PRODUCT DEVELOPMENT PROFESSIONALS IN RIO GRANDE DO SUL, BRAZIL

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Abstract

Design and product development involve several people of different areas of firms as well as customers and suppliers, providing inputs for the production process. Capabilities of designers affect the products developed by the firm and, consequently, the organizational image, being a possible source of added value for products.

This work intends to present the results of a research which aim is to diagnose designers participation and functions in firms of Rio Grande do Sul, one of the most productive states in Brazil. This study is part of a broader research focusing design management in firms that proposed presenting key characteristics of designers of small local enterprises and comparing them to a European study that focused firms with recognized product design.

Identifying designers´ characteristics and their role in industry can be considered one of the first steps for determining professional skills and capabilities that need to be ameliorated. For the less developed countries, this type of study is strategic, since comparing its designers´ characteristics to worldwide recognized ones, shows a possible way to follow for improving competitiveness.

In order to conduct the study, a survey was applied to small firms’ directors by means of an online questionnaire. When compared to the European results, evidences indicate that similarities and differences in both regions may be explained by relationships established by market and by diverseness of flexibility in the designing process.

Palabras claves (Keywords): designers´ characteristics, product development, competitiveness
1. Introduction

Design and product development involve several people of different areas of firms as well as customers and suppliers, providing inputs for the production process. In many industrial sectors, according to Kaplinsky and Morris [2001], primary economic rents are depending each time more on design, branding and marketing capabilities, due to the increasing development of the production processes in numerous countries. Since design contributes with products added value and as global competitiveness is a reality, improving the capabilities of professionals that are decisive in creating the products we use is essential. Identifying designers’ qualities and their role in different industrial sectors is the first step for enhancing professional characteristics of this area, using it for either selecting the product development team or for training it.

The aim of this paper is to present the results of a research that intended to diagnose designers participation and functions, this research is a part of a broader work focusing design management in firms of Rio Grande do Sul, one of the most productive states in Brazil. This study presents the key characteristics of designers through the vision of 27 directors of small local enterprises.

1.1. Competitive firms and designers

There are several professions that develop products and consequently work with design as architecture, industrial design, and engineering. They participate of an iterative process where the goal is solving a design problem: several tasks are performed in order to arrive to a solution that attends a series of requirements affecting different aspects of a product. In this process, each participant must use his/her expertise in any activity where professional knowledge or skills are demanded.

For Bruce, Cooper and Vazquez [1999] the acquisition of appropriate design competencies for creating and implementing new products, as well as for defining the corporate identity, is a critical factor in design management. The Design Council and the Creative & Cultural Skills [2008] mention that design can have a significant impact on business productivity, highlighting that when it is allied to creative abilities it may enhance a firm’s competitiveness. They suggest qualities that competitive designers should have, defending the idea that an efficient design is reached not only by creativity, but also by a combination of skills and capabilities acquired in the professional practice. These characteristics may be inherent to the designer, but may have been developed from his/her experiences, from the organization’s beliefs and values, and/or from the firm’s design processes. The United Kingdom National Economic Development Office – NEDO [1993] also enumerates other competencies apart from creativity, grouping them in the design, business, process, work perspective and structure, and interpersonal areas.

Cross [2002] has studied successful designers in order to identify common characteristics between them. He observed that their way of approaching the design problem is characterized by a broad vision, a personal and distinctive approach, and designing from basic principles. Based on literature, Borja de Mozota [2003] listed characteristics that are believed to be found in designers and studied 33 firms that differentiate themselves by their excellence in design, since they were nominated to the European Design Prize. This author found that the main characteristics of these firms’ designers are imagination (60% of the cases), sense of detail (56%), quality of dialogue (50%), knowledge of material (47%) and quality of perception (40%).
2. Material and Methods

In this paper, the result of a research that focuses on designers’ key characteristics is presented. This reflects the vision of 27 directors of small local enterprises of Rio Grande do Sul, Brazil. This work was based on a survey proposed by Borja de Mozota [2003] that studied European successful firms in terms of product development and design.

2.1. Geographical area: Rio Grande do Sul, Brazil

In the 2009-2010 Global Competitiveness Report, of a total of 133 countries Brazil was classified at the 56th place by the GCI (Global Competitiveness Index). The GCI is composed by three sub-indexes: (1) Basic Requirements, (2) Efficiency Enhancers, and (3) Innovation and Sophistication Factors. Brazil was best ranked in the Innovation and Sophistication Factors (38th of 133). In the Report, it is highlighted that Brazil is one of the five countries that continue to improve its competitiveness despite the world’s economical crisis, having as competitive advantages: “its extensive and growing domestic market, its access to one of the most developed financial markets in the region, and a diversified and sophisticated business sector with a significant potential for innovation”.

Rio Grande do Sul is the southernmost state of Brazil, as seen on Figure 1. This state has an area of 300,000 m², almost the size of Italy, representing 3.3% of Brazil’s area; more than 10 million inhabitants, comparable to Portugal’s population and approximately 6% of the Brazilian population; and it’s literacy rate is more than 92%, similar to European countries.

![Figure 1. Brazil and Rio Grande do Sul](image)

Rio Grande do Sul has the 4th most high GDP (Growth Domestic Product) per capita, participating with around 7% of the National GDP. According to Porsse et al [2006] it is Brazil’s
fourth more competitive state and the third one in means of knowledge and innovation. Industries represent 30% of Rio Grande do Sul´s economy, with four main pillars: agro industry, leather and shoe industry, chemical industry and metal and mechanical industry. The State also exports several types of products, some in which design is essential, as shoes, leather accessories, furniture, and clothing. Considering the World´s economic blocks, its principal markets are Asia (more than 20% of the total exported goods), the European Union (almost 20% of the total) and the Mercosul (approximately 15%) [SEPLAG, 2009], as seen in Figure 2.

![Figure 2. Percentage of exports of Rio Grande do Sul in 2007 (Adapted from SEPLAG, 2009)](image)

2.2. Focus: firms in Rio Grande do Sul

Twenty-seven firms pertaining to nine different industrial sectors participated of the study as shown in Figure 3.

These firms were selected because the type of products they develop and by their technological profile and size. In mean, each firm has 20 employees, is 14 years-old and works with design since six years ago. Two of them are certified ISO 9000, both belonging to the electro and electronics industry. In these firms, 56% have a design department, while in 7% a third party is in total charge of the design issues, meanwhile, 37% have an own design department but also have an external consultant. Their designers are graduated in design in 26% of the cases and the same proportion of firms train their non-graduated designers for these function.
In Brazil there have been several initiatives for intensifying firms competitiveness. An example is the MBC (Competitive Brazil Movement), whose aim is to augment firms competitiveness through the usage of management tools, innovation, marketing, and sustainable development, improving the quality of life of the Brazilian people. Some prizes for excellence in management and competitiveness are given annually, nine of the partaking firms participated of the management excellence prize partially organized by the MBC, but only one was classified in the states phase at Rio Grande do Sul.

2.3. Method: characterizing designers in Rio Grande do Sul

In order to characterize Rio Grande do Sul designers, a survey proposed by Borja de Mozota [2003] to characterize design management in firms was used. In the used questionnaire, among other questions, there was a section containing a list of 19 capabilities based on a literature review on which it was requested to identify the ones considered key capabilities of designers, as follows:
- Anticipation
- Capacity to understand the organizational image
- Capacity to generate a vision
- Capacity to listen
- Capacity to synthesize
- Capacity to visualize
- Knowledge of materials
- Knowledge of consumer
- Design culture
- Imagination
An invitation to respond the questionnaire was sent directly by e-mail to the directors of approximately 600 firms through SEBRAE (Brazilian Service for Aiding Micro and Small Firms), a partner institution that helps micro and small firms. The questionnaire was applied online and approximately 5% of the firms answered it, although one and a half month period was given to submit the questionnaire and several remainders were sent.

3. Results

As shown in Figure 4, the respondent firms pointed sense of detail (in 81% of the cases) as the main capability of designers, followed by imagination (74%), sense of geometry (63%), knowledge of material (63%), and capacity to generate a vision (63%). The characteristics considered the less important were quality of dialogue (19%), lateral thinking process (15%), and perfection in craftsmanship (11%).

![Figure 4. Importance of designers capabilities in Rio Grande do Sul firms](image)

It is important to highlight that in the same study presented by Borja de Mozota [2003] in European product development firms nominated to the European Design Prize, imagination,
sense of detail, and knowledge of material are also among the first five key characteristics pointed out.

Another part of the study that shall be mentioned is the view of design as knowledge, a significant difference between both regions is pointed out by it. In the European study, firms consider design as a knowledge that introduces changes in processes (Borja de Mozota 2003), meanwhile in Rio Grande do Sul this is less strong. This indicates a more managerial view of design in Europe, associating it to other processes involved in product development.

Another explanation may be the fact that in the European firms 54% have graduated designers and 51% are in constant contact with design schools (Borja de Mozota 2003), while in Rio Grande do Sul only 26% of the professionals have a designer degree and 26% of the firms communicate regularly with design schools. This demonstrates that in European industry design is seen more formally as a profession, being more linked to academic knowledge that in Rio Grande do Sul.

Conclusions

Studying designers characteristics is crucial to understanding and improving competitiveness in product development and design. The study presented in this paper was applied in one of the most competitive and productive Brazilian states, Rio Grande do Sul, where many industries export their products, having to compete not only locally, but also internationally, this may be a critical factor for maintaining regional productivity and searching competitiveness. The same study was applied before in Europe by Borja de Mozota [2002], and also included several industrial sectors, such as lighting, plastic accessories for home and office, individual protection equipments, electro and electronics, clothing and shoes, furniture, and custom furniture, from Italy, Germany, UK, Finland, Sweden, France, Spain, Denmark, and other countries. All of the European countries are better classified than Brazil by the GCI in the GCR 2009-2010, being more competitive.

Business directors in Rio Grande do Sul consider (1) sense of detail, (2) imagination, (3) sense of geometry, (4) knowledge of material, and (5) capacity to generate a vision as the main designers´ key capabilities. Following Borja de Mozota [2003], European firms indicated (1) imagination, (2) sense of detail, (3) quality of dialogue, (4) knowledge of material, and (5) quality of perception as the five more important characteristics of designers. As seen, imagination, sense of detail, and knowledge of material were pointed amid the five first key characteristics in both studies, indicating that these items may be considered as the strongest characteristics in competitive designers.

However, considering imagination as a synonym of creativity, Design Council; Creative & Cultural Skills [2008] and NEDO [1993] view it as a basic characteristic of designers, but not the only one. Borja de Mozota [2003b] analyzed David Walker´s design tree, emphasizing that knowledge of material and sense of detail are design competencies, rooted in the design profession. An important difference is observed when considering the groups of competencies pointed out by NEDO (1993): while in Rio Grande do Sul, design competencies seem to be prominent (sense of geometry and capacity to generate vision are also design competencies), in European firms work perspective and structure competencies appear to be a leading question too (valorize more quality of dialogue and quality of perception).

The importance given to the sense of geometry could be explained by the participating industrial sectors, since for metal and mechanical, electro and electronics, and furniture industries geometry
is important for technical reasons, and for gemstones and jewels it is a decisive factor in value. These industries represent around 40% of the studied ones.

In Europe the design process seems to be more interactive and flexible, oriented to work, for the appraisal of the quality of dialogue and of perception. This is a profound difference between both regions, since in Rio Grande do Sul quality of perception is ranked in the 8th position and the capacities to synthesize, to listen and to dialogue are amongst the last five characteristics.

Reminding that 7% of the firms declared that a third party is totally responsible for the design issues and that in 37% of the cases, even though the firms have an own designer, they count on external consultants too, it is possible to say that Brazilian industries transfer the responsibility for the final definition of products to designers. This would explain why in Rio Grande do Sul communication characteristics are less important.

It is also important to highlight that in Rio Grande do Sul the studied firms have a less managerial view of design as they consider it more weakly as a knowledge that modifies processes. The European professional view of design is stronger too, as more than 50% of firms’ designers are academically prepared, while in Rio Grande do Sul this is a reality in less than 30% of the firms. Both of these statements can justify why in Europe design competencies seem to be more strong and valorized by managers.

It is important to reinforce that identifying designers´ characteristics may be one of the first steps for improving their competitiveness, enabling the ability to select appropriate professionals and to work on skills and capabilities that need to be ameliorated in different sectors. As seen, a priority may be the valorization of the design profession and the increase of the number of design courses, stimulating the academic preparation of people who work in the product development area.

For the less developed countries, this type of study is strategic, for comparing its designers´ characteristics to worldwide recognized ones, shows a possible way to follow for attaining this goal. In the case of Brazil, this study contributes with the efforts that have been made to improve the Country´s competitiveness, due that design is one of the elements that play a significant part in it. It would be desirable to continue this study in other regions in order to broaden the sample and to establish relationships not only between other regions, but also between industrial sectors.

References


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