CULTURE OF INNOVATION AND DESIGN

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ABSTRACT
In a competitive environment, with shorter spreads, innovation can represent leadership in the market and the necessary flexibility for competition through differentiation. If we analyze innovative companies' lists, it is possible to identify the presence of an innovation oriented by design culture, in most companies, which also stimulate a continuous learning process.
The conception of design as a strategic element in the diversified sectors of a company became a fact that enhances the processes and changes in the organization. This strategic application of design can be described as an action plan which aims to articulate all the value chain that is involved in the creation process of a product or service.
However, even when the importance of design goes beyond of its technical and projectile characteristics, the consciousness of design as a strategic element does not exist in most of the organizations.
This paper tries to understand the differences between companies that adopt tools and processes of design as a strategic element (design oriented companies), and organizations that adopt a conventional innovation processes.
The results obtained in this research, are related to case studies about innovative companies from Rio Grande do Sul, mentioned by "Amanhã" magazine, and a bibliographical review. We identified that the incentive to cultural changes oriented by design, can be a main factor to improve the innovation processes that the organization aims to reach.

Keywords: Innovation, Design Thinking, Brazilian companies

1 INTRODUCTION

The growing of market complexity demands a constant actualization and search for new organizational strategies to reach new or already known markets. In this process, innovation plays an important role. This paper intends to present a mapping of innovation structures and practices in three Brazilian companies that are perceived as innovative.

2 TYPES OF INNOVATION

There are many forms to describe innovation process. One of the most used is a typology proposed by Schumpeter, 1961. This classification includes:
Product Innovation: improvement or new product development. In this case, we consider new services or use of new technologies
Process Innovation: occurs when some part of the process is improved to bring benefit. For example, a new way of production, like just in time
Business Innovation: new forms of management, evolving new organizational structures
Material Innovation: new materials and new forms of use. This kind of innovation include new technologies
Market Innovation: this innovation occurs when a company create a new market to it industry.

3 2.1 MODELS OF INNOVATION (FIVE GENERATIONS INNOVATION MODEL)

The velocity, efficiency and type of innovation that could be developed inside an organization depend of the company context, structure and culture. The five generation models of innovation, proposed by

Rothwell (1992) describe different contexts and company structures.

3.1 First Generation - Technology Push

In this model, the innovation process occurs in a linear way, focus, primarily, in R&D. Companies was focused predominantly on scientific breakthroughs. Figure 1 describes this process, starting with basic science ongoing to market.

3.2 Second Generation - Demand Pull

The second generation occurred in the end 1960's to early 1970. This model was related to a hard competition for market share. The central focus, in this case, became responding to the market's needs. Besides this, the second generation could be view as a linear process, just like the first one. The main difference is that now, the focus is market needs, not base research.

3.3 Third Generation - Coupling of R&D and Marketing

The third generation is important because is the first one not characterised as a linear process. In this model, used from the mid 1970's to the mid-1980's, the strategic focus was corporate consolidation, considering the company portfolio. In this model, different sectors, for example, marketing and R&D, work together in the innovation process.

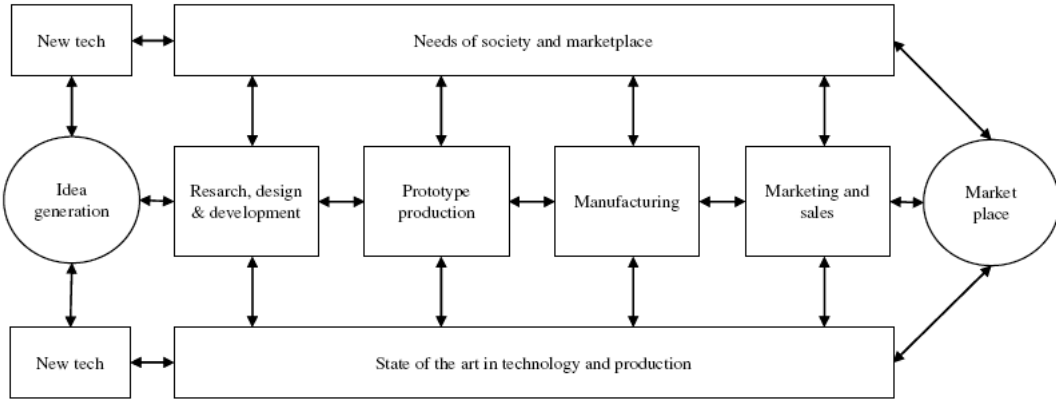

Figure 1 - Third Generation model. Adapted from Rothwell, 1994.

3.4 FORTH GENERATION - KLINE MODEL (INTEGRATED BUSINESS PROCESSES)

In the forth generation model, companies starts to focus in concepts, not in products. Besides this, a strong supplier links were established and the whole company is integrated with leading customers.

3.5 FIFTH GENERATION - SYSTEMS INTEGRATION AND NETWORKING

The fifth generation is related to a scenario where resource constraints became central.
The focus is on networking and integration, trying to improve speed to market and flexibility.
Collaborative marketing, strategic partnerships and research arrangements such as 'open innovation', were setup.

4 INNOVATIVE COMPANY MODEL (FGV MODEL)

Besides the 5G model, it's important consider the model proposed by Fundação Getulio Vargas, that consider different dimensions of a innovative company. The dimensions are:
Idea generation
Priorization process
Implementation process
People
Investiments
Knowledge

Aliances
Governance
Signs interpretation
Leadership and strategic intention
Business model

5 DESIGN ORIENTED INNOVATION

Despite the various definitions suggested by authors in this issue, it is common consider innovation as an idea implemented that creates value.
The perception of the need of a cultural modification in the companies in order to structure these changes makes arise a discussion about the means to the company's ends. In this way the design capabilities allied to its tools start being seen as a mean to reach these objectives.
One of the design capabilities is to notice the consumer's needs and turn them in efficient products to supply these needs. Being a practice which involves subjectivity, its understanding by the designer it's an essential, because it has been studied by this professional. The designer focus the innovation process in the consumer, understanding the interaction process between person and object allowing the mapping of the meaningful aspects of that relationship.
The importance of that discipline also is in the capability to articulate multidisciplinary teams, integrating the sectors, strengthening ideas with that limit crash between the competences.
So that design can really improve and stimulate the innovation process, it will have to be present since the first steps of this process, monitoring from ideas generation till the final product. With a more tangible focus, the tools and the methods used by this discipline helps in the development of the design thought, for example, stimulating prototyping which should be used every time that is possible, generating capability of discussion about the project.
There's another emphasized factor; the increase of the experience value that is involved with purchasing. The market require something that goes beyond a good product and a satisfactory attendance, consumers are worried in purchase a whole system. The purchasing experience which includes all of these values will satisfy consumer's desires and needs, fulfilling the project's tasks.
"The design process is best described metaphorically as a system of spaces rather than a predefined series of orderly steps. The spaces demarcate different sorts of related activities that together form the continuum of innovation." (Brown, 2008, pg4).
Therefore, in this non-linear creation process, it is proposed a design oriented innovation logic, with the goal to obtain not just profits, but to expand the organization focus, guaranteeing an open work environment which is good to ideas generation that can be provided from employees, consumers or suppliers attending and that can attend market's needs and desires, strengthening the company's image and enhancing its value.

6 METHODOLOGY

Based on the official list of the most innovative enterprises from the south region of Brazil published in 2007 by the magazine Amanhã, the three most known enterprises among the five top enterprises of Rio Grande do Sul were selected to be analyzed by the following aspects.

7 ANALYSIS AND PRESENTATION OF RESULTS

For this specific analysis a short description of each enterprise will be done, and after, the classification of this enterprises on a table where important points of the innovation process are considered.

7.1 Randon S.A. – Implementos e Participações

Randon S.A. is a mixed holding company, leader of a group of seven companies that employ a workforce of 6 thousand employees and occupy a total built area of 727,764 m². In 2004, the companies accounted for a turnover of R$ 2,36 billion (total gross value). Randon Companies operate in the sectors of road equipment / railway wagons / specialty vehicles/ auto parts/ automotive systems, and services. They are all national leaders in their segments and benchmarks in technology and quality in Brazil and abroad,

in addition to being important players in the globalized market. They export to more than one hundred countries and have an International Network of Sales and Service Outlets.
Randon has an R & D process that considers research in partnership with universities and technological institutes Brazilian and American. The company also develops a program to communicate with consumers (doors open to the client), and organizes visits and other events aimed at increasing the knowledge of their customers.
The structure of its production lines and assembly are designed to allow flexibility to carry out changes, and can thus meet their consumers with quality and speed

7.2 Braskem

The company has the largest and most modern research complex in the sector in Latin America, the Innovation and Technology Centre of Braskem. The CTI has units in Triunfo, in Rio Grande do Sul, Camaçari, Bahia, and São Paulo, where products, processes, applications and new markets are developed in partnership with clients, plastic transformers that comprise the third generation. The company thus aggregates value and competitiveness to the entire petrochemical and plastic production chain.
Braskem is the most important petrochemical industry in the country, being responsible for plastics products, from toys to plastic packaging joint. One of the concerns of this company is linked to socio-environmental factors, they place programs to care for the environment and welfare of communities located near the factories.
Another important fact is that Braskem Invests in R & D and promotes partnerships with universities and research institutions from Brazil and the world in order to enhance their performance in R & D. Works with a wide range of products, which are updated constantly.

7.3 Banrisul

The Banrisul is a bank that is always in search of adding new services to the main product of a bank that is credit. Investing in technologies that enable agility in service, safety and facilities to the customer, the company is recognized as innovative in the area. The company guarantees a wide range of products and services offered to clients with special features targeted to individuals and businesses.
They have the ability to absorb ideas; they stimulate employees to bring ideas to the company, offering canals so that these ideas can reach the correct sectors, which will give the necessary attention, realizing the possibility of an innovation.

8 COMPARATIVE ANALYSIS

The following table try to demonstrate the principal features included in this study. To build this table we consider the innovation dimensions (FGV model), types of innovation and the presence of design thinking in the companies.

Company	Type of innovation	Generation model *	FGV MODEL	Design Thinking
Randon	Materials, products and process	Third generation	Idea generation, prioritization, implementation, investment, knowledge, alliances, governance, signal interpretation, leadership and strategic intent	Not identified
Braskem	Materials, products and process	Third generation	implementation, investment, knowledge, alliances, governance, leadership and strategic intent	Not identified
Banrisul	Products, services and process	Forth generation	Idea generation, prioritization, implementation, investment, knowledge, alliances, governance, signal interpretation, leadership and strategic intent	They consider a system where product is one component, like service, communication and experience.

The generation model refers to some main principles which are presents in the organization structure, this doesn't mean that the company adopt all of the principles of the suggested model, and neither that the company can't have any other principle present in other generation models.

CONCLUSION

This research presents the importance of the subject innovation, in the most diverse areas of the market. The valorisation of this aspect as a crucial factor in competitiveness and value generation becomes evident when we are looking for information about any company.

The different analyses related to innovation can bring to us data about how innovative is an organization. The methodology used by the Amanhã magazine, help us to understand what the main characteristics of an innovative company are.

Besides that is important to consider that most companies are working in a perspective not design oriented. None of the cases revealed the design as a source of innovation, despite the identification of a mentality close to the design thinking in Banrisul Group.

The types of innovation presented are primarily focus in products and services, processes and materials. Market or Management innovation wasn't identified in this study. It is important to consider that a design perspective could improve the innovation model, considering a multidisciplinary relations and a different model of the organization.

We could conclude that the investment is aimed at the most R & D and technology centres. The designer vision and his tools are not yet consider as an important component of an innovation culture.

In all three cases reviewed, design could play a decisive role in creating value and competitiveness. To achieve this it is important conduct a mental model change, creating a cultural design oriented.

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