

# **BUSINESS-DESIGN LABORATORY: A STRATEGY FOR INNOVATION**

**María Clara BETANCOURT VELASCO<sup>1</sup> and Luis Alfonso MEJIA PUIG<sup>2</sup>**

<sup>1</sup>Department of Design, Icesi University, Cali, Colombia

<sup>2</sup>School of Industrial Design, Icesi University, Cali, Colombia

## **ABSTRACT**

The contribution of industrial design schools to the development of innovative products is well known around the industrialized world. In Colombia, however, industrial design is a young practice and the market is not yet aware of the importance of design as a factor for innovation.

In Colombia, the work of industrial designers is almost unknown and there is also no concrete/direct link to the private sector so as to address the real problems of the industry, improving its competitiveness and recognizing the essential attributes of design in its performance. From the academia we are looking for strategies that help us spread the practice of design and encourage companies to do more research, design and product development so as to better compete in the global market.

The Business-Design Laboratory is an initiative, whereby a company provides its facilities to one of our final year students for a period of two weeks. The student's purpose is to identify one problem and present a potential solution to it. The proposal is intended to show the employers the impact of design thinking on areas that they might not had considered before; also leading them to discover the competencies of an industrial designer and how he might contribute to the improvement of the company. So far the outcomes of this exercise, carried out seven times by now, has been excellent in linking practitioners to companies that had no design in its structure before.

*Keywords: Design, innovation, business, academia*

## **1 INTRODUCTION**

In developing countries like Colombia, it is very common to associate the design profession with areas such as art, crafts, fashion and drawing. People ignore the contribution of design to economic phenomena and very commonly they connect design with cultural and social phenomena. The tendency is to identify design with the purely aesthetic aspects of products. This is a call for universities for increasing awareness about design professions among companies. With the aim of placing design in various dimensions, from industrial to social practices, and to promote innovation, development and research in this particular field of knowledge, we have seen the need of changing traditional practices in design education. The academic world has to be linked to the world of business in many ways and throughout the 10 semesters of the design career. New practices include working with regional companies on specific projects, and jointly participating in national and international contests as well as in the Business-Design Laboratory with senior students. The purpose of this paper is to share the results of this exercise over the last five years, using academy as an entity that supports and promotes design, since there are no national policies for this field as they are in other countries. Icesi University is a non-profit institution founded in 1979 by the leading companies of the Valle del Cauca region. Icesi's pillar of education is entrepreneurial creativity promoted by the CDEE (Spanish acronym for Center for Entrepreneurial Development). Established in 1985, it was the first of its kind in Colombia. Working hand in hand with regional companies and entrepreneurs, the CDEE is part of the university's training strategy. Concerning the design program, we place emphasis on creativity and innovation with the purpose of influencing the added-value of products, improving production processes, and finally increasing the competitiveness of companies in the local market and the globalized world.

In today's world, the most valuable assets of a company are represented in intangibles such as intellectual and creative capital both considered great generators of added value (Ospina, Restrepo,

Estrada 2004). This change requires us to assume different positions from the academic world. According to Peters (2003) it is time to have an "education for a creative and independent era, because we have reached the age of design."

Colombia has an incipient industry in the area of creativity. In previous years contract manufacturing of products that had been designed abroad was a usual practice due to the low labour costs. Today that scenario has changed and more competitive countries in terms of manufacturing, such as China, have occupied Colombia's place. Therefore, over the past 20 years, the Colombian industry has been forced to implement creative processes so as to develop new products of high added value. Colombian companies have slowly come to understand the importance and value of innovation for their own structures and provide everyday examples of successful implementation (Dinero Magazine, 2006). It is in this context that the project of the "Business-Design laboratory" is being developed. Out of all invitees, small and medium enterprises (SMEs) have shown the highest percentage of best experiences with students. In Latin America SMEs are the largest source of employment. In Colombia for the year 2005, SMEs represented 97% of establishments and 70% of total employment (Garzón, 2005). However, this sector is in a disadvantageous position when compared with developed countries, because there is no investment in design, innovation and research for the development of new products.

## **2 OBJECTIVE**

This laboratory aims to bring the industry closer to the discipline of design, proving its benefits through a design exercise executed in a short period of time. It is an opportunity for creating products with a high innovation factor, thus contributing to the competitiveness of Colombian companies in the global context and training the student in finding new business opportunities within the companies.

### **2.1 Secondary Objectives**

To map the region's companies regarding their production and use of design as a tool for innovation so as to gradually prepare the medium for the inclusion of new designers. To give students the possibility of having real contact with companies, allowing them to identify situations that can be improved through design and generation of creative ideas. To present the multiple skills of industrial designers to the companies, emphasizing that they go beyond the simple creation of products.

## **3 METHODOLOGY**

Before discussing the methodology of the Laboratory, it is important to understand its origins. The Business-Design Laboratory was founded in 2005 responding to the need of promoting the academic program of Industrial Design and of creating links between academia and business. The aim was to raise awareness about the design discipline and the contribution of designers to business structures. In that context, a strategic alliance was build between the Center for Professional Development (Spanish acronym: CEDEP) at the University Icesi - responsible for the internships of the university's academic programs- and the Industrial Design program in order to identify effective placement strategies for interns and graduates. The importance of this alliance should be highlighted, given that the discipline is truly unknown. Industrial Design in Colombia is barely 35 years old and Icesi's program founded in 1998 was the first industrial design program in the southwest of the country. For that reason, both local and regional companies are mostly unaware of the discipline, the functions of the graduates and their potential contributions to the industry and its competitiveness in global markets.

As a result of this alliance, the project "Business-Design Laboratory" was created with the intention of establishing a first approach between the academic world and the world of business and hence encouraging the collaboration and innovation among them.

The steps of the Business-Design Laboratory are described as follows:

The first step is given by the interaction with students that are close to completing their career as Industrial Designers. We create a space for discussion with students so as to better understand what their job expectations are once they graduate. It is important to note that this is a stage of motivation in which students should be able to understand the importance of this workshop for their future engagement in any business. It is also about making them feel as ambassadors of the discipline, and thereby their function is to publicize its possibilities.

The next step is to select companies that may use Industrial Design as a tool for differentiation and generation of added value. This step is performed directly by the CEDEP, with support of two industrial designers who have an in-depth knowledge of the discipline. Information is gathered from the records of Cali's Chamber of Commerce, lists of regional companies and the university's own databases from past experiences. It should be noted that we constantly receive requests from companies looking for assistance, whose problems can be solved through design. Depending on the complexity of their requests, these companies are offered consultancy services or graduation projects of our students or are taken into account as possible participants of the Business-Design Laboratory. Considering that one of the main objectives is to promote the discipline, a lot of companies are approached, especially those unaware of the discipline and its dimensions. This implies a purely commercial approach from the industrial designers linked directly to the CEDEP as well as the Center's directors. It is important to understand how critical this stage is, for a proper display about the possibilities of having a designer within the company will allow managers to better understand innovation as a tool for improving competitiveness. This will also ensure a proper link between academia and business.

During one or two weeks, the company opens its doors to the students. After learning about their production processes, students are expected to identify situations that might be improved through the application of industrial design. It should be noted that this is a new phase of the Business-Design Laboratory that resulted in the process of learning from previous events. In earlier versions of the Laboratory, the problems to be solved were proposed by the company. This led us to a point where the industrial designer was understood more as a technician with the ability of crystallizing ideas than as a source for generating new design-related ideas for problem solution. So far students have identified many ideas which the companies had not even considered before. Students' creative capacity and design's contribution to innovation became evident. Not only manufactured products, also workstations and internal operations of the company were positively affected. It should be noted that at this stage, students must sign confidentiality agreements with the company ensuring the proper handling of information.

After their immersion in the company, students must present a report/brief in which they expose the problem, possible solutions and the scope of the intervention. Once their brief is approved, students enter into a rapid phase of design that will last 24 hours in which they will have all the technical resources of the university to their disposal. At the end of this stage, students must make a brief presentation of their project to the entrepreneurs just as they would have to do if they were working for the company. Additionally, other companies are invited to attend the presentation session. Thus, they get a glance of all the projects being developed in the Business-Design Laboratory and also gain a broader view of the possibilities of the discipline. In that same sense, as part of the awareness strategy, before starting with the presentation session, the invitees receive a lecture from a special guest who digs a little deeper into the issues of design and thereby illustrates the importance of the creative process for business innovation. It is important to understand that the 24 hour period given to the students is for them to outline an idea or starting point. In such a short period of time, there is no intention of creating a product or a tangible result; it simply would not be achievable. However, this activity can be considered as a starting point for further product development thus opening the possibility to link students to the companies through internships.

After the presentation stage we collect feedback from participating employers and students, in order not only to assess the laboratory, but understanding the motivations of the companies in terms of the recruitment of students and the need to improve their products. Survey results allow us to draw conclusions and to constantly improve the activity. The employer questionnaire has been the same for the last six laboratories and it evaluates the proposals submitted by the students in terms of innovation, production, and marketing. There is also a question about the chances and the reasons of the employer for hiring a designer for his company. The student questionnaire focuses on the students' preferences regarding the size of the companies they work with/for, if there was a learning experience and of what type. During the first laboratory no surveys were implemented; this process started with the second experience. For the first two years, the laboratory was held on a biannually basis which made it difficult for entrepreneurs to attend and only a small number of students did participate. Therefore it was decided to organize the laboratory on a yearly basis.

Some of the results of the last six versions of the business-design laboratory are as follows: regarding the question related to the innovation of the presented proposal, an average of 66.32% of the companies thinks that the proposals are innovative, 50.5% considers that the exercise met their expectations, while 37.14% were positively surprised by the results. Figure 1 shows the companies' level of satisfaction of the last six laboratories with respect to the innovation component of the designs.

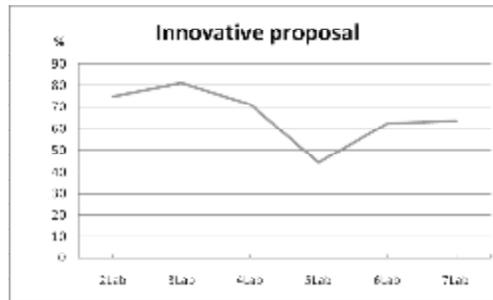


Figure 1. Level of satisfaction regarding the innovation component of the proposals.

Recent laboratories evidence a decline in the level of satisfaction of the employers. This is because the methodology was changed; initially it was the company who presented the problem to be solved and in the latest versions the students are the ones identifying the problem within the company.

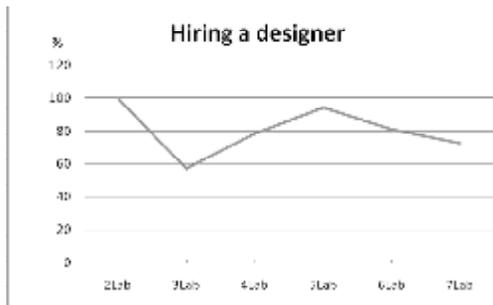


Figure 2. Intention of hiring a designer for the company.

Regarding the intention of hiring a designer (Figure 2), 80.63% of the employers would do it; the rest would not do it either because hiring other professionals is a priority for them or because they cannot afford to pay for a designer. When giving the option of hiring designers as members of the R&D units of the companies (Figure 3), an average of 59.54% employers would hire designers for their research and product development areas. Concerning the reasons for hiring a designer there were not many differences. Among the most important reasons entrepreneurs include creativity, problem solving capabilities, and research and marketing strategies. Only a small percentage believes that designers might contribute to technical or production processes and this is due to the emphasis of the program on areas such as design administration and management.

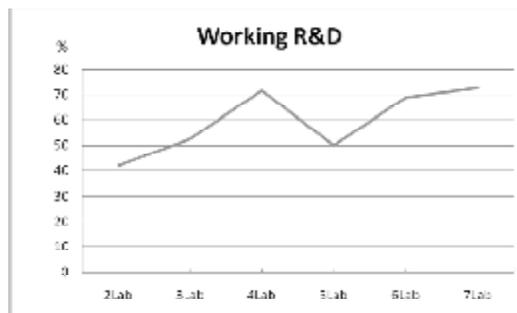


Figure 3. Location of designer in research and development areas



Figure 4. Reasons for hiring a designer

Participation of companies in the business-design laboratory has not been massive. An average of 14 companies participates each year, among large enterprises, SMEs and micro enterprises. Students say that working with small businesses is more satisfactory, because generally these organizations had never worked with designers before. An average of 27 students has participated in each laboratory. Two experiences with regional companies who participated in the last laboratory are commented as follows:

Case 1: INVAL. This company specializes in producing RTA (Ready-To-Assemble) furniture. It is well positioned and widely recognized. It is a supplier of supermarkets and other outlets. It also produces home and office furniture for manufacturers and trading firms and is located in the city of Palmira.

Until 2009 Inval had never hired industrial designers. The head of production was responsible for the creative and innovation process. His training as an engineer allowed him to create products, but without effectively responding to market conditions. With the opening of new markets in Colombia and the entry of similar products at much more affordable prices, Inval began to understand the importance of innovation for growth. After several approaches to the academia, the company was taken into account for the Business-Design Laboratory so as to learn about the opportunities offered by the graduates.

Inval first participated in the sixth Business-Design Laboratory. The students that were assigned to the company found that the installed manufacturing capacity and the results of the market analysis allowed the company to create new products focused on a more exclusive market range thus, opening a new niche for the company and RTA furniture that had previously not been explored in Colombia. It is important to understand that furniture in Colombia has traditionally been the work of craftsmen/carpenters. They have focused on high-end markets, while industrial manufacturing of RTA furniture is more low-end market oriented. Students proposed to Inval the creation of a new product segment. After the sixth Business-Design Laboratory, Inval hired its first intern, who was in charge of developing this new product line. Afterwards the design department of the company was created and currently there are two graduates working on the creative area. They have kept the doors open for continue working with the university in order to develop new products and lines, such as the children's line developed last year. In addition to this, the company entered into a systematization process. They were using CAM technology for the manufacturing of furniture, but did not use the CAD dimension properly because they did not have designers. Practitioners were able to close this gap and Inval is currently implementing its systematization process from the initial process of design.

Case 2: Plasticos Rimax LTDA. This is a company dedicated to the processing and marketing of plastic. It is one of the largest Latin American companies developing a wide range of decorative plastic products for both home and business in general. Located in Cali – Colombia, it exports to over 25 countries of the Americas, Europe and Asia. Rimax has four products lines: Furniture & Garden, Houseware, Hardware Store & Industrial.

Rimax is a company producing injection molds based on designs brought from abroad. After the economic opening, it became clear that the world of plastic injection was divided into two market positions. The first one promotes innovation as a factor for competitiveness and almost as a guarantee of a market-leading position. The second one is a manufacturing cost-based position. With the entry of a variety of cheaper products into the Colombian market, Rimax saw in design the potential for competitive differentiation. As a result of the sixth Business-Design Laboratory Rimax was presented

a proposal for a chair that would differentiate the company from the industry standard. Consequently, a designer was linked to the company and although he did not finish the chair design process, he was given the responsibility of creating new products. Finally he managed to consolidate the children's line. Rimax did not use the CAD platform for the development of their designs, but as a result of this process it ended up creating its own design department as part of its organizational structure.

#### **4 CONCLUSIONS**

Five years after the creation of the Business-Design Laboratory, there is still the need of bringing business and design together. Therefore we must design new strategies everyday so as to improve the image of industrial designers and share their occupational profile. We have seen that once companies have contact with the designers of the Laboratory, they are more likely to understand the benefits of hiring one and some of them are already working with practitioners. Emphasis is put on the creation of design departments; technology, hardware and software procurement; and product development. Additionally, in the short term they are starting to consider design as an investment and not as an expense of their company.

#### **REFERENCES**

- [1] Garzón D. R. Programa sobre operaciones colectivas entre empresas. In *Seminario Iberoamericano sobre integración Empresarial y Cooperativa: cooperar y exportar para ganar. Convenio BID-ATN/ME 7856 CO.* [www.iberpymeonline.org/venezuela130705/ricardogarzon](http://www.iberpymeonline.org/venezuela130705/ricardogarzon).
- [2] Ospina W., Restrepo L. and Estrada S. Capital humano y conocimiento, Retos para la empresa del siglo XXI. *Scientia et Technica. Año X, No 25, 2004.* pp 215-219.
- [3] Peters T. *Re-Imagina.* 2006. Pearson Prentice Hall. Madrid.
- [4] *Innovación.* Revista Dinero. Octubre 27 de 2006 No. 265. Publicaciones Dinero Ltda. Bogotá. pp 72-122.
- [5] INVAL. [www.inval.com.co](http://www.inval.com.co).
- [6] RIMAX Ltda. [www.rimax.com.co](http://www.rimax.com.co).