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## The design and technological innovation: how to understand the growth of startups companies in competitive business environment

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### Abstract

This paper analyzes how the strategy focusing on design-driven innovation can help startups in creating design concepts or business innovators to promote the growth of such companies so sustainable in its market, where competition is fierce and full. As much as there is an understanding and recognition of the importance of design as a management tool, Brazilian startups have difficulties in linking the design driven innovation with the strategies of their small organizations devoted to innovate. Thus, through a literature review using the recent lines of research that address the design-driven innovation, design management and innovation, it was possible to develop a strategic management model targeted to the profile of startups based on design driven innovation to contribute to the building and strengthening of values related to the design and innovation in the organizational environment of these young companies, in which the correct and effective use of these methods / tools always lead to growth and greater interaction of the brand / product to the end user

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### 1. Introduction

Many companies in the XXI century are going beyond the traditional calculations and analyzes. This is the case of small and young firms known startups. These organizations have realized that many of these procedures are identical, and want something different, they can discover extremely profitable niche markets to innovate without

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the need huge investments. Introduced into their product or service innovations that your users fall in love immediately.

This thinking has led many of these companies to the world of design, although this area is traditionally known for the aesthetic appearance of products, however the primary objective it is to promote maximum well-being in people's lives. It allows even a number of methods, tools and techniques that can be used in different stages of the innovation process to increase the amount of new products and services. The design proposes a process in which companies can look the same context with a new perspective, so that a startup is not only driven by the marketing of new technologies, but driven by new meanings to promote products and services, since the consumers do not buy more exclusively by the impulse of the aesthetic quality of products, but their decisions include criteria emotional, social, cultural and psychological and usability.

The design-driven innovation is a strategy focused on delivering distinct offerings that provide new meanings through radical proposals which are not limited only to analyze user universe, but get a larger context of how the environment in which people live is evolving and which could change for the better. Includes in its process called interpreters of meaning to detect, attract and interact different concepts to products. In addition to supporting the development of new products with extraordinary meanings for users, it also provides a high degree of innovation of the product or service in the market.

In Brazil, startups are considered startups and many of them are embedded in the context of an incubation process in order to receive funding for projects supported by external sources of financing, but also a way to optimize a small capital. The incubators are responsible for assisting these companies to develop a strategic plan and develop your business plan in the short and medium term. However, this article contributes to the strengthening of design concepts for startups in Brazil in order to provide an understanding of how the design area may help these small businesses to create and implement successful strategies, which make them suppliers radical innovations in an extremely competitive market. In this sense, a strategic model geared to these companies, which includes innovation driven design approach to innovation, it is extremely relevant for the purpose that these companies become differentiated and scalable, they can get a prominent position in an increasingly dynamic consumer market.

## **2. Literature review**

### *2.1. Startups and the competitive market*

[4] defines a startup as "a company or a human institution that is built on different branches and that spontaneously arises the condition of extreme uncertainty, has at its core innovation to create products and services which they wish revolutionize the market." Complementing this definition, [1] states that a startup, connected to any type of business, which is not in focus to product innovation or services and therefore waived for the risks of uncertainty, it is not a startup.

In a highly competitive environment, startups have an important role. Young entrepreneurs willing to take risks with disruptive ideas and creativity, create completely new business that help invigorate the economy of a country. However, as much as a startup has a revolutionary idea, is no guarantee of sustainable success. Such companies often seek financing for their projects become scalable and profitable.

As the market for startups is characterized by uncertainty and also because they are completely new businesses, there is a long and stable operating history, since it does not have statistics or experience, which makes them companies with high risk of mortality in the first years of activity . The great challenge of these companies is to remain essentially creative not only in innovation in products or services, but also in the company's management mechanisms.

It is with this thought that other business functions also make it up as important as the development of new products or technologies. A startup should not be focused on the product only, but in your market, competitors, users, suppliers to be identified real opportunities for innovation. For this, a strategic long-term vision is important, with objectives and goals outlined for the young entrepreneurs have a guiding instrument of their actions.

## *2.2. The economic and social importance of startups*

In developed countries like the United States, startups have an important role in the economy. The region of Silicon Valley, known for harboring renowned high-tech companies such as Google, Cisco, Facebook and Apple, is considered the most promising startups in the world environment. About 86% of Valley startups receive high investment values. It is estimated that there are 298,800 angel investors, critical to the development and success of these companies and also for the movement of financial resources in the country.

In developing countries, the scenario of startups is quite different. In Brazil, 50% of them die in the first four years of operation. About 25% receive investments of approximately 6,450 angel investors. It is estimated that there are in the country about 10,000 startups, which moved in 2012 about US \$ 2 billion, representing 0.4% of Brazil's GDP. From the point of financial volume movement of view, the impact of these companies in the economy is still small, however these companies stand out by providing solutions which are not based on high technology, but social impact. As an example the company Easy Taxi, which developed an innovative mobile app for the population to receive taxi services in a secure and extremely fast, with quality of care, minimizing the negative impacts of a network of extremely problematic country transport.

## *2.3. Management of startups*

[4] states that the traditional methods of administration do not apply startups, since these methods are based on estimates that work best in environments static, rather than dynamic environments to which these companies are inserted, with frequent changes and greater risks. The author proposes a simplified model to help young entrepreneurs in the conduct of startups, as shown in Figure 1. For the most base of the triangle, vision, small entrepreneur defines where it wants to go, a North, in order to have a clear idea of a goal greater to be achieved. On the following basis, strategy, includes the company's business model, as entrepreneurs will lead an organization to which it was assigned. The definition of the strategy includes the methods, techniques and tools standards adopted by startups to reach the last stage of the model, the products, which will be launched in the market and also adjusted according to their performance.

The strategy of a startup is an important driver of their actions. The idea is to avoid designing complex, intangible plans without considering the uncertainties and difficulties of startups management, but include in your business model a product plan that is faithfully fulfilled and that every setback is not seen as a failure, but as an opportunity to learn how to get on the established view. It is a hard road in search of success, but in the current conjuntura marketing, failures are extremely important for greatness, so innovation covers not only the final product, but also in how to achieve these goals [4].

In this context, the design management area encourages an inclusive approach, ie, involves people of the company towards the creation of an offer of really considerable value, as it helps the company to structure and design your environment to make it understandable. When it comes to a completely surrounded by uncertainty environment as in the case of a startup, this view that the design allows these small companies to shape their environment, contributing to building a reality and helping in strategic management, results in a collaboration for a better understanding of their complex environment [3].

## **3. Strategic management of innovation and design**

Essentially remain innovative to compete is a strategic attitude and innovation should be seen by young entrepreneurs not like any activity, but as an ongoing process in the long run. [3] states that the design relates to key issues for successful innovation as the understanding of user needs, competitive advantage and synergy between the company's strengths. The strategic approach to design management involves understanding of design as a new paradigm for reaching ideas and methods that can be used to increase management efficiency as a whole.

[3] points out that the design creates value in a company innovation management, as part of improving the quality of new product development process, defining the product strategy and the skills of a project team, is a large company, but also a little.

Market dynamics requires constant change, the competitive advantage of a startup is determined by the strategy adopted to design your success in the future, as well as the principles and practices that will build and strengthen a design-based innovation culture [2]. In this context, it is important to the understanding of a startup management singularities and establish a method focusing on the business model of these companies, so they can develop strategies that allow them to generate a continuous cycle of innovation.

### *3.1. Innovation driven by design (Design driven innovation)*

For companies already are born essentially innovative and technology, startups should not miss this essence. It's a real challenge to break the barriers of inertia imposed by the routine when you have a product established on the market. Managing innovation for customers fall in love, clarify how a company can create and implement innovation strategies that create products and services with completely new meanings, anticipating competition, and become leaders in their market, meet the challenges that design driven innovation is proposed in order to reduce uncertainty about the future of organizations.

Innovation driven by design supports the idea that companies abandon oriented view to the user and seek a broader perspective, the so-called interpreters. Are agents that are close to the companies that share the same interests as, for example, researchers, artists, media, companies in other lines of business, suppliers and others. Companies must value the contact with the performers to exchange information and discuss their views. [5] states that this relationship company / interpreter is essential to providing an understanding of how people give meaning things, since this interaction favors an anticipation of trends, behaviors and contexts of consumers.

The author believes that every product has a meaning and that many companies do not bother to Inova it, but seek to understand the actual meaning people give things. This fact, even differentiates driven innovation design strategy with the conventional strategies, since these provide methods, tools and processes detailed, so they can be purchased and reproduced immediately, but that competitors copying with ease. Already the design driven innovation is connected to a network of interpreters who work together to promote new meanings and attract people's perception, is not a model that can be standardized and followed to the letter, as traditional, but its unique feature is how their interpreters understand, interpret and disseminate the way people give meaning to things. It is a unique way of driving of a strategy to support new products that provide important meanings to consumers and has a high degree of innovation to the market, based on a cooperative network that is attentive to technological, social and cultural world of users [5].

### *3.2. Driven design process as innovation*

The innovation process guided by the design consists of a set of three actions. The first is to listen, which is the company's iteration with their interpreters, in order to have access to knowledge of new meanings. The greatest chances of getting new information and consequently greater competitive advantage when there is a careful choice of his interpreters in several areas where competition is not yet working. These choices can not be random, because leads to impaired quality of the information.

The second action is to interpret. From the moment that the information of the performers are acquired, it is necessary to group them with the company's own ideas, their technologies and resources in order to generate its own proposal, with the company's objective to create a single proposal, or is the development of an innovative significance to a particular product.

The third action is to spread. Because they are unexpected and unknown, radical innovations of meanings need to be arranged to be launched on the market. Because of its high degree of innovation and novelty, the market may not be ready to receive this innovation. Thus, it is necessary to use proactive actions to facilitate understanding, assimilation and adoption of these new meanings. Actions can be inserted into an advertisement, marketing, even through their interpreters, who were part of the first action of the process.

Table 1. Strategy design driven innovation for startups.

	Design steps driven innovation	Goals
Strategy formulation	Listen	<p>1. Collate the social context of the project refers to understand the potential for success of the product / service.</p> <p>2. Identify the interpreters (technology providers, artists, media people, designers, researchers, universities ...)</p> <p>3. Integration of interpreters (formation of a network of relationships, synthesis of interpreters)</p> <p>4. Organize meetings, meetings, workshops to gather interpreters and information about the established context.</p>
Ideation Strategy	Interpret	<p>1. Collate the information found their interpreters and stored as ideas;</p> <p>2. Integration of the ideas of the performers with the company itself;</p> <p>3. Analysis of the needs of the intended users;</p> <p>4. Development of new concepts and meanings.</p> <p>5. Development of the innovation strategy.</p>
Strategy Implementation	Broadcast	<p>1. Prototype Assembly;</p> <p>2. Product development;</p> <p>3. Communication plan for new concepts and meanings that include the spread of new product / service through the social network of interpreters.</p>

### 3.3. Strategic management for innovation of startups through design driven innovation

[3] sets the model for strategic management of design through three stages: strategy formulation, strategy ideation and implementation strategy. These steps in the innovation driven vision of design is proposed in Table 1. The use of driven innovation design process for building and implementing a product strategy or service is to the purpose of the pursuit of innovation must not be restricted to the context of a startup. The proposed goals can be considered steps to be met so that they can capture new meanings that people give to products and services, which is only possible if the company manager can identify the performers and use your information in the construction of an idea innovative.

## 4. Conclusions

Table 1 that emerges in this present article highlights the strategic management for innovation of startups driven by innovation design is at an early stage of evolution, scarcely supported by actual facts and concrete when it comes to its effectiveness. Studies on the design driven innovation as innovation strategy in the business world, specifically in startups evolve slowly. Thus, this article contributed to approach this design method in startups in the sense that they introduce into their strategies of innovation through meanings. Added to this, the article provides a review of recent literature on the phenomenon, essential to the research that is beginning to investigate the occurrence.

Thus, it is necessary to go beyond practices exposed in the article, find new ways through which extend the phenomenon of conceptualization of the universe, beyond the practical application of the proposed model. A first step on this path is on how to target small business owners better understand your organization's external environment for possible interpreters of meaning, so that the market, suppliers, users, universities, researchers, among others, can contribute to research and design a new product or new service. Another important aspect is the transformation of the information of the interpreters really important ideas that can generate innovations and consequently enduring competitive advantage in your market. And last but not least, it is the research to consolidate a strategic management based on design driven innovation intrinsically these organizations.

The practical application of this model is a real opportunity for the maturing of the method for innovation in startups in Brazil, since there is an understanding of the importance of design as a strategic management tool, is not only given the importance of design in the final aesthetic products. From this perspective, it is important to obtain qualitative data, as the next stage of the research, so you can find out how the model can be generalized to startups so that the correct and effective use of these methods / tools always lead to growth and greater interaction of the brand / product to the end user.

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