

Design Thinking for Innovation in Colombian SMEs

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ABSTRACT

This article shows a research experience developed for the Institute for Sustainable Entrepreneurship Team at the EAN University through innovation projects and consultancies using the Design Thinking Theories that have been developed with Micro, Small and Medium Enterprises (SMEs) in Colombia. This experience allowed to build and apply a new methodology of business strategic tutoring based on innovation and social design. In recent years, Colombia has become the third country with the best business environment in Latin America, a favorable scenario for business development. However, companies do not know the importance of applying active methodologies related to the management of the business design, creativity and learning techniques for the empowerment of business professionals in a real way through the use of Design practices of Business, DPB in the Design Thinking aims. The project had allowed to obtain tangible and beneficial results for companies involved using the design as core idea during strategic innovation application in Colombian Micro, Small and Medium Enterprises (SMEs).

Keywords: Design Thinking, Innovation, engineering projects, entrepreneurship, Colombia

Introduction

During the second half of the twentieth century and the beginning of the twenty first century, the concept of what is now understood as Design Thinking has been developing, an expression coined by the D-School from the Institute of Design at Stanford University, California (USA). The concept of Design Thinking is defined as a systemic and integral process based on design practices and methods, where creativity is fundamental and innovation is the objective. D-School has enhanced the advantages of working with multidisciplinary teams in innovation projects

development using design methodologies that facilitate ideation and creative solutions to complex situations or problems, (Design Council, 2007).

There are countless examples that demonstrate that the application of Design Thinking in companies is a way to develop innovation, and it can be observed in three ways: the first one focused on the improvement or development of products and services, the second one on the optimization of the internal processes in the company, and the third one in the formulation of new business lines or even in the generation of new companies through entrepreneurship projects.

Brown & Kätz (2009) define Design Thinking as a process with three main phases: inspiration, ideation and implementation, 1) Inspiration based on a problem or opportunity that requires several alternatives to find the best solution, 2) Ideation, the part that uses the power of creativity to create, develop and prototype concepts and ideas and 3) Implementation, when the project jumps from working table to the real world: the market.

The application of Design Thinking in companies was initially focused on product development, a task that was inherited from engineering and the interest in improving production processes, in some cases seeking to incorporate better materials or add value through new uses. A more extensive approach included the application of design in business management, social development and economic transformation, (Magal-Royo et al., 2013).

Design Thinking Applied to Enterprises

Design Thinking methodologies permits to companies work with a frame work based on several premises that it could be used as a whole or depends its needs. In fact, design and creative process has to be in account when they decide to use it in a new projects, product or service, (Florida, 2012). In general, there are six basic premises that define it and serve as a link between all of them:

- A systemic and integral process based on design practices and methods, where creativity is fundamental and innovation is the objective.
- Process development is a collaborative task which multidisciplinary profiles are involved, users, clients or final consumers, for instance.
- Its objective is facilitate solution/s of complex and dynamic problems through the use of design methodologies and taking into account the target audience or specific target market.
- Developed in sequential phases or stages which specific tasks are carried out that produce information that serves as an input to the following step. However, it is not a linear process, since it can be iterated into previous phases when necessary or it can be a cyclic process.
- It is a fundamental stage because include a prototyping, testing or validation process of new product and/or service prior to implement final solution that allows to reduce risks or failure in companies.
- Its results are focused on applied innovation in companies through the development of innovative products and services, the redesign of internal processes favouring the company or future entrepreneurial projects for the construction of new businesses of autonomous and independent character.

Adapting Design Thinking in Colombian Context

The complexity and particularities of the different cultures in the countries that conform Latin America, together with the different social needs that each of them have, generate a gap between the real scenario from which some methodologies were created and the scenario in which they are applied, a situation that is not only seen in this model, but is a generalized symptom in many methodologies that are developed in first world countries and then incorporated in developing countries, (Ketelhöhn & Ogliastri, 2013).

Up to 1990 population growth in Colombia had an increasing exponential behavior for the population between 0 and 14 years of age, which ensured for the following decade a significant productive population that would support the economic and social demands of the country, also called dependencies by young ages and advanced ages. According to the Ministry of Health and Social Protection, population growth during the period 1995-2020, predicts for Colombia an active participation of young population in the economy, which allows generating productive investments or increasing social investment in the improvement of education, health, as well as in the fight against poverty. In fact, it has been observed that since 2005, there has been a decrease in the dependence by young ages, generating greater availability of money for different uses: technology, tourism, real estate, and higher education, among others. This also means that by 2020, Colombia will have the highest percentage of adult population in its history and therefore, greater demands for this population, (Ministerio de Salud y Protección Social, 2013).

In recent years, Colombia has become the third country with the best business environment in Latin America, a favorable scenario for business development, however, there are relevant factors to analyze. One of these is the low investment in R+D+I (Research, Development and Innovation), represented by 0.2% of the Gross Domestic Product (GDP) added to the typology of companies which make up the Colombian business sector, represented in a 96% by small and medium-sized enterprises (SMEs) (Velásquez, 2004).

The reports issued by the Ministry of Information Technology during the year 2016, indicate that there are three future technological challenges that 96% of the entrepreneurs in the country will have to overcome, which correspond precisely to the SMEs in Colombia. These three challenges focus on a number of specific objectives:

1. Remove the barriers that are perceived by entrepreneurs to connect themselves (cost, knowledge and advice)
2. Generate capabilities (web presence, social networks, digital content, office programs)
3. Promotion in the use of digital social networks to promote digital business.

With the constant changes that are presented in the business world at the level of technology, challenges for the financial systems of the countries are developing at a fast pace, while in traditional practices the technology used to adapt to the regulations of the countries; at this point, it is interesting to observe how regulations seek to adapt quickly to innovations and respond to market needs, (Villa & Melo, 2015). Panorama actual de la innovación social en Colombia. According to the global competitiveness report of the World Economic Forum in 2016, Colombia has been climbing positions in the ranking that scores the most innovative countries, since it

reached the 90th position in 2010, by 2015 it was already in position 61, and it is expected that for 2017 it reaches position number 50. This report also explains that innovation:

"... in an ecosystem where business, regulations and social norms promote connectivity, creativity, entrepreneurship, collaboration and adoption of the latest technologies to generate new ideas and offer products and business models that are new to the market ... " (World Economic Forum, 2016).

In order to achieve a sustainable development in Colombia, it is necessary for companies to establish innovation strategies that improve their products and services or allow them to create new ones to be more competitive within and out of the country. In this sense, it has been shown how some design methodologies have supported these innovations.

Design Thinking allow to evaluate the innovation in the Colombian SMEs from theoretical models, among which we can highlight the one created by Buckland and Murillo who based on the Murray model, (Murray et al.,2010) propose a series of additional variables to be taken into account when applying this method in Latin America, (Buckland & Murillo 2014). Their work makes a lot of sense considering the high percentage of SMEs in the Colombian business community and the high social impact that the activities of this type of companies have from the productive and manufacturing sectors. The model proposes five vital variables to consider when evaluating or proposing a social innovation project especially for Latin America. These variables draw a path from the definition of the project to the questioning of how to make it sustainable and replicable in similar ecosystems or conditions (see Figure 1).

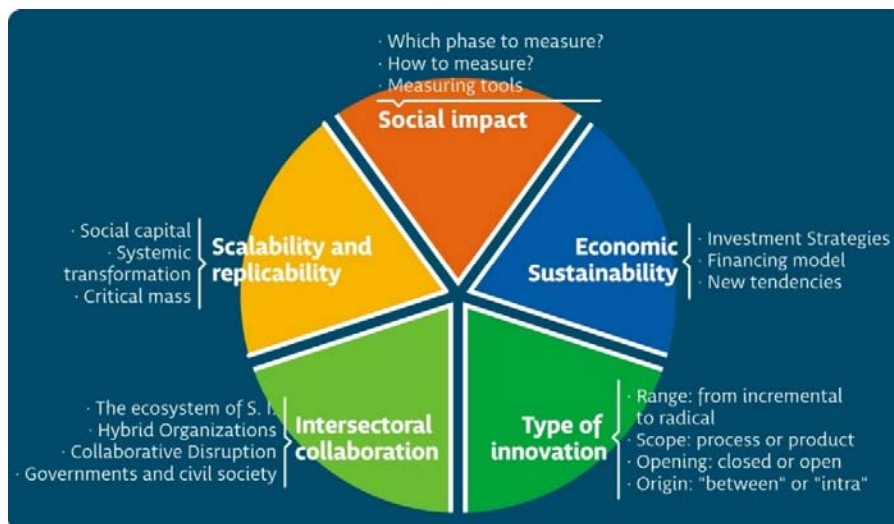


Figure 1: Variables in the application of the social innovation model for Latin America
Source: Buckland & Murillo (2014)

In reference to the applied variables, we can find:

- **Social impact:** This variable should be understood as the point at which the questions of how far the proposed initiative can achieve a true social transformation and how it solves

the posed innovation challenge in terms of measurable and verifiable impact, are answered, (Velasquez, 2004).

- Economic sustainability: this variable refers to the approach of a financing and survival strategy model that guarantees the long-term financial sustainability of the project. Many social projects start with resources from third-party donations without proposing medium-term self-financing strategies that condemn them to failure due to lack of resources. In other cases, the lack of transparency in the management of resources discourages the participation not only of large benefactors but also of ordinary people who can support through microcredit or strategies such as crowdfunding.
- Type of innovation: not all types of innovation are relevant to any need, each case is different and it is necessary to define the type of innovation that is intended to be developed, encompassing the initiative or project that has been proposed, in order to assist in the approach and development strategy of the project.
- Intersectoral collaboration: this variable refers to the definition of the different stakeholders who will come into contact with the initiative and the exchange of values or capital that they will have with the project. In many of the social innovation projects, the participation of public or governmental entities guarantees the impact and scope of the project, however, the involvement of the business ecosystem enhances the implementation of the different initiatives that are achieved with the development of the social innovation project.
- Scalability and replicability: this variable refers to the possibility of growth of the initiative in the context of origin, or in others with similar ecosystem conditions. The course of action of this variable consists in the vision of the project team with the ability to identify the characteristics that can be replicated in other scenarios or those that can allow the initiative to have a global growth starting from the local. Taking into account that the systemic change is the main objective, the challenge is to develop initiatives that can multiply.

Creative Design Practices of Business as a Support for Design Thinking Methodologies

The methodological concept of Design Practices for Business (PDN) encompasses a series of design and creativity tools focused on design management from a didactic and practical point of view for companies of any type but which really fit in small and medium dynamic companies throughout the world and specifically in Colombian companies (Patiño et al, 2016), (see Figure 2). In diagram are identified as opportunities oriented to:

- From the strategic point of view, understanding that design and creative tools can become a philosophy for companies that seek to install innovation as part of their business values and understand it as an added value that makes them more competent in the face of market challenges, (Keeley,2013).
- From the tactical point of view, to maximize the use of methodologies based on design or associated with knowledge of the user and the market, such as practices and methods from anthropology, psychology or even neuroscience and that contribute to tacit knowledge.
- From the operational level, the formulation of projects that allow innovation to become effective

in companies and allow them to improve their income, making them more profitable financially or helping them to occupy better positions within the market.

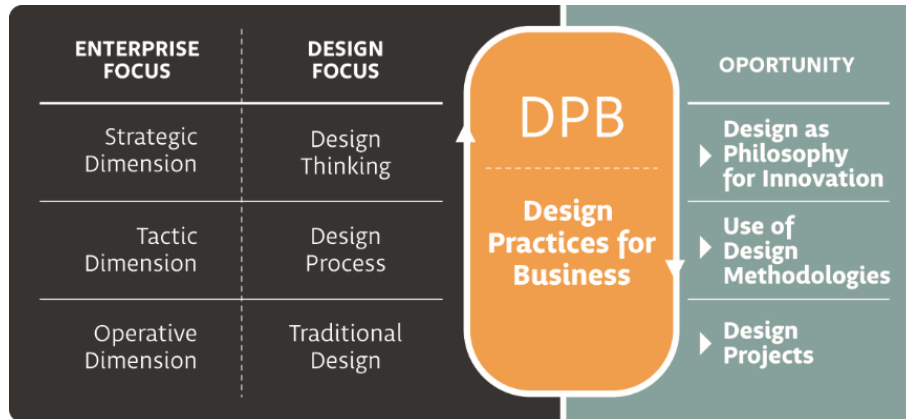


Figure 2: Design Practices for Business framework, PDN
(Jiménez-Ibañez, 2017)

Conclusions

The conclusions provided by the work that was carried out with the Design Thinking method applied to the SMEs in Colombia through Design Practices for Business, PDN which allows to define future aspects in the treatment and investigation of the information that was obtained from the scenario of Colombian companies:

- Currently, there are programs to promote innovation and creativity in companies that are powered by the Chambers of Commerce of each of the regions with own and government resources.
- Some entrepreneurs participate in awareness programs to generate an innovative culture, however, when they return to their companies, the paths or steps to apply the knowledge that was acquired are not clear, reason why a model linked to methodologies and tools that could facilitate this task would be very useful.
- 96% of the companies are categorized as micro, small or medium enterprises, so due to their size, they are not usually willing to invest in innovation since the perception of risk caused by the uncertainty that is generated in this type of process as a result of the lack of knowledge about the subject is too high.
- 80% of Colombian companies are family businesses, businesses that have been passed down from generation to generation and that show a strong resistance to change, especially when it comes to implementing new models and methods.
- Although there are experts who are acting as consultants in innovation for companies and organizations, their work has reached to the proposal of European and North American models that do not entirely fit the Colombian context and that in the majority of the cases remains in the formulation and dies in the implementation due to the lack of competencies of the profiles that must carry out this task.

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