govern the creation, dissemination and increase of knowledge within organizations. Knowledge represents "the capacity to act" and it is dynamic because it lives in constant transformation; humanistic because it depends on the interaction between people; and, contextual because an information that applies at a time will not necessarily be applied in another (AZEVEDO, 2002). Due to this characteristic of humanistic knowledge management, this subject is often treated together people management. Sveiby (2010) presented in his study, besides the positioning of knowledge as an object that can be handled by information systems, a vision of knowledge management with personnel management. He understands knowledge as a process that leads to the creation and organizational learning skills, thereby enhancing the proximity of the two managements.

Efficient management of knowledge promotes the development of core competencies in the company. Prahalad & Hammel (1990) define core competencies as a result of "collective learning in the organization," in particular regarding to questions of how to coordinate the different processes, as well as the integration of multiple streams of technologies. The competences once developed allow the perception of new needs directly stimulating the generation of new knowledge. The management of knowledge and competences are complementary and feedback into an interactive process of learning within the organization (CARBONE *et al*, 2005). Therefore, for organizations where the development of new products and technologies is considered an essential competence, the R&D and innovation management cannot exclude the knowledge and competences management to support processes.

4.2. Creativity Management

Creativity management is one way to improve the base of knowledge inside the organization. Companies develop innovative strategies to stimulate the creative capacity of its human resources in order to develop innovative products or services. Organizations that maintain an environment conducive to creativity can motivate their employees and generate new innovative design from the ideas and opinions.

A business concern with its human resources and encourage of learning and creativity processes represent essential sources for the organizational innovation. Thus, we can say that the competences and knowledge management is an important tool for achieving innovation in KIBS services.

However the knowledge learned does not come only from inside, the company must be vigilant to what happens outside its boundaries, what its customers are demanding or its competitors are doing.

5. A case study of Brazilian Service Company

In order to illustrate the concepts described earlier, we chose a Brazilian service company strongly based on knowledge as a case study.

The company was founded in 1989 to provide services in the area of simulation, optimization and advanced control for process industries. The company is dedicated to the issues at the state of the art on information technology applied to Oil & Gas, Pulp & Paper, Metals and Mining. Currently, the company is

part of a multinational group and it is a very recognized organization in Brazil and abroad for its efficiency, agility and innovation in providing solutions in engineering and IT.

In 2008, it was formally created an R&D center in order to accelerate the development of company core competences. The initial purpose was to coordinate research projects and partnerships to develop new technologies for its services and to improve its core competencies, aligned with the company's strategic plan. In the course of the projects execution, it was noted the importance of a department to take care of issues related to production of new technologies, such as the Intellectual Property subject. The company has always been a concern to encourage their employees to study new technologies and to publish their knowledge, as a means of disseminating its brand. Today, the research area is responsible for identifying potential patents and software copyrights. Furthermore, along with the Corporate University, it approves publications written by their employees.

The Corporate University was established to support employee development and encourage them to continue to study and specialize. The company continually invests in technical and managerial training, postgraduate courses, language, masters and doctorates.

These opportunities for professional development added to other initiatives such as the company's concern for the welfare employee and social-environmental responsibility is essential for retaining and motivating talent. Over the past 10 years, the company has emerged in the list of best companies to work and in 2009 and it was elected as the most innovative company in Brazil.

This award was a result of the policy of innovative services used in its projects, researches and commercials. As a KIBS, knowledge is disseminated throughout the company, so it is important that the R&D has interfaces with other areas such as Sales and Operations. Besides encouraging creativity and dissemination of knowledge has key role for a service company that is innovative. The main focus of research projects in services is, also developing a new product or process, generate core competences for the company. However, these competences become innovation only when they are brought to the market and felt by its customers, so it is essential that the knowledge generated by researchers to be transferred to the operational team. Thus we can conclude that a project was successful or not.

This point leads to another complex issue: how to measure innovation in service? Some studies in the literature (SUNDBO and GALLOUJ, 1998) say that the traditional indicators used in the manufacture, for example R&D expenditure and number of patents do not work in services companies.

It is not easy to count the expenditure spent on innovation in a services company, as it usually is spread by the company. The number of patents, if generated through contracted services, the patent belongs to the customer. It also protects innovation in services is particularly difficult, as is usually incremental and easily imitated by competitors.

The indicators that we usually use are: the number of white papers written, number of employees with master and doctorate and rate of knowledge transfer from R&D operations (workshops/year).

Other activities carried out by the research are tax incentives management, prospective technological studies and surveillance technology. The follow figure shows its main R&D activities.

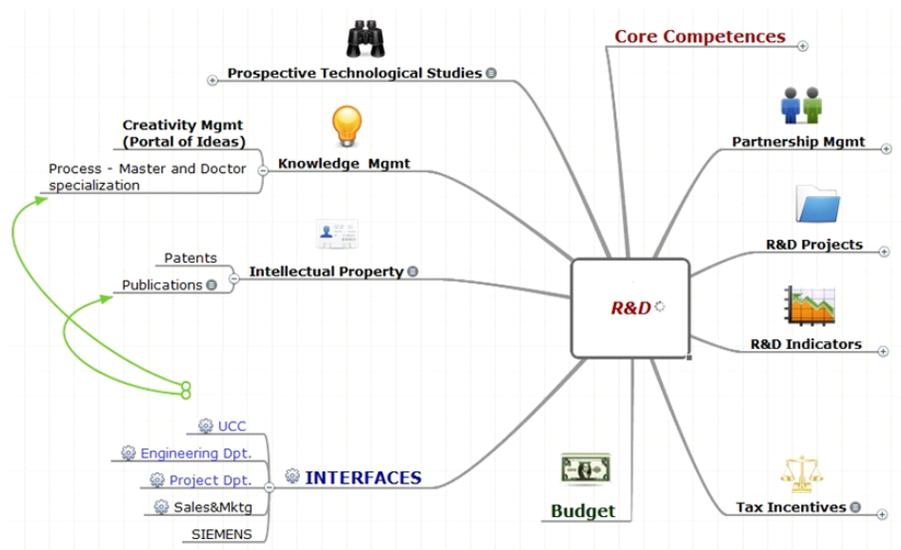


Figure 3. Role of R&D Center in a Brazilian service company
source: authors

The research area also has tools and processes to be improved to become more innovative, but with the help of effective human resources is much easier.

6. Final considerations

The literature affirms that the services companies rarely maintain R&D departments, and innovation generally is an unsystematic search-and-learn process. However, for some technology services companies is

essential to have a center to perform certain activities related to R&D, also common in other types of business such as manufacturing. Some examples of these activities are the intellectual property management; vigilance and forecasting control; and technological incentives management.

It is also important to have well-defined processes for collection and dissemination of knowledge within the company. Furthermore, the concern for the professional development of each employee according to the business strategy is essential. And, because the knowledge comes not only from inside the company, it is important to be vigilant of the novelty from outside. An effectively partnership management avoids serious problems that can occurs among the parties.

The role of human resources management in a service business is by far the most important to keep a services companies innovative. People management has to worry about motivating and retaining their talent for not to lose the most valuable intangible asset of enterprise, the knowledge. Promoting new ideas are also a motivational factor and the entry process of research, development and innovation.

People management is the basis for maintaining a culture of innovation in companies focused on improving the team, encouraging creativity and investment in their leaders. It is recommended that a business technology services based on expertise, can have its R&D and innovation center aligned with the human resources department for a more effective people management, with a focus on motivation, creativity, and knowledge. Only in this way the company is innovative both for its direct customers - industries, and for the final consumer.

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