CASE STUDY OF THE SYMBOLIC INTERPRETIVISM IN A R&D UNIT AND ITS INFLUENCE ON THE DECISION TO OUTSOURCING ITS ACTIVITIES

Dusan Schreiber [1]

ABSTRACT

The innovation, both technological and organizational, are no longer a fad, occupying a prominent place within organizations. With the opening of markets and sophistication of the standard requirements of consumers, both domestically as abroad, differentiation has become a slogan and innovation a necessity. Within the technological innovation activities of research and development are considered essential and deserves an increasingly attention of researchers. Traditionally regarded as a highly technical sector, with a focus on designing solutions technologically and commercially viable, R&D assumed new responsibilities, which implied a change of its profile, more fit to interact with other organizational units. This process implied, too, in the expansion of the symbolic universe of the group of experts that works in the R&D sector, with inclusion in its repertoire new values and images of the organization, represented in the decision-making process. The article analyzes the case of company BETA, a technology-based company, located in the metropolitan area of Porto Alegre, in order to understand social network that enhance the symbolic interpretation of technicians that work in the R & D sector, as to identify if and how this interpretation may influence decision about how to perform the activities of the technological research.

Keywords: Symbolic interpretivism; R & D sector; outsourcing activities.

1 Bachelor degree in Management at UNISINOS University, Bachelor degree in Pedagogy at FEEVALE University, Master degree in Management at UNISINOS University and PhD in Management at Federal University of Rio Grande do Sul (UFRGS). Novo Hamburgo – RS. Brazil. E-mail: dusan@feevale.br

1 INTRODUCTION

Organizations are now coping with a context characterized by a high degree of complexity. Multifaceted and multidirectional, both in internal and external relations, the context within the organization is inserted hinders the conception of the way to act in order to ensure its presence in the market. Thus, it is becoming mandatory for organizations to develop a set of competencies that can be the source of differentiation in the segment they operate in. Among these competences, we highlight the ability to innovate products and processes with the objective of meeting the expectations of the customer in terms of design, quality, functionality and price. In addition to these needs, it is considered essential that the organization realize product innovation in shorter time periods (TIDD; BESSANT; PAVITT, 1997; CHRISTENSEN, 2002; KIM; MAUBORGNE, 2005; PLENTZ; BERNARDES; FRAGA, 2015).

This specificity of the innovation process impacts directly on the organization's ability to innovate management processes, what allows the reflection on the need of new ways to organize resources and make decisions, considering the complexity that characterize the context in which the organization operate (WHEELER, 2003, SASSENBURG, BOSS; RABUNG, 2005). It is noticeable that the ability to organize resources in an innovative way is the basis for the construction of the competitive differential of the organizations, as well as for the decision-making process focusing better use of the internal resources (KAY, 1996; MILLER, MORRIS, 1998; GHEMAWAT, 2002).

One of the organizational areas that are directly linked to the product innovation is the Research and Development (R & D) sector, that was initially conceived on the set of the objective, normative and technical criteria, in order to carry out basic and applied research operational activities, always seeking to ensure economic sustainability (WESTWOOD, SEKINE, 1988, STOKES, 2005). Over time, R & D function expanded, with the inclusion of "use" or "utility" that transcend mere economic viability and allow organization to get new benefits of R & D-related activities (O'CONNOR, AYERS, 2005). These may be considered new skills and knowledge, that result from the research and development activities that are carried out in the interaction with other areas and organizational units (MCNULTY, WHITTINGTON, 1992), representing an interdisciplinary concept of the R & D area, in which each of the organizational units can contribute to the development of new products and operational processes.

At the same time, this interdisciplinarity of the R & D area makes it possible to ensure a unique competitive differential, since it is a rare asset that is hard to imitate by the competitors (BARNEY, 1991; CHANDLER, 1992; KAY, 1996; BOERNER; MACHER; TEECE, 2001), when greater intensity in the interaction with the other organizational units implies alteration of the originally designed functional profile. It is a greater influence of the subjective variables on the management process, especially on its decision-making process. In this way, it is possible to verify that the rationality and objectivity that characterized the decision-making process in this organizational unit is considering more subtle and subjective variables of a political, social, cognitive, perceptive, interpretive and narrative nature (MILBURN; BILLINGS, 1976; SIMON, 1979; MOTTA, 1988; BATEMAN; ZEITHAML, 1989; VERGARA, 1991; PILLOTTO, 2003).

It is also possible to understand that the origin of these organizational subjective variables is based on the culture of the organization, that may be considered a combination of the symbols, narratives, language, myths, among others, that permeates the organization and manifests itself in all actions, at the individual and collective level (VAUGHN, 1995; STRATI, 1998). In this perspective is important to highlight that social and power relations are those that actively contribute to building and rebuilding organizational reality through values, goals and beliefs that

are shared by individuals associated on the basis of similarity of their personal interests, whether or not aligned with the organizational goals.

The decision-making processes in the R & D area refer to choosing between a set of alternatives in order to organize the resources allocated to that organizational unit and available for the achievement of the organizational objectives. It is understood that, by the importance of this decision, it is possible that it is more susceptible to the manifestation of the influence of the cultural variables in order to influence the manager during decision process. Thus, authors such as Mostaghimi (2001), Trull (1966), Schwenk (1984), Zhu and Weyant (2003) and Castellacci (2008) suggest that the subjectivity that characterizes information arising from social interaction has the potential to change the decision maker's position and consequently change the content of organizational decisions.

The present work, constructed as a single case study, seeks to analyze how the symbolic interpretation of the technicians allocated in the R & D unit of a technology-based company, called here as Beta, and operates in the chemical segment and is located in the Metropolitan Region of Porto Alegre in the south of Brazil, influences the decision about the way to do technological research activities. Due to the specific characteristic of the proposed study, researcher used narrative analysis method, because it allows the researcher to interpret the characteristics of the content of the interviews.

At the beginning of the work are presented theories that support analytic categories, in order to provide understanding of the interpretive line adopted by the researcher, as well as to enable to formulate questions about the subject, that have a high degree of complexity and subjectivity. Next is characterized the organization that is the object of this study and is detailed the research method. The analysis of the results and the final remarks complete the structure of this work.

2 INNOVATION AND R&D

At the beginning of the last century were presented first studies focused on innovation. The German researcher, Schumpeter (1982), that is considered first scientist of the innovation, stated that extraordinary profit is reserved only for the innovative entrepreneur, trying to demonstrate the importance of innovation for the constitution of the competitive differential. His studies influenced researchers, who deepened the subject of innovation, developing more, and new, approaches with focus in organizational processes management (CHRISTENSEN, 2002; KIM; MAUBORGNE, 2005; LIMA et al., 2009; BARBIERI, 2010; FERRARESI et al., 2012; GOMES; KRUGLIANSKAS; SCHERER, 2012; OZKAYA et al., 2015). This extension of the original concept allows reflection on new ways of organizing resources and making decisions considering the complexity present both in the external and internal environments.

Similar perception was presented by Tidd, Bessant and Pavitt (1997), Miller and Morris (1998), Kim and Mauborgne (2005), Coral and Geisler (2008), Thalamo and Carvalho (2010) and Silva, Bagno and Salerno (2014) because they also believed that the development of new products represents an important competence due to the permanently changing external environment, which, in turn, offers opportunities to create the new products, that may surprise the market and allowing the firm to take up new positions. As an example, changes in environmental legislation in several countries, expressed by the ISO 14001 (BARBIERI, 2012; OZKAYA et al., 2015), being more or less developed, at the same time that creates difficulties due to the new regulatory milestones concerning pollutant emission limits, also offers opportunities for technological progress.

Miller and Morris (1998) deepen their thinking about the business model based on innovation and identify three theoretical dimensions in which they are structured: economics, learning and management. The economic dimension is characterized by the shift from the industrial economy to the knowledge economy. Learning, in turn, is the central process for creating knowledge and generating innovation. Finally, management defines the organizational structures and the means by which innovation and other activities of an organization are carried out.

Chaharbaghi and Newman (1996) think that the term "innovation" is also used to describe the process of change that the adoption of new procedures or products causes to the people. In this perspective, innovation becomes part of the cognitive and behavioral repertoire of the person, and may have a form of an idea, practice or material artifact that was invented or is interpreted as new, regardless of its adoption. These authors classify innovation based on focus, in four distinct types: a) of the product or in the service; b) of the production process; c) of the organizational structure and d) of people.

From the perspective of the management, but scanning the market, Westwood and Sekine (1988) defined innovation as the process by which inventions are sometimes transformed into economically sustainable products or systems. The economic sustainability of the new product is also directly linked to the concept of utility highlighted by Stokes (2005), that introduced Pasteur's Quadrant, based on basic research inspired by its use, highlighting four conceptual questions related to research: (i) research, (ii) objectives that must be taken in consideration, (iii) the possibility of reducing the two dimensions to one and (iv) time necessary to turn viable its application.

The Stokes (2005) approach is complemented by O'Connor and Ayers (2005), that highlighted three steps in the research and development process of new products focusing the market: (a) discovery, concept-centered and composed of research activities basic research, internal

research and external research through licensing, acquisition or investment; (b) incubation, focused on experimentation and segmented into activities such as technical testing, market testing, market-based creation, strategic alignment; (c) acceleration, that aims the product to market and is characterized by three stages, namely focus definition, market response assessment and investment in product manufacturing.

For Rodney (2000) and Pinsky, Dias and Kruglianskas (2013), there are three major categories of innovation: (i) innovative strategic management to address environmental change, (ii) management of the initiatives that seek innovative changes; (iii) innovation through the creation and application of knowledge. Within each of these categories, innovation is segmented, in traditional literature about innovation, into incremental and disruptive innovation, but Rodney (2000) proposes one more category: knowledge-related innovation. This inclusion stems from the author's understanding that the construction of knowledge includes the creation and recognition of knowledge that is socially constructed. In this way, organizations are innovative when they allow new knowledge to be recognized and applied, both in processes and in products.

Chaharbaghi and Newman (1996), Coral and Geisler (2008), Baregheh, Rowley and Sambrook (2009) and Ferraresi et al. (2012) argue that by treating work as socially constructed and innovation activity as integrated learning, organizations can create new knowledge, models and tools, and gain new experiences that may enable them to achieve results they want and need them to survive and grow in sales volume. The research conducted by Chaharbaghi and Newman (1996) demonstrated how different types of people and learning can contribute to the process of organizational innovation.

This integration, for many authors, specially for Boath, Hess and Munch (1996), Westwood and Sekine (1998) and Christensen (2002), does not necessarily imply intra-organizational interaction, but enable to expand concept for the development of relationships and partnerships, in R & D activities, between organizations, in a set of different forms of arrangements and agreements. In this sense, Harris et al. (1996), Tálamo and Carvalho (2010) and Ferraresi et al. (2012) analyze the process of outsourcing R & D activities and think that, under pressure to achieve higher productivity rates, R & D managers are required to pass on some of the internal R & D activities to external institutions. Increased productivity means doing more with fewer resources - less people, less equipment, less money – and also managing in order to do more work with less defects and less time. The solution found may be externalization of R & D, which, however, may involve risks of dependency and new vulnerabilities.

For this reason, it is recommended that the decision to outsource R & D should be based on the following variables: the centrality and importance of the research for the organization, the strategic role of the competency that comes from the research, and the added value of the technology that results from the research. Boath, Hess and Munch (1996), Thalam and Carvalho (2010) and Ferraresi et al. (2012) corroborate this finding by highlighting, as the main advantages of R & D outsourcing, the appropriate use of flexible and more efficient resources, and reducing costs. They argue that the company should focus internal R & D efforts on strategic and core product research, outsourcing other developments, reducing thus both risk and cost.

The learning theories, which define it as a social construct, especially for authors Brown and Duguid (2001), Coral and Geisler (2008), Ferraresi et al. (2012) and Ozkaya et al. (2015), that support this position by arguing that knowledge represents one of the most valuable assets of the organization, especially when it contributes to aggregate the value to the products that are considered as strategic and central for the company. For Pawlowsky (2001) and Floriani, Beuren and Machado (2013), in the science of management, organizational learning, innovation, growth

and productivity gains do not result from the separation of tasks within the knowledge-intensive operational process, but from the integration of the different kind of the knowledge with the objective of developing new ideas and conceive new solutions. Boerner, Macher and Teece (2001) argue that learning through trial and error can be an important factor in determining the firm's success considering high level of the uncertainty of the market context, when there is executed follow-up of all records of the results of the research process. But learning is an individual process, as evidenced by Maier, Prange and Rosenstiel (2001), Kim (1993), Antonello (2007), Antonello and Godoy (2007), and results from an experience of the instrumental and social relationship, theme that was explored by Easterby-Smith, Burgoyne and Araujo (2001), for whom organizational learning represents a technical process, a social process and also a political process. For Kim (1993), learning occurs in the interaction between the individual and the social environment. Learning, based on social relation, is effective by the realization that people learn best from symbolic models inscribed in the social environment. Fear (2001) express similar opinion by stating that organizational learning depends on its historical evolution, and Weick and Westkey (2004) helped to support this thinking when examined organizational learning in three cultural subsystems: language, artifacts, and routines of action.

The review of the most relevant theoretical aspects made it possible to highlight the complexity of the organizational environment of the R & D area. In this sense, were highlighted texts that portray the richness of the subjective dimension that underlies the apparent objective reality of the organizations, what point out the need to complete the approach with the revision of concepts related to the analysis of subjectivity present in the organization.

3 REPRESENTATION OF THE ORGANIZATIONAL REALITY UNDER PERSPECTIVE OF THE INTERPRETATIVE PARADIGM

Originally conceived as a process of sequential steps aimed at constructing the most adequate solution for a given problem, the concept of the decision process gradually evolved in terms of complexity and comprehensiveness as a consequence of the recognition of the influence of the subjective variables on the decision maker in the organizational environment. From the effort made by researchers at the beginning of the last century to map, identify and standardize objective variables and factors perceived as central in the decision-making process, using more or less advanced technological tools, in each temporal period, the subjectivity manifested in the decision-making process required a new research processo and change of the analysis process.

Trull (1966) notes that the decision-making process is treated in the traditional literature as a sequence of multifactorial steps that aims to solve a given problem, conditioned to a set of constraints. Within this concept it is assumed that organizations are based on rational behavior in order to conceive the specific solutions and that the knowledge of the intervening factors (both internal and external) is known or can be assimilated. This approach allows the understanding that it is possible to structure the decision-making process with the aid of computer tools, adopting statistical and mathematical treatment.

When considering intense interaction between people in the organizational environment, Buttle (1994) concludes that communication represents the locus of processes through which people co-create, manage, and transform the social reality to which they also belong. Rather than mere coorientation towards a common set of referential meanings, people interpret the actions and discourses of others and coordinate their own actions according to the result of that interpretation. This interpretative and coordinated process produces the social reality to

which people belong.

However, every process has a visible and hidden structure, whether it is part of interaction, dialogue, planning or negotiation. When people become aware of these structures of interaction and their discourse, language assumes a central role in forming reality through relationships with other people and the world (BUNDERSON; SUTCLIFFE, 1995). Personal and organizational development requires new forms of relationship between people and between them with the environment. In order to achieve better performance, people need new arguments about the world, the environment, and life itself, structuring their own identity, as well as organizational identity (HANSSON, 2002).

Symon and Clegg (2005) consider that identity is negotiated and constructed, based on the interaction between social actors and investigate through why certain identities are invoked in specific contexts, evidencing that the socially constructed identity exerts political functions, becoming more relevant in periods of technological change. Bernstein (2005) also notes that identities are available strategically as a form of collective action to change institutions; to influence the change of the dominant culture, its categories and values, its policies, structures and even the participants themselves. In this way the expression of identity can represent a position of conflict and disposition for change. Examining how social groups are represented, through language and images, makes it possible to explain how institutionalized beliefs are constructed.

However, the interpretation of organizational events is directly dependent on their perception, that is selective, as highlighted by Ariely and Carmon (2000), allowing them to state that people synthesize, evaluate and internalize the experiences. The authors evidenced that this is not a simple integration of the isolated components of the perceived events, but they tend to focus only on some specific aspects of the events (Gestalt characteristics). These aspects include the degree of intensity of the pleasure of experience that the perceived aspects cause. In this perspective Ariely and Carmon (2000) show that the observable aspects must present effects of relevant interest to the individuals to be noticed, recorded and internalized.

Also Waller, Huber and Glick (1995) and Bunderson and Sutcliffe (1995) concluded that the content of functional experiences delimits the perception, because selective perception, of the managers, during the management activities, in the organizations, make them ignore some aspects related to the environment, focusing on the changes that may influence the organizational result. The authors' research has shown that the functional selective perception that results from conditioned or schematic development processes is probably greater for operational managers than for senior executives within the organization.

In this perspective is possible to understand that the organizational environment assumes a determined configuration when the organization's history, its narratives, symbols and myths represent externalized meanings and values in practices, routines and processes, allowing the comprehensive analysis of situations and perceived threats, regardless of the potential risk to happen. Decision making represents one of the organizational processes in which the manifestation of the symbolic interpretation of the organizational universe effectively influences the final result.

4 INTERNAL DECISION PROCESS IN THE ORGANIZATIONAL ENVIRONMENT

According to the classical theory of management, the organization is able to maximize results by performing rationally its action. This interpretation was challenged by Simon (1979), based on the finding that the human being was unable to collect and process all informations necessary for organizational decision making. This perception about the impossibility to reach full rationality was endorsed, years later (MARCH, SIMON, 1981), based on three observations: (i) the incompleteness and imperfection of the collected information; (ii) the difficulty in foreseeing *ex ante* the consequences of the decision taken or action perpetrated; and (iii) the impossibility of identifying all possible alternatives of choice, due to physical and biological constraints. In addition, it is worth to note the relevance of the political dimension that underlie the organization's concept (ARROW, 1974; MORGAN, 1996) and derives from the interpretation of collective action as a means of power, thus enabling the values of the people that integrate the social groups that constitute the organizational environment.

The decision-making process has undergone several modifications, notably over the last century. The meaning of the supposed rationality that underlie and structure this process, as was originally understood, at the beginning of the last century (TRULL, 1966) was deconstructed, due to the influence of perceived and interpreted reality, with nuances of increasing complexity, that force decision-makers to recognize the relevance of subjective variables for decision making. In this perspective, it is necessary to recognize the contribution of several researchers, especially Keeney and Raiffa (1976), Brans and Vincke (1985) and Steuer (1986), to improve the concept about the decision-making process, through identification of the variables with the use of various technological tools, specially by the recognition of the limits of the objective dimension, suggesting the need to include variables of a subjective nature. In this way, it was possible for some researchers, such as Simon (1979), who highlighted limited rationality, a new direction of research focus and change of the analysis process (BRAGA, 1987; VERGARA, 1991).

For Dean and Sharfman (1996), environmental constraints play a relevant role in the definition of decision-making choices, enabling to reduce the importance of the choice process. Decision processes influence decision-making effectiveness by influencing choices made considering a set of constraints. In order to turn decision making be an effective choice, it should be (i) oriented toward the achievement of organizational objectives, (ii) be based on the accurate information and establish relation with different alternatives to in order to achieve organizational objectives, and (iii) be based on analysis and understanding of the environmental constraints.

The first element of the decision model proposed by Dean and Sharfman (1996) is procedural rationality, defined as the extent to which the decision-making process involves the set of information relevant to the decision and reliability of the analysis performed on the basis of this information for making decision itself. Political behavior is highlighted as an aspect of the organizational decision-making process and is based on two premises: (i) people in organizations have different interests of the functional, hierarchical and professional as well as the personal nature; (ii) people, within organizations, try to influence decision-making in order to achieve their own interests and use a wide range of policy techniques to do it, as Allison (1971) has pointed out, when compared policy decisions of the big corporations.

Milburn and Billings (1976) define the decision-making process as a multi-stage process in which problems must be first identified, then linked to individual or collective dimensions, with consequent search and identification of alternatives and consequences of choices; then finalized

with the implementation of said choices and evaluation of its results, in order to verify if the problem was eliminated. In this way the definition of the problem is considered as result of the social, psychological and political process. It can be seen that decision-making involves different types of uncertainties and risks, and differences in the perception of both uncertainties and risks lead to different processes of searching for alternative choices.

Howard (1984) classifies decisions in three levels, routine, tactical, and strategic, and emphasizes that routine decisions differ from strategic decisions in complexity, greater policy implications within the organization, and spatial and temporal breadth. Performing quantitative research with 69 US executives, Hitt and Tyler (1991) concluded that the decision-making process is both rational and intuitive. Being considered more complete, Eisenhardt and Zbaracki (1992) portray organizations as political systems where decision-makers have partially conflicting goals, limited cognitive ability and decide taking in account both rational and political variables. The political dimension in the decision-making process is manifested by the fact that the most powerful managers make the decision, while the rational dimension is evidenced by the rational steps of information gathering for decision-making.

Contextual and situational variables play an important role in the perception of both uncertainty and risk and influence decision making. However, this finding contradicts, to a certain extent, traditional model of decision making that is based on expected utility, of a more subjective character, in which a professional chooses the alternative that may generate (in his perception) greater expected utility. By linking the two theoretical approaches, one can say that the optimal decision seeks to find optimum result for the expected value of utility while minimizing risk and uncertainty. The time factor also exerts influence over decision making, based on its link with uncertainty and risk, regarding the time period in which both uncertainty and risk tend to take place (Milburn and Billings, 1976).

O'Dell (1992) studied the decision-making process by consensus and identified factors that should be considered and addressed in the decision-making process. The first one refers to the professional experience and the level of maturity of the people who are part of the social group. Usually, the opinions and perceptions of people with more experience and higher age have a greater influence on the decision alternatives choices.

The political dimension stands out in the decision-making process supported by power relations with the objective of obtain favorable results in situations that imply choices in the midst of uncertainty, lack of consensus, and also represent efforts of groups interested to influence decisions that affect or may affect their position in the organization. In the same research, Dean and Sharfman (1996) evidenced that effectiveness in organizational decisions must be aligned with organizational goals and identified that political behavior has the potential to reduce the effectiveness of organizational decisions because it implies distortion and restriction of the flow of the information within the organization.

Harrison and Pelletier (2000) also pointed out that the decision is interpreted as a moment in the process of evaluating alternatives to reach a specific objective, and expectations about a particular course of action impel the decision maker to select the course of action more aligned with the expected results. In this way most of the behavior aspects of the people that decide can be explained in the context of the decisions that need to be token. This perception is similar to the expressed by Bateman and Zeithaml (1989) that said that the form and type of language used (the specific terms and words) in the presentation of the information, that subsidizes the decision-making process, influences the decision-maker in the choice of alternatives and also the decision itself. They also noted that the interpretation and perception of the past

experiences, of those who decide, influence their perception of current events and future trends, highlighting the relevance of the influence of the negative or positive sense of the words used in the presentation of data and information used in the decision process.

5 CONTEXT AND CHARACTERISTICS OF THE RESEARCH METHOD

The study was supported by the methodological design of three authors, namely Tull and Hawkins (1976), Yin (2005) and Bonoma (1985), because the facts raised by the study are contemporaneous, the research was carried out with an external view of the researchers, without manipulating any information, interpretating empirical data by the method of narrative analysis, according to the models of Czarniawska (2000) and Riessman (1993). It is also worth mentioning that, following recommendation for the case study cited by Yin (2005), this work sought to describe the real-life context and to perform a descriptive evaluation, with analysis regarding theoretical categories, related to the organization that was researched.

Interpretation of the narratives was made according to the method indicated by Czarniawska (2000) and Riessman (1993), and considered four unstructured interviews that were carried out in the research organization, that are technicians working in R & D unit, manager and three technical workers. One of the technicians has been working in the company for more than 25 years, having started his production career as a trainee and then moved to the research and development area, so this organization is his first and only professional experience. But manager and two other technicians have had previous experiences in other organizations and have been working in the company for six years.

The interviews were recorded on audio and, then, were transcribed until 48 hours after. The transcribed interview, which, due to its format, usually results in a non-linear and even confusing text, has been interpreted and rewritten in a fluid, first-person text, in narrative format. Subsequently, each of the interviews was submitted to the interviewee for analysis, adjustments or contributions. Although the method is not considered recent, it is still classified as innovative (CZARNIAWSKA, 2000).

According to Riessman (1993) and Czarniawska (2000), the narrative can be interpreted as an organized speech about a particular event, situation, subject or theme. It is the way in which people tell their experiences, what they emphasize or ignore, whether they position themselves as protagonists or as victims. It is important to emphasize that the relationship that the narrator establishes with the listener causes the narrative to stop being just the act of telling something, becoming an act of building a personal identity.

So it is possible to say that the research through written narratives consists of study of stories. The stories are ubiquitous, found in historical clippings, fiction novels, short stories, autobiographies, as well as other literary genres. The stories come from people's statements about their own stories and about other people as part of everyday conversations. In addition to these spontaneous interviews, it is necessary for narrative researchers to foster oral stories on specific topics in order to be transcribed and analyzed. Narrative research is considered as one of the social research approaches (POLKINGHORNE, 2007).

Narrative is part of the cultural process in which symbolic systems create and are created through discourse and are employed in different contexts to communicate different points of view. Fragments of larger narratives and different versions of narratives are part of everyday discourse of people, who are, after all, beings constituted in language based on meanings con-

structed to give meaning to the world in which they live. These are the set of the meanings that form part of the network of the conversations, based on the mix of the values, symbols, representations, of the culture they integrate (BOJE, 1995; MOEN, 2006).

The revised literature allowed the identification of categories of analysis, which guided the interpretation of the transcribed texts, aiming to understand the symbolic system of the researched organization, both in individual perception, having as background the professional and personal experience, representing the filter to perceive the world, and also in social perception, constructed from social interaction, sharing values and narratives, with the social group the people belong. The categories of analysis that guided the interpretation were: (i) the perception of the process of selecting business opportunities, through the development of new products or the improvement of products in the portfolio; (ii) the influence of the composition of the organization's staff (personal profile, previous professional experiences) on the interpretation of the market reality; (iii) the symbolic representation of the organizational universe, constituted through social interaction; (iv) the decision-making process in the area of R & D and its caracteristics; (v) perception of the innovation and R & D management model through outsourcing (with universities, R & D institutes, consulting firms, etc.).

The texts were interpreted and created in each word and phrase. For this reason, the contextualisation of the narrative becomes relevant, since the individual discourse is constructed from objective and subjective elements that belong to the organizational environment and interpret it, based on his own presuppositions, derived from its own personal and professional experience. These assumptions form filters, behavior patterns, attitudes and represent truths or untruths, which are used by the subject to characterize certain situations, as a parameter of classification of the nature of the occurrence (RIESSMAN, 1993).

According to Czarniawska (2000), the method of narrative analysis is appropriate to reveal to the researcher processes used by the narrator to interpret things, mainly to evaluate the individual's interpretation of subjective themes, such as organizational culture. It is up to the researcher to interpret the interpretations of the narrator. However, it is important to remember that the researcher does not have direct access to the experience of the interviewee and for this reason the researcher will always deal with different and ambiguous forms of representation of the experience that the interviewee will express through speech, text, interaction and, of course, interpretation.

Based on this fact, it is believed that the symbolic-interpretative approach is the most appropriate method to understand, through narrative analysis, interviews with organizational members, their perception of the social environment of the organization, aiming to recognize and identify values, myths, symbols and signs through which the members of the organization create and recreate, through interaction, the organizational reality that influences the process of integrate (or isolate) a new member into social group and into the organization. The symbolic approach is based on the concept of the construction of organizational reality through the negotiation of symbolic meaning of the organizational environment and notions of mythical thoughts that integrate the positivist dilemma of the true and false (STRATI, 1998).

6 CHARACTERISTICS OF THE CASE ANALYZED

The company BETA was founded in the 1960s, in one of the cities of the Metropolitan Region of Porto Alegre, under the initiative of a born to be entrepreneur, with a expertise in mechanics. Since very early age, he showed a strong attraction for machines and equipment, which led him to finish at the age of 17 one of the technical schools of reference in this area, in the city of Pelotas. Soon after, he was accepted at the renowned Varig School in Porto Alegre, where he studied aeronautical mechanics and electronics, becoming a recognized specialist within the company, in the processes of electronic control of aircraft. This experience was fundamental to the next steps, especially in the process of innovation, research and development, allowing him to face a new challenge: maritime navigation.

It was from the opportunities detected in maritime navigation that the company emerged with its first product being designed and commercialized - the intercomunicator, with brand ICR, produced in precarious conditions of the small firm. The development of the equipment allowed the young entrepreneur to access the Estaleiro Só, at the beginning of the prosperous period of the Brazilian naval industry. With few custom technological solutions, the naval sector presented a series of problems to be solved. One of them, which the young businessman managed to solve in a few days, was a kind of sign rockert (a kind of flashlight that could be pointed towards the ship, emitting signals in Morse Code) allowing to perform tests at sea.

In addition to this equipment, the company developed and produced other equipments, such as selsyn motors, basic components in analog automation, systems and navigation, gyroscopes, radiogoniometers, besides the control of the hydraulic system of the rudder of the vessels, derived from technical problems that the young entrepreneur had the ability to interpret as business opportunities, coining the motto that represented the central axis of his philosophy of work: "you must always have an alternative when a fault is identified."

In this way, and with the technical competence confirmed by the series of products, successfully designed and applied, to solve the specific technical problems, the company was invited to participate in the Second National Plan of Naval Construction in the 1970s. In the period that followed, the company has equipped more than 350 ships, becoming a national reference in this segment.

The success of the enterprise was reflected in numbers. From the 25-square-meter space building and four employees, which characterized the company's beginning in the early 1970s, the organization grew to occupy a total area of 8,000 square meters of built space, housing more than 300 employees, at the beginning of the 80's. It was at that moment that fate put the businessman in front of a new challenge: the bankruptcy of the national naval industry.

In this scenario, the entrepreneur again showed a lot of flexibility and multifunctionality, because a few years ago, at the request of the Brazilian oil company, Petrobras, the company developed and produced a line of electric actuators, which are the equipment for the automated operation of valves for industries that work in processing oil and sanitation. Considered a very innovative product for the time, it didn´t reach high volume in selling.

However, with the crisis in the naval sector, was made a high investment to refresh this product what was a good tip, because it became, from the 90's, central competence of the company and its flagship. In this sense, the company was aided by the economic context, based on market opening and globalization. While for many companies the opening of the markets represented the risk, in some cases resulting in the finishing the operations and bankruptcy, for other companies was the best time for the expansion based on the search for new opportunities. This

was the case of the BETA company, because, in order to become more efficient, many industrial organizations invested in industrial automation, generating opportunitties for companies that had this competence.

In order to reach higher levels of operational efficiency and also environmental safety, electromechanical actuators began to be replaced by intelligent - automatic equipment. Getting on this trend and evaluating his chances to become a benchmark in this segment, the entrepreneur decided to abdicate of all other products transferring them to the employees who were encouraged to open their own companies .

The new positioning of the company proved to be valid, based on the modern concepts, subject to international standard technical certifications, in final products and in manufacturing tests, the company consolidated the new technology and became the only Brazilian manufacturer of this product. In order to confirm its level of excellence, the company was certified ten years ago by ISO 9001. In addition, it was also classified as a "technology-based company" by the Financier of Studies and Projects (Finep), obtaining support for the 2003/2009 Business Plan, focusing on the internationalization of the company.

7 DETAILS AND THE ANALYSIS OF THE RESULTS OF THE RESEARCH

The research whose results were based on the elaboration of this paper, was carried out with the objective of identifying the cultural traits and their characteristics, to be analyzed *a posteriori*, with the purpose of understanding the management process for innovation within the organizational area focused for technological development - R & D. Despite the apparent technical and rational characteristic of this object of study, this organizational unit is made up of people, who think, have feelings and fears, look for something and seek to achieve it, both in personal and professional way.

From this point of view, the need to understand the organizational reality, based on the perception of the people that work e perform R&D activities may enable to evaluate the way how this unit is managed and how it impacts the decision-making process regarding outsourcing (or not) activities with external agents. In order to achieve this goal, will be presented evidences that emerged from the narratives, that may reflect the cultural practice of innovation, whose symbolic interpretation could be influencing profissionals in the area of R & D, during decision making process.

Considering that the selective perception of the social and organizational environment has the potential to influence and, consequently, shape the behavior of the people (WEICK, 1995; MOTTA, CALDAS, 1997; VAUGHN, 1995; STRATI, 1998) it is relevant to point out the variables, which, during the analysis process, represent the symbolic universe of organization and empower management, enabling to introduce values aligned with the new innovation management strategy - the externalization of some of the research and development stages.

The first variable that was evidenced in the narratives refers to the sharing of decisions regarding the selection of business opportunities, to the development of new products or to the improvement of products in the portfolio, in response to customer requests. All the interviewees, especially the technicians, reported this fact as relevant because they had the opportunity to express their opinions, which they interpreedt as a clear sign of the importance of their role within the organization, reflecting the content of Strati's texts (1998), Ariely and Carmon (2000) and Bernstein (2005). One of the technicians (T2) commented: "[...] in other companies the tech-

nician of the area never have access to the owner and even the board, to be heard, to give his opinion or express thinking". Another technician (T1) corroborated this statement by reporting an episode in which the director of the company closed a line of research for a product after he, a mere technician, pointed out a fragility of the project: "It was quite an experience. Very super. I had a lot of engineers in the project and it was me, a technical designer, who showed the unfeasibility of the alloy, which would sooner or later cause the rupture and lead to the explosion. "

This meeting, dedicated to the discussion of new business opportunities, through the analysis of ongoing research projects or customer demand for the development or improvement of the products already available in the portfolio, occurs monthly, with the participation of representatives from all organizational areas - usually senior managers or technicians, that may be considered opinion formers. At this meeting, according to the manager of the R & D unit, everyone has opportunity to speak:

> [...] there is no distinction between the technician, engineer, financial, board ... all can and should manifest themselves. You have to speak with propriety, of course. No one is there to listen something that doesn´t matter, but proposal for new design of a new product goes through all the sectors within the firm, so if you have [...] if you see something that can harm the project, you have to talk.

This attitude of sharing investment decisions or disinvestment in R & D projects, when are being analysed potential commercial opportunities, with an interdisciplinary and multilevel team, has a important symbolical meaning and creates a relationship of trust, which leads to the commitment of all those involved in the decisions. One of the technicians (T3) highlighted:

> [...] you can see that the director and other colleagues consider you a important one, due to the knowledge and experience you have. When you speak, everyone listens, of course, you need to show that you know very wel what you are speaking about and then to take responsibility by what you have said. After all, you sign (metaphorically speaking) together, then you have to help to get it right.

The relevance of the involvement and of the psychological contract in the organizational environment, as it is possible to interpret from the interviewees' narratives, was explored by authors such as Bateman and Zeithaml (1989), Bunderson and Sutcliffe (1995) and Hansson (2002) that point out higher rates of commitment to meet organizational goals when leaders establish a relationship of trust and partnership with those who they led. They also emphasize the importance of the empowerment and of the levels of decision-making autonomy for those they led. Of course, the ways in which this relationship is built depends on the organizational specificity, of the intellectual level of the people, of the number of people involved in the process, of the age group and of the cultural (and social) factors, among others. This details was explored in the following question, which sought to capture the perception of the interviewees regarding the influence of the composition of the technical staff of the R & D unit of the company BETA in the decision making process, in order to innovate and carry out the R & D activities.

The composition of the organization's staff was highlighted by the interviewees, since the company's founder and his son participate directly in the selection process of professionals for the R & D unit, following criteria carefully created by them, regarding professional profile and experiences above. This practice was also evidenced by Motta (1988) and Dean and Sharfman (1996), in the most diverse organizational environments, especially for positions at higher hierarchical levels. In this way, the people selected for the mentioned key positions, with the responsibility of representing the interests of the organization, besides serving as a model for

the other collaborators, as opinion formers (HANSSON, 2002), end up presenting a behavioral profile, attitudinal and a mental model very similar to that of the directors, a finding shared by Eisenhardt and Zbaracki (1992) and Hansson (2002). This similarity refers to the interpretation of the external environment, the change of the market conditions, and the constant engagement to innovate and overcome the limits, not only personal, but also of the team.

All respondents (manager and technicians), when asked to describe their particular view of the external environment, identifying favorable and unfavorable points, presented a very close line of representation of reality, such as a changing world, and competition conditions between people and organizations, which reflects the perception of Weick (1995), Waller, Huber and Glick (1995). The manager of the R & D department stated:

> "In these more than 20 years of market, the market has changed a lot, the consumer has changed a lot. There are more and more competitors in the market, and the company has to adapt. Launch new products, you can not stop."

The T3 technician adds:

> "In the still water creates silt [laughs]. In our case, those who do not update themselves, do not specialize, are out of the market, like the firm, if they do not innovate, lose the market."

Is possible to interpret that there is a perceptive alignment between manager and the technicians, in relation to the need of the firm to adapt itself to the changing market, which also applies to professionals. This reality requires, in the perception of the interviewees, constant search for updating and innovation, both in personal relationships, skills and abilities, and in the case of companies, products, processes, services, customer proximity, quality and smaller costs.

In all the narratives were evident interviewees' perception about the emphasis and the valorization of professionals within the organization, demonstrating attitudes aligned with this prioritization of the need for technical and professional competence, both through expertise and practical knowledge (senior technician have professional experience above 25 years), as well as academic qualifications and professional experience aligned with the skills considered central by the organization, supporting research results of Chaharbaghi and Newman (1996) and Stokowski (2002). The technician T1 commented:

> [...] if you have the technical competence …. have an argument and demonstrate that you know, you have everything to grow here in the firm. Even more so if it is in the mechanical area [laughs] [training and knowledge area of the founder]. Of course, if you are good at what you do, even if you are supportive, personal values, of course. You have to add.

The relevance of the compatibility or similarity of the training and technical competence with the professional profile of the decision-makers (directors), as a conditioning factor for the career progression, is commented by the interviewees. The manager emphasized:

> "[...] in the interview of the selection process, I realized that they [the directors] wanted someone with experience in technology-based companies, focused on projects and researcher profile, to serve as an example to the technicians".

The narrative content of the interviewed technicians reveals that this, in fact, occurred, as the technician T2 commented:

> "The boss [manager] is very much a partner, he gets involved in the projects with us, he

always gives a lot of tips to solve the problem. You know a lot, but it's always good to stop to hear him talk. He always argues with a lot of background."

In recent years, the board has shared with the team the need to adapt the process of innovation and R & D to the new market profile. Costs have become very high, and the risk of rejection of new products in the market, too. It has become important to innovate the R & D process. Among the alternatives, the partial or total outsourcing of some of its activities stands out. This positioning was initially interpreted by technicians in the area, in a negative way, as T3 technician pointed out:

> "[...] the transfer of some of our activities to be done by the masters and doctoral fellows in the universities, or by the technicians of an institute, scared us at first [...] ... our job is, right? Everyone has an account to pay [...]".

However, as can be interpreted from the statement of technician T1, the symbolic influence of the manager and the board of directors, as an opinion formers (managers) or by the empowerment, derived from the relationship of trust constituted due to the inclusion of technicians in monthly meetings, was determinant for the perceptive change in the process of outsourcing R & D activities. The central argument of the board, and shared with the organizational managers, was that the new way to perform these activities is essential for the progress of the projects and better for the organization in the activities that need to be performed by specialists. This situation typify political articulation of the board of directors, as pointed out by Milburn and Billings (1976) and Eisenhardt and Zbaracki (1992), as well as representing the symbolic construction in the organizational universe, according to the characteristics presented by Strati (1998).

When analyzing the case of the manager responsible for the R & D unit, it is possible to affirm that, due to their characteristics of superiority of technical knowledge and technological know-how, representing the example of professional to be followed, other colleagues initially tend to stand against this new strategy, based on the internalized framework about how-to-do R & D activities (CORAL, GEISLER, 2008, OZKAYA et al., 2015). The preferred model of internal execution, with guarantee of the work for all and of the power to be a coin in the organizational environment, due to the technical knowledge, difficult to transmit and share, clashed with the new concept, which represents technological progress and modernity, resulting in the conflict of interests based on the interpretation of organizational events, as Harrison and Pelletier (2000) found.

The possibility of interaction learning was used as one of the arguments in favor of outsourcing and was built with the objective of minimizing resistance to the new proposal to perform R&D activities (SILVA; BAGNO; SALERNO, 2014) considering technicians concerns about the loss of power based on technical knowledge, unique, rare and difficult to imitate (BARNEY, 1991). This argument was reinforced by "first-line" technicians - aligned with the management's speech - by raising the level of qualification, through contact with institutions of recognized technological base in certain areas of knowledge.

In this way, gradually, technicians assimilated the new model of R & D management (BAREGHEH; ROWLEY; SAMBROOK, 2009). However, it is worth to note differences of the position using as the criteria average age of this specific social group and previous experiences in the influence about the process of adhesion, with the more experienced professionals manifesting more resistance than their younger colleagues, both in function and organization, due to a more reflexive posture, evidenced in the narrative of the technician T3:

> I'm no longer a young boy, I've a bit more experience and I know that life in the firm is one thing and your personal life is different. You can not mix it. While it's okay for everyone, okay, but when things get tight, everyone is taking care for itself. I think that today the partnership model is valid, with a lot of service, but in the future, only God knows.

The T1 technician, with 28 years of age and six of the company, shows the highest level of confidence in the relationship with the management and the manager:

> I feel that I can trust the board when they say that the partnerships are made to give us the support and that we technicians will do the coordination of the process, what we will do here and what will be done by others. I think it will be better, it is the market trend, you can not ignore it.

Several authors, notably Geertz (1989), Bateman and Zeithaml (1989), Morgan (1996), Strati (1998) and Beyer (1997) have shown that the most effective form of leadership occurs through symbolic interpretation, through personal commitment, by means of relations of trust, by the discursive and attitudinal example, aligned with the personal and professional values of the employees. Direct imposition, by orders, rules and norms, charged with objectivity, besides being almost always precarious in its attempt to represent the complexity of the surrounding reality, feed natural resistance of most individuals, who find ways and means of making them less effective (STUMPF; DUNBAR, 1991; STOKOWSKI, 2002; VAUGHN, 1995).

Frame 1 – Analysis categories, evidences and related authors

Analysis categories	Evidences	Related authors
Decision making in the R&D area	Sharing decisions in the R & D area, giving the opportunity for technicians to express their opinions, which they interpret as a clear signal of the importance of their role within the organization; symbolizes inclusion and creates a relationship of trust.	Strati (1998), Ariely e Carmon (2000) and Bernstein (2005)
Commitment to organizational goals	Establishment of the psychological contract of the leaders with the leds, through a relationship of trust and partnership, in the organizational environment.	Bateman & Zeithaml (1989), Bunderson & Sutcliffe (1995) and Hansson (2002)

Organizational political dimension - the relevance of the prioritization of innovation processes in R & D practices	Selective process conducted personally by the board, based on a previously defined briefing, of the behavioral and cognitive profile of R & D technicians.	Motta (1988) and Dean & Sharfman (1996)
	Mediation of the external reality by opinion formers, from professionals with an outstanding profile, to positions of leadership, with the purpose of interpreting the external reality and influencing the perception of this by the other employees.	Eisenhardt & Zbaracki (1992), Hansson (2002), Weick (1995), Waller, Huber & Glick (1995), Chaharbaghi & Newman (1996), Morgan (1996) & Stokowski (2002)
	Revision of the perception about the externalization of activities in R & D.	Stumpf & Dunbar (1991), Stokowski (2002) & Vaughn (1995)
	The R & D leader's performance, through symbolic interpretation, through involvement, through relationships of trust, through the discursive and attitudinal example, aligned with the personal and professional values of the leaders.	Geertz (1989), Bateman & Zeithaml (1989), Strati (1998), Beyer (1997), Silva, Bagno & Salerno (2014), Baregheh, Rowley & Sambrook (2009) and Ozkaya et al. (2015)

Source: author of the research

The market environment is in a permanent process of change, due to the constant social, scientific and technological evolution, what makes it complex and multifaceted. This reality requires of the organizations, that wish to remain in the operation, to adapt itself, change the business model and / or revise the way they work, both in the strategic and operational spheres. This process begins with the interpretation and reinterpretation of the external environment by the participants of the organizational universe, which allows the introduction of changes in organizational processes and practices.

In this work, structural elements of the process of change that occurred in the R & D unit of the company BETA were evidenced in the decision process, based on the performance of the organizational leadership on the symbolic universe reinterpreted and shared with the technicians of that organizational unit. Table 1 summarized the aforementioned elements of the study, presenting the categories of analysis, the related evidences and the revised authors that support and provide theoretical basis for each of them.

8 FINAL REMARKS

Organizational decision-making is increasingly a relevant challenge due to the increasing complexity that characterizes both the external and internal environments. The quantity and variety of data, information and situations of the social, technological and political type, among others, goes beyond the limits of individual cognitive ability, both in the process of collecting it and in interpreting it, to support the decision-making process. In addition, the constituent and structuring elements, whether of an endogenous or exogenous nature, are in constant process of transformation, requiring a constant revision of the scenarios that guide and support decision making in the organizations.

All the organizational units are influenced by the alteration of the environmental conditions that are regarded in the decision-making process, being worth to note that these conditions are diverse, in forms and intensity, due to the specificities that characterize their interaction with stakeholders. However, this situation can become particularly critical in organizational units that are responsible for introducing new products to the market - R & D unit.

The intensification of the competition among organizations in the market, in the last decades, has required the adoption of new strategies, both in Brazil and abroad. This research points out to the need for a competitive differential in order to ensure that the organization may continue in the market. One of the alternatives that have been highlighted, with greater emphasis in the last two decades, is the construction of the differentiation based on innovation. Regardless of the form (product, process, incremental or disruptive, among others), the development of the competence in innovation started to be researched with greater interest in the last decades. This approach has led to several studies that have analyzed the way how to innovate the product or the process, as the factors that may difficult innovation.

However, there are still few studies that analyze the relationship between strategic management to innovate related to the organizational culture, despite the existing causal nexus, due to the fact that innovation does not occur through the imposition of the hierarchical superior nor by the system of objective rules, norms and procedures. The reason is in the fact that it is the human being who makes innovation happen and he is a reflexive being who interprets symbolic signs of the environment where he is working, based on the perception shaped by the intra and extraorganizational experiences.

In this way it is possible to conclude that innovation management is essentially linked to the organizational culture, as it was possible to analyze in the case of the company BETA. Its organizational universe was built based on the symbolic, implicit signs, that allowed the perception and interpretation of the relevance of innovation to the organization as a competitive differential. The discourse was allied to practice, and the theme of innovation became part of organizational narratives and practices.

For this reason, it was possible to introduce in the conceptual *repertoire*, despite of the initial resistance, based on previous experiences and preconceived concepts, a new way to carry out the research and development activities - through interaction with external agents, through externalization of tasks to a greater or lesser extent. Senior technicians with outstanding expertise and formal or informal leadership, within the organizational structure, adopted itself to this new strategy and, by example (discursive and attitudinal), questioned the previous model, of internal realization, of the entire projects, of the activities of this organizational unit.

The research, a case study of one company, was carried out through the method of narrative analysis, allowing the emergence of processes, practices, rites, values and discourses that transmit and share the culture of innovation, enabling the understanding of the symbolic

universe of this technical area, of the great importance for organizations. It was possible to interpret the point of view of the technicians of the R&D unit, when the process of R&D changed, from the internal execution to the externalization, allowing an understanding of the approach adopted by the company management. Thus, the study reached the objectives, for being able to evidence the subtle and implicit way of changing values and constituted paradigms, through symbolic interpretation, from the discourse and attitudes of the organizational opinion formers.

The authors believe that the study allows new approaches to the topic, which is increasingly present in the organizational decision-making agenda due to the need to make organizations more flexible and less cumbersome in structures, enabling the development of skills and increasing chances to compete in local and foreign markets.

REFERENCES

ALLISON, G. T. **Essence of decision**: explaining the Cuban missile crisis. Boston, Little Brown, 1971.

ANTONELLO, C. S. O processo de aprendizagem interníveis e o desenvolvimento de competências. **Revista Brasileira de Gestão de Negócios**, v. 9, n. 25, p. 39-58, 2007.

ANTONELLO, C. S.; GODOY, A. S. A encruzilhada da aprendizagem organizacional: uma visão multiparadigmática. In: ENCONTRO ANUAL DA ANPAD, 31., 2007, Rio de Janeiro. **Anais**... Rio de Janeiro: Anpad, 2007. p. 1-16.

ARIELY, D.; CARMON, Z. Gestalt characteristics of experience: the defining features of summarized events. **Journal of Behavioral Decision Making**, v. 13, n. 2, Apr./Jun. 2000.

ARROW, K. J. **The limits of organization**. New York: W.W. Norton. 1974.

BARBIERI, J. C. **Gestão ambiental empresarial**: conceitos, modelos e instrumentos. 3. ed. atual. e ampl. São Paulo: Saraiva, 2012. xviii, 358 p.

BARBIERI, J. C. et al. Inovação e sustentabilidade: novos modelos e proposições. **Revista de Administração de Empresas**, v. 50, n. 2, p. 146-154, 2010

BAREGHEH, A.; ROWLEY, J.; SAMBROOK, S. Towards a multidisciplinary definition of innovation. **Management Decision**, v. 47, n. 8, p. 1.323-1.339, 2009.

BARNEY, J. Firm resources and Sustained Competitive Advantage. **Journal of Management**, v. 17, n. 1, p. 99-120, 1991.

BATEMAN, T. S.; ZEITHAML, C. P. The psychological context of strategic decision: a model and convergent experimental findings. **Strategic Management Journal**, v. 10, n. 1, Jan./Feb. 1989.

BERNSTEIN, M. Identity Politics. **Annual Review of Sociology**, v. 31, 2005.

BEYER, J. M. et al. The selective perception of managers revisited. **Academy of Management Journal**, v. 40, n. 3, Jun. 1997.

BOATH, D.; HESS, P.; MUNCH, C.. Virtual R&D: A core competency approach to outsourcing. **Pharmaceutical Executive**, v. 16, n. 6, Jun. 1996.

BOERNER, C.; MACHER, J. T.; TEECE, D. J. A Review and Assessment of Organizational Learning in Economic Theories. In: DIERKES, M. et al. (Org.). **Organizational Learning and Knowledge**. New York: Oxford, 2001. cap. 4, p. 89-117.

BOJE, D. M. Stories of the storytelling organization: A postmodern analysis of Disney as "Tamara-Land". **Academy of Management Journal**, Aug. 1995.

BONOMA, T. V. Case Research in Marketing: Opportunities, Problems and Process. **Journal of Marketing Research**, v. XXII, May 1985.

BRAGA, N. O processo decisório em organizações brasileiras. **Revista de Administração Pública**, v, 21, n. 3, p. 35-57, 1987.

BRANS, J. P.; VINCKE, P. A preference ranking organization method, **Management Science**, v. 31, p. 647-656, 1985.

BROWN, J. S.; DUGUID, P. Knowledge and organization: a social-practice perspective. **Organization Science**, v. 12, n. 2, p. 198-213, Mar./Apr. 2001;

BUNDERSON, S. J.; SUTCLIFFE, K. M. Work History and selective perception: Fine-tuning what we know. **Academy of Management Journal**, 1995.

BUTTLE, F. A. The co-ordinated management of meaning: A case exemplar of a new consumer research technology. **European Journal of Marketing**, v. 28, n. 8-9, 1994.

CASTELLACCI, F. Technological paradigms, regimes and trajectories: manufacturing and service industries in a new taxonomy of sectoral patterns of innovation. **Research Policy**, v. 37, p. 978-994, 2008.

CHAHARBAGHI; K.; NEWMAN, V.. Innovating: towards an integrated learning model. **Management Decision**, London, v. 34, n. 4, 1996.

CHANDLER, A. D. Organizational Capabilities and the Economic History of the Industrial Enterprise. **The Journal of Economic Perspectives** (1986-1998), v. 6, n. 3, Summer 1992.

CHRISTENSEN, J. F. Corporate strategy and the management of innovation and technology. **Industrial and Corporate Change**, v. 11, n. 2, p. 263-288, 2002.

CORAL, E.; GEISLER, L. Motivação para a inovação. In.: CORAL, E.; OGLIARI, A.; ABREU, A. F. **Gestão integrada da inovação**: estratégia, organização e desenvolvimento de produtos. São Paulo: Atlas, 2008.

CZARNIAWSKA, B. **Anthropology and Organizational Learning**. Oxford: Oxford University Press, 2000. cap. 5, p. 118-136.

DAFT, R.; WEICK, K. E. Por um modelo de organização concebido como sistema interpretativo. **Revista de Administração de Empresas – RAE**, v. 45, n. 4, p. 73-86, 2005.

DEAN, J. W. Jr; SHARFMAN, M. P. Does decision process matter? A study of strategic decision-making effectiveness. **Academy of Management Journal**, v. 39, n. 2, Apr 1996.

DRUSKAT, V.; WHEELER, J. Managing from the boundary: the effective leadership of self-managing work teams. **The Academy of Management Journal**, v. 46, n. 4, p. 435-457, 2003.

EASTERBY-SMITH, M., BURGOYNE, J., ARAUJO, L. **Aprendizagem Organizacional e Organização de Aprendizagem**: desenvolvimento na teoria e na prática. São Paulo: Atlas, 2001.

EISENHARDT, K. M; ZBARACKI, M. J. Strategic decision making. **Strategic Management Journal**, v. 13, Winter 1992.

FAYET, E. A. Inovação: conceitos e teorias. In: FAYET, E. A. (Org.). **Gerenciar a inovação**: um desafio para as empresas. Curitiba: IEL. 2010.

FEAR, J. J. Thinking Historically about Organizational Learning. In: DIERKES, Meinolf et a. (Org.). **Organizational Learning and Knowledge**. New York: Oxford, 2001. cap.7, p. 162-190.

FERRARESI, A. A. et al. Knowledge management and strategic orientation: leveraging innovativeness and performance. **Journal of Knowledge Management**, v. 16, n. 5, 2012.

FLORIANI, R.; BEUREN, I. M.; MACHADO, D. D. P. N. Processo de inovação em empresas brasileiras de capital aberto. **Revista de Administração da UFSM**, Santa Maria, v. 6, n. 4, p. 783-802, dez. 2013.

FREZATTI, F. et al. O papel do Balanced Scorecard na Gestão da Inovação. **Revista de Administração de Empresas**, v. 54, n. 4, p. 381-392. 2014.

GEERTZ, C. **A interpretação das culturas**. Rio de Janeiro: LTC, 1989

GHEMAWAT, P. Competition and business strategy in historical perspective. **Business Review**, v. 76, n. 1, p. 37-74, Spring 2002.

GOMES, C. M.; KRUGLIANSKAS, I.; SCHERER, F. L. The influence of the management of information sources on the innovation performance of large and small business. **International Journal of Innovation Management**, v. 16, n. 2, 2012

HANSSON, T. Leadership by Activity Theory and Professional Development by Social Construction. **Systemic Practice and Action Research**, v. 15, n. 5, Oct. 2002.

HARRIS, R. C; et al. The virtual R&D laboratory. **Research Technology Management**, v. 39, n. 2, Mar./Apr. 1996

HARRISON, E. F.; PELLETIER, M. A. The essence of management decision. **Management Decision**, London, v. 38, n. 7, 2000.

HITT, M. A.; TYLER, B. B. Strategic Decision Models: Integrating Different Perspectives. **Strategic Management Journal**, v. 12, n. 5, Jul. 1991.

HOWARD, T. Strategic decision analysis: applied decision analysis and it´s role in the strategic management process. **Strategic Management Journal**, v. 5, n. 2, Apr./Jun. 1984.

KAY, J. **Fundamentos do sucesso empresarial**: como as estratégias agregam valor. Rio de Janeiro: Campus, 1996. cap. 21, p. 365-393.

KEENEY, R. L.; RAIFFA, H. **Decisions with Multiple Objectives**: Performances and Value Trade-Offs. New York: Wiley, 1976.

KIM, D. H. The link between individual and organizational learning. **Sloan Management Review**, p. 37-50, Fall 1993.

KIM, W. C.; MAUBORGNE, R. **A estratégia do Oceano Azul**: como criar novos mercados e tornar a concorrência irrelevante. 5. ed. Rio de Janeiro: Elsevier, 2005.

LIMA, E. et al. Foco na inovação e complementaridade em equipes de direção no desenvolvimento de novas empresas tecnológicas. **Revista de Administração UFSM**, Santa Maria, v. 2, n. 2, p. 343-357, maio/ago. 2009

MAIER, G.; PRANGE, C.; VON ROSENSTIEL, L. Psychological Perspectives of Organizational learning. In: DIERKES, M. et al. (Org.). **Organizational Learning and Knowledge**. New York: Oxford, 2001. cap. 1, p. 14-34.

MARCH, J. G.; SIMON, H. A. **Teoria das organizações**. 5. ed.. Rio de Janeiro: Fundação Getúlio

Vargas. 1981.

MCNULTY, T.; WHITTINGTON, R. Putting the Marketing into R&D. **Marketing Inteligence & Planning**, v. 10, n. 9, 1992.

MILBURN, T. W; BILLINGS, R. S. Decision-making perspectives from psychology. **The American**, v. 20, n. 1, Sep./Oct. 1976.

MILLER, W. L.; MORRIS, L. **4th Generation R&D**: Managing Knowledge, Technology, and Innovation. Nova Iorque: John Wiley & Sons, Inc., 1998.

MOEN, T. Reflections on the Narrative Research Approach. **International Journal of Qualitative Methods**, n. 4, Dec. 2006.

MORGAN, G. **Imagens da organização**. São Paulo: Atlas. 1996.

MOSTAGHIMI, M. Information collection strategic design in experts-assisted decision making paradigm. **Group Decision and Negotiation**, v. 10, n. 5, Sept. 2001.

MOTTA, F. C.; CALDAS, M. **Cultura organizacional e cultura brasileira**. São Paulo: Atlas, 1997.

MOTTA, P. R. Razão e intuição: recuperando o ilógico na teoria da decisão gerencial. **Revista de Administração Pública**, Rio de Janeiro, v. 22, n. 3, p. 77-94, Jul./Set. 1988.

O'CONNOR, G. C.; AYERS, Alan D. Building a Radical Innovation Competency. **Research Technology Management**, v. 48, n. 1, Jan./Feb. 2005.

O'DELL, W. F. Effective business decision making. **Small Business Reports**, v. 17, n. 3, Mar. 1992.

OZKAYA, H. E. et al. Market orientation, knowledge competence, and innovation. **International Journal of Research in Marketing**, 2015.

PAWLOWSKY, P. The treatment of organizational learning in management science. In: DIERKES, M. et al. (Org.). **Organizational Learning and Knowledge**. New York: Oxford, 2001. cap. 3, p. 61-88.

PILLOTTO, S. S. D. **Gestão e conhecimento sensível na contemporaneidade**. Florianópolis: Ed. da UFSC, 2006.

PINSKY, V. C.; DIAS, J. L.; KRUGLIANSKAS, I. Gestão estratégica da sustentabilidade e inovação. **Revista de Administração da UFSM**, Santa Maria, v. 6, n. 3, p. 465-480, set. 2013.

PLENTZ, N. D.; BERNARDES, M. M. S.; FRAGA, P. G. R. **Sistema de indicadores de inovação, competitividade e design para empresas desenvolvedoras de produtos**. Porto Alegre: Marca Visual, 2015.

POLKINGHORNE, D. E. Validity issues in narrative research. **Qualitative Inquiry**, v. 13, n. 4, p. 471-486, 2007.

PRAHALAD, C. K., HAMEL, Gary. Strategy as a field of study: Why search for a new paradigm? **Strategic Management Journal**, v. 15, p. 1-16, 1994.

RIESSMAN, C. K. **Narrative analysis**. London: SAGE, 1993.

RODNEY, M. A. Knowledge management as a catalyst for innovation within organizations: a qualitative study. **Knowledge and Process Management**, v. 7, n. 4, Oct./Dec. 2000.

SASSENBERG, K.; BOOS, M.; RABUNG, S. Attitude change in face-to-face and computer-mediated communication: private self-awareness as mediator and moderator. **European Journal of Social Psychology**, v. 35, p. 361-374, 2005.

SCHUMPETER, J. A. **Teoria do desenvolvimento econômico**: uma investigação sobre lucros, capital, juro e o ciclo econômico. São Paulo: Abril Cultural, 1982.

SCHWENK, C. R. Cognitive Simplification Processes in Strategic Decision-making. **Strategic Management Journal**, v. 5, n. 2, Apr./Jun. 1984.

SILVA, D. O.; BAGNO, R. B.; SALERNO, M. S. Modelos para a gestão da inovação: revisão e análise da literatura. **Production**, v. 24, n. 2, p. 477-490, abr./jun. 2014.

SIMON, H. A. **Comportamento administrativo**. 3. ed. Rio de Janeiro: FGV, 1979.

STEUER, R. E. **Multiple criteria optimization**: theory, computation and application. New York: Wiley, 1986.

STOKES, D. E. **O Quadrante de Pasteur**: a ciência básica e a inovação tecnológica. Campinas: Editora Unicamp, 2005.

STOKOWSKI, P. A. Languages of place and discourses of power: Constructing new senses of place. **Journal of Leisure Research**, v. 34, n. 4, 2002.

STRATI, A. Organizational symbolism as a social construction: A perspective from the Sociology of Knowledge. **Human Relations**, v. 51, n. 11, Nov. 1998.

STUMPF, S. A.; DUNBAR, R. L. M. The effects of personality type on choices made in strategic decision situations. **Decision Sciences**, v. 22, n. 5, Nov./Dec. 1991.

SYMON, G.; CLEGG, C. Constructing identity and participation during technological change. **Human Relations**, v. 58, n. 9, Sept. 2005.

TÁLAMO, J. R.; CARVALHO, M. M. Redes de cooperação com foco em inovação: um estudo exploratório. **Gestão & Produção**. v. 17, n. 4, p. 747- 760, 2010.

TIDD, J.; BESSANT, J.; PAVITT, K. **Managing innovation**. West Sussex: John Willey & Sons, 1997.

TRULL, S. G. Some factors involved in determining total decision success. **Management Science**, 1966.

TULL, D. S.; HAWKINS, D. I. **Marketing Research, Meaning, Measurement and Method**. London:

Macmillan Publishing Co., Inc., 1976

VAUGHN, M. A. Organization Symbols: An Analysis of their types and functions in a reborn organization. **Management Communication Quarterly**: McQ, Nov. 1995.

VERGARA, S. C. Razão e intuição na tomada de decisão: uma abordagem exploratória. **Revista de Administração Pública**, v. 25, n. 3, p. 120-138, 1991.

WALLER, M. J.; HUBER, G. O.; GLICK, W. H. Functional background as a determinant of executives selective perception. **Academy of Management Journal**. Briarcliff Manor, v. 38, n. 4, Aug. 1995.

WEICK, K. E. **Sensemaking in organization**. London: Sage, 1995.

WEICK, K. E.; WESTLEY, F. Aprendizagem organizacional: confirmando um oxímoro. In: CLEGG, S. R.; HARDY, C.; NORD, W. R. (Org.). **Handbook de estudos organizacionais**. São Paulo: Atlas, 2004. p. 361-388.

WESTWOOD, A. R. C.; SEKINE, Y. Fostering Creativity and Innovation in an Industrial R&D Laboratory. **Research Technology Management**, v. 31, n. 4, Jul./Aug. 1988.

YIN, R. **Estudo de caso**: planejamento e métodos. Porto Alegre: Bookman, 2005.

ZHU, K.; WEYANT, J. P. Strategic decisions of new technology adoption under asymmetric information: a game-theoretic model. **Decision Sciences**, v. 34, n. 4, p. 643-675, 2003.