LOGO

Innovation Strategies Model in the Design Management

Modelo de Estratégias de Inovação em Gestão do Design

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ABSTRACT

Annually, several businesses emerge to compete in a dynamic scenario, which requires new strategies to maintain competitive in their market survival. In this context, seeking a competitive advantage with a focus on innovation becomes an important issue. Design management can contribute to the survival of these companies, but there is no recipe formed or a standard model for how it can be applied, especially when it is about small businesses. The guiding question of the research is what design innovation processes a company can adopt to become competitive? Intending to contribute to this issue, the research relates design with innovative strategies to propose best practices that can improve the competitive performance of small businesses. Through a systematic literature review, following the Visual Method for Systematic Design Review presented by Blum, Merino, and Merino (2016), eight articles from the last fourteen years were selected and further analyzed with proposals for strategies for innovation promoted by design. In the end, based on the analyzed authors, a Modular Beehive Structure for Innovation model is proposed, formed by patterns of knowledge of the selected authors practices that may lead to innovation when combined according to the goals and resources of each company.

KEYWORDS

Innovation. Design Management. Small Companies.

RESUMO

Anualmente, várias empresas emergem para competir em um cenário dinâmico, o que requer novas estratégias para manter a competitividade em sua sobrevivência no mercado. Neste contexto, a busca de uma vantagem competitiva com foco na inovação torna-se uma questão importante. A gestão de projetos pode contribuir para a sobrevivência dessas empresas, mas não existe uma receita formada ou um modelo padrão de como ela pode ser aplicada, especialmente quando se trata de pequenas empresas. A pergunta orientadora da pesquisa é que processos de inovação em design uma empresa pode adotar para se tornar competitiva? Com a intenção de contribuir para esta questão, a pesquisa relaciona o design com estratégias inovadoras para propor melhores práticas que possam melhorar o desempenho competitivo das pequenas empresas. Através de uma revisão sistemática da literatura, seguindo o Método Visual para Revisão Sistemática do Design apresentado

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pela Blum, Merino e Merino (2016), oito artigos dos últimos catorze anos foram selecionados e analisados com propostas de estratégias para inovação promovidas pelo design. No final, com base nos autores analisados, é proposta uma Estrutura Modular de Colméias para Inovação, formada por padrões de conhecimento das práticas dos autores selecionados que podem levar à inovação quando combinados de acordo com os objetivos e recursos de cada empresa.

PALAVRAS-CHAVE

Inovação. Gestão em Design. Pequenas Companhias.

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1 INTRODUCTION

New social values, new consumer practices and the latest technological innovations impact both people's and business's daily lives, imposing dynamics that are not always prepared to absorb them, as Fraser (2007, p.66) says that many companies are slow to respond to these dynamics because such changes challenge organizational cultures to make changes to their business models. This situation requires major efforts, more effectives and simple management strategies to follow the dynamic market movement.

Design strategies are seen as ideal to more realistic and competitive scenarios intending to promote innovation for small businesses (MORONI et al., 2018, p. 472). This is because by expanding the application of design methodologies to the business mindset, companies can open new possibilities for growth and innovative organizational transformation (FRASER, 2007, p.66). Once you understand the importance of innovation for a small business, it is important to investigate what design innovation processes a business can adopt to gain competitive advantage in this scenario.

In order to know the latest processes adopted in design for innovation, the interest of this study, a systematic literature review was conducted to gather knowledge patterns about the current stage of processes promoted by design focusing on innovation. Thus, we used the Visual Method to Systematic Review in Design according to Blum, Merino, and Merino (2016, p.127). There were eight scientific papers analyzed in greater depth, which present design-based innovation processes. These documents confirm the relevance of design as an innovation strategy for a company to gain competitive advantage, and the analysis of research results highlights the strategies that companies consider when it comes to design innovation. It was also found that there are commonalities between the different strategies that can be grouped or adapted according to the reality of each company.

The strategies analyzed presented by the authors are based on some design concepts, like (1) Design-Driven Innovation (DDI); (2) User-Centred Design (UCD); (3) Design-Led Innovation (DLI). These authors use different definitions of what design is, but these definitions are not completely diverging, in fact, may complement each other. DDI understands design as a way of radically innovating the meaning of things (DELL'ERA et al., 2017, p.4), while the UCD sees design as solving people's problems. DLI proves to be a more recent perspective on the implementation of

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Design Thinking. A company needs to be clear about the design processes and their definition, to know which strategy may be adopted to guarantee its survival in the market.

Because Design is an interdisciplinary discipline it can arrange different areas of study such as management. This is possible because of the vision of human-centred design, looking for people real needs open a possibility to promote an innovation (BEST, 2012, p.66). However, design management does not have a unique and clear strategic plan able to implement differentiation by innovation. That said, a further issue arises: What design innovation processes a company can adopt to become competitive? This problem led this research to investigate new ideas on how companies can use design to promote innovation.

2 THEORIC REFERENCIAL

According to Kathryn Best (2012, p.12), the design is a human-centred problem-solving process, practice, or way of thinking, this definition is adopted in this research. Because it is human-centred it can overcome barriers of the traditionally known functions that design can perform, such as print, digital, audiovisual, environment, reaching management as it is also a problem-solving activity (MOZOTA; KLÖPSCH; COSTA, 2011, p.17).

The definition of the concept of design is fundamental to the development of practices and processes that organizations may follow to implement it according to their goals. There are some different definitions attributed to design that influence its role to play within the company about innovation and may even restrict its potential. What demonstrates the importance of clarifying which definition is used in the research (HERNÁNDEZ et al., 2018, p. 254).

Another clarification required is the term “design in innovation management”, which can be confused with the process of “Design-driven Innovation”. In this study, “design in innovation management” better represents the objective of arranging innovation through design strategies. The term “Design-driven Innovation” refers to the process of reframing a product by design, as defined by Roncalio and Kistmann (2014, p.3).

Design Management is a way for Innovation Management to achieve its goal, as it is known that innovation is necessary to respond to new market opportunities and risks. It is not required to invent something non-existent to consider as innovation but might be a novelty in a market or sector. It can occur innovation within three general areas: 1) in setting

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up a business, such as its business model; 2) Can focus on the product or service that the company offers, or; 3) customer experience in their contact with the organization (KEELEY et al., 2013, p. 30-31), that is, within the areas that design management can operate on.

Keeping innovative to compete is a strategic attitude and should be viewed by entrepreneurs not as an occasional activity, but as an ongoing long-term process (MORONI et al., 2018, p. 471). Therefore, design strategies in innovation management can strengthen resource-constrained environments such as those of small businesses.

3 METHODOLOGICAL PROCEDURES

To select and analyze the innovation processes promoted by the design, the technical and scientific procedure of Visual Method for Systematic Review in Design was used because of its rigor and feasibility of application, presenting a step by step based on Data Mining concepts, following the technical instruction of Blum, Merino, and Merino (2016). The steps of the method proposed are five. The first is the Domain Knowledge (i), which some fundamentals informations are decided. Therefore, the Scopus and Web of Science database was established as a place of research for relevance in the area of design and management.

In the Preprocessing step (ii), the research period was the interval from 2005 to 2019 for broader results. The research goal document type was article but was also considered relevant annals, reviews, and editorial materials. The area of interest marked was Applied Social Sciences, Design, Business, and Management.

The descriptors were created based on the keywords: Design Management, Innovation, Small Business, and Competitive Advantage. At the Scopus database, it is possible to mark some specific appointments about the Subject Area. The ones marked were Business, Management, and Accounting Show, Engineering, Computer Science, Social Sciences, Decision Sciences, Arts and Humanities, Environmental Science. At the Web of Science data based the Categories marked were Art, Business, Business Finance, Communication, Computer Science Interdisciplinary Applications, Computer Science Artificial Intelligence, Computer Science Information Systems, Computer Science Theory Methods, Construction Building Technology, Engineering Multidisciplinary, Green Sustainable Science Technology, Manage-

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ment, Materials Science Multidisciplinary, Multidisciplinary Sciences, Operations Research Management Science, Telecommunications.

In Pattern Extraction (iii), boolean operators are formed based on the descriptors. The terms employed were considered similar, even synonyms. These terms used relate design as strategy management, such as Strategic Design, Business Design, and Chief Design Officer. The language of the research was in English by a combination of the descriptors, combining them in groups to reach the research interest, as presented in Chart 1. About the groups, strategies focused on small companies were searched on groups A and B, while the other ones focused on the relation between design and innovation for any company size.

Chart 1: Descriptors organization by groups.

GROUPS	DESCRIPTORS ORGANIZATION
Group A Design management as an innovation tool for small businesses to achieve a competitive advantage.	"Design Management" **OR** "Strategic Design" **OR** "Business Design" **OR** "Chief Design Officer" **AND** Innovation* **AND** "Small Compan*" **AND** "Competitive Advantag*"
Group B Innovation through Design Management in Small Businesses.	"Design Management" **OR** "Strategic Design" **OR** "Business Design" **AND** "Innovation*" **AND** "Small Compan*"
Group C The relationship between Design Management and Innovation.	"Design Management" **OR** "Strategic Design" **OR** "Business Design" **OR** "Chief Design Officer" **AND** "Innovation*"
Group D Design Management as a Strategy for Innovation.	"Design Management" **OR** "Strategic Design" **OR** "Business Design" **OR** "Chief Design Officer" **AND** "Innovation*" **AND** "Strateg*" **OR** "Management Strateg*"
Grupo E Design Management to achieve a competitive advantage through Innovation.	"Design Management" **OR** "Strategic Design" **OR** "Business Design" **AND** "Innovation*" **AND** "Competitive Advantag*"

Source: The authors (2019).

The results of the survey performed on the Scopus basis organization are showed in Table 1. In the first selection, the attention was on the title and its relation to the research objective. The most significant result was from Group C, with 334 data, in which 32 documents related design management to innovation. All the documentation organized was in files separated for the databases name and grouped from A to E (Table 1 and 2).

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Table 1: Documents result from the Scopus database.

Scopus	General Results	Related Docs
Group A	0	0
Group B	1	1
Group C	334	32
Group D	166	1
Group E	25	3

Source: The authors (2019).

The search performed in the Web of Science database had more results than the Scopus database in terms of quantitative results, for example, the Scopus group C obtained 334 records (Table 1), while the same group in the Web of Science had 848 records (Table 2). It is important to note that the papers repeated from the first search database were disregarded in the other one, so the number of related publications from Web of Science was close to Scopus.

In this selection moment, were analyzed the title and keywords of the documents to notice if they had a relation with design management to innovation, if had any doubt the abstract should be readen, only then the paper could be classified as Related.

Table 2: Documents result from the Web of Science database.

Web of Science	General Results	Related Docs
Group A	694	16
Group B	847	1
Group C	848	6
Group D	8058	1
Group E	731	0

Source: The authors (2019).

As the Visual Method for Systematic Review in Design suggests in the Post Processing step (iv) it is recommended to choose documents

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by a classification, according to the researcher's interest. Thus, the data of each database divided into three categories, the Main Focus category being all results that presented processes to achieve innovation through design. The Relevant category classifies documents linked to the connection between innovation and design, design management, competitive advantage. In the General Theme category were classified those documents with concepts related to research interest like management design and innovation concepts but did not present practical processes, as formed in Tables 3 and 4.

Table 3: Research classification results from the Scopus database.

Scopus	General Theme	Relevant	Main Focus
	Present concepts of Design, Innovation and Design Management.	Present Innovation and Design Management relation.	Present innovation processes through Design.
Group A	0	0	0
Group B	0	0	1
Group C	14	15	3
Group D	0	0	1
Group E	2	1	0

Source: The authors (2019).

Table 4: Research classification results from the Web of Science database.

Web of Science	General Theme	Relevant	Main Focus
	Present concepts of Design, Innovation and Design Management.	Present Innovation and Design Management relation.	Present innovation processes through Desig
Group A	9	4	3
Group B	0	1	0
Group C	1	5	0
Group D	0	1	0
Group E	0	0	0

Source: The authors (2019).

The execution of this visual method reduced the number of documents, facilitating the selection and analysis of the articles guiding the research to the Knowledge Utilisation (v) stage, which according to Blum, Merino, and Merino (2016), the selected texts are readen in

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greater depth. In the Scopus, five papers were the main focus of the research, and in the Web of Science three documents fit in the research needs. The consideration of this last step is presented below, in the research results, analyses, and discussion.

4 RESULTS

The literature review identified eight design in innovation management processes that a company can adopt to gain a competitive advantage in different contexts. The selected texts are in data analysis matrix in Chart 2, which the columns are "Source" that is the information about the origin of the studies, "Brief description of the study" and "Innovation process" that describes the steps for implementing each strategy, as well as "Design practices" with the techniques and design actions used in the implementation of the strategies. This data is sufficient for those who want to search for more details. The identification of design practices for each process serves as a comparison to recognize patterns. As an answer to the research question, the selected papers are below, each one with their fundamentals and specific contexts.

Chart 2: Data analysis matrix with texts selected.

Source	Brief Description of the Study	Innovation Process	Design Practices
Bate, J. D.; Johnston , R. E. (2005)	According to the authors, any company can implement this strategy. It searches for innovative opportunities by analyzing the boundaries of a company through three paths: customer value, market dynamics, and business model innovation.	1. Preparation for the goals and roles of the team; 2. Alignment between team members and management on strategy focus; 3. Exploring new ideas and opportunities in three ways: customer value, market, and/or business model. 4. Creating and redefining a portfolio of innovative new business opportunities. 5. Mapping through a roadmap of what can be done in a frontier.	Multidisciplinary team, looking for the state of the art, internal communication, market forecasting, creative environment, customer-centred, seeking new value for the customer, new business model.
Fraser, H. M.A. (2007)	This method consists of "three design gears" that drive business strategy and design: empathy and deep user understanding, concept visualization and multiple prototyping, and strategic business design.	Defining the Foundation: First Gear- deep user study; SecondGear -Ideation and Prototyping Third Gear- Feasibility of the best strategy.	User-centred, ideation, iterativity, knowing the team's mindset, forms an open mind team, encourages creativity, prototyping, design mindset.

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Source	Brief Description of the Study	Innovation Process	Design Practices
Moroni, I.; Arruda, A.; Araújo, K. (2015)	Design-driven Innovation Model for startups. A process that works with network interpreters: people from different areas and outside the company.	**Listen** 1. Understand the potential for success of the product/service; 2. Identify the interpreters (technology providers, artists, media people, designers, researchers, universities); 3. Integration of interpreters (formation of a network of relationships, synthesis of interpreters); 4. Organize meetings, meetings, workshops to gather interpreters and background information; **Interpret** 1. Group the information found in your interpreters and stored as ideas; 2. Integration of performers' ideas with the company itself; 3. Analysis of the needs of the intended users; 4. Development of new concepts and meanings; 5. Development of the innovation strategy; **Spread** 1. Prototype assembly; 2. product development; 3. Communication plan for new concepts and meanings that include the dissemination of new products/ services through the social network of interpreters. Design-driven Innovation Model for startups. A process that works with network interpreters: people from different areas and outside the company.	User-centred, innovation culture, multidisciplinary team, new business model, cooperative network, prototyping.
Dell'Era, C.; Altuna, N.; Magistretti, S.; Verganti, R. (2016)	For companies that want to generate disruptive technological innovation by leveraging the epiphany of technology, that is, finding new ways to leverage existing technologies. To do so, he analyzed four case studies to assemble the three practices presented in the paper.	1. Interpretation of existing technology as an activation platform for new ideas; 2. Building double-sided network; 3. Accessing new knowledge domains.	Supply network, innovation culture, multidisciplinary team, prototyping, employee network.

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Source	Brief Description of the Study	Innovation Process	Design Practices
Wrigley, C. (2017)	For companies wishing to deploy a culture of innovation based on Design-Led Innovation, 20 best practices have been established for this purpose.	1 The DLI Dialog Principle discourages semantics; 2 DLI Culture Principle leads to collaborative change; 3 DLI Fact Principle uncovers latent emotional needs; 4 DLI Relationship Principle de-silos innovation; 5 DLI Possibility Principle provides a platform for radical thinking; 6 DLI Facilitation Principle indicates that tools facilitate the process, not the solution; 7 DLI Results Principle helps set the right targets; 8 DLI Questioning Principle teaches listening is not inaction; 9 DLI Ideals Principle requires a consistent application to lead to best practice; 10 DLI Resistant Principle challenges the most ingrained status quo; 11 DLI Assumption Principle questions the boundary assumptions of Systems Thinking; 12 DLI Action Principle DLI Action Principle crafts the fast prototypes, as failure is a necessary part of the success; 13 DLI 'Why' not 'What' Principle explains that the designs the business model, not the product; 14 DLI Time Principle focuses on top-line growth; 15 DLI Lasting Change Principle is a full-time role; 16 DLI Commitment Principle requires groundwork for buy-in; 17 DLI Value Principle teaches the value of the customer perspective; 18 DLI Conduct Principle operates without company culture bias; 19 DLI Intersection Principle amalgamates to create by seeking out and exposing dynamic tensions; 20 DLI Building Intuition Principle has rules, but they need not be followed.	Human-centred design, cultural transformation, new business model, iterativity, cocreation, team's mindset development, prototyping, technology.
Moroni, I.; Arruda A.; Bezerra P.; Laila, T. (2018)	It is about startups inserted in incubators. The article in the literature review proposes 5 steps for innovation, also presents the current stages of the incubator from which the project analyses.	1. Design for innovation strategies; 2. Design and management of ideas; 3. Design for concept creation; 4. Design and representation of the company; 5. Design as an integrator.	User-centred, cocreation, creative management, post-use customer experience, global resource network, environment mapping.
Turetken , O.; Grefen, P.; Gilsing, R.; Adali, O. E. (2019)	Practical Visual Model for co-creating a new business model by its stakeholder network including the customer.	1. Identify and agree on the jointly created use value and the target customer; 2. The description of the customer experience; 3. Determine the components of value in use (actor value propositions) and associated actors (functions); 4. Determine the costs and benefits for each actor. These may be financial or non-financial in nature; 5. Determine the high level activities that carry out the actor value proposition for each actor.	Customer-centred, cocreation, business model, iterativity, business ecosystem, value network, customer experience.

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Source	Brief Description of the Study	Innovation Process	Design Practices
Gaglione , S.; Gaziulusoy, A. İ. (2019)	Proposed model based on Fraser's 3 gears along with an analysis of interviews with enterprising designers about the practice of setting up a business. Practical Visual Model for co-creating a new business model by its stakeholder network including the customer.	1. Research the limits and possibilities of the market and the user; 2. Business concept; 3. Concept development, tested, validated and launched.	Customer-centred, experimentation, business model, multidisciplinary team, market research, conceptualization, benchmarking, creativity, prototyping, cocreation, user research.

Source: The authors (2019).

The information collected shows that in common Bate and Jhoston (2005), Fraser (2007), Moroni et al. (2018) present ways to develop a new business model with a value proposition for innovation based on customer needs, Turetken et al. (2019) defend and propose the creation of a business model based not only on the consumer but on a network of employees focused on digital innovation. Dell'era et al. (2017) deal with innovation by rediscovering the possibilities of using existing technology, the epiphany of technology. Moroni, Arruda, and Araujo (2015) deal with Design-Driven Innovation and propose three actions for their practice in a startup and Wrigley (2017) part of Design-Led Approach to Innovation (DLI), and propose a set principles and practices to be implemented in the company to develop a culture of innovation through design. Gaglione and Gaziulusoy (2019) proposed a standard model of business development through design.

In general, these studies have positive results in their implementation, however in different scenarios demonstrate the need for practical applications for proper adaptation and consolidation of these processes, as they are investigations that need continuity. Although different, all are based on design as an innovation strategy to achieve a competitive advantage, so it is possible to find in these processes patterns of knowledge of the relation between design to innovation, making it possible to collect common practices in a model that can be adopted by companies seeking to innovate by design.

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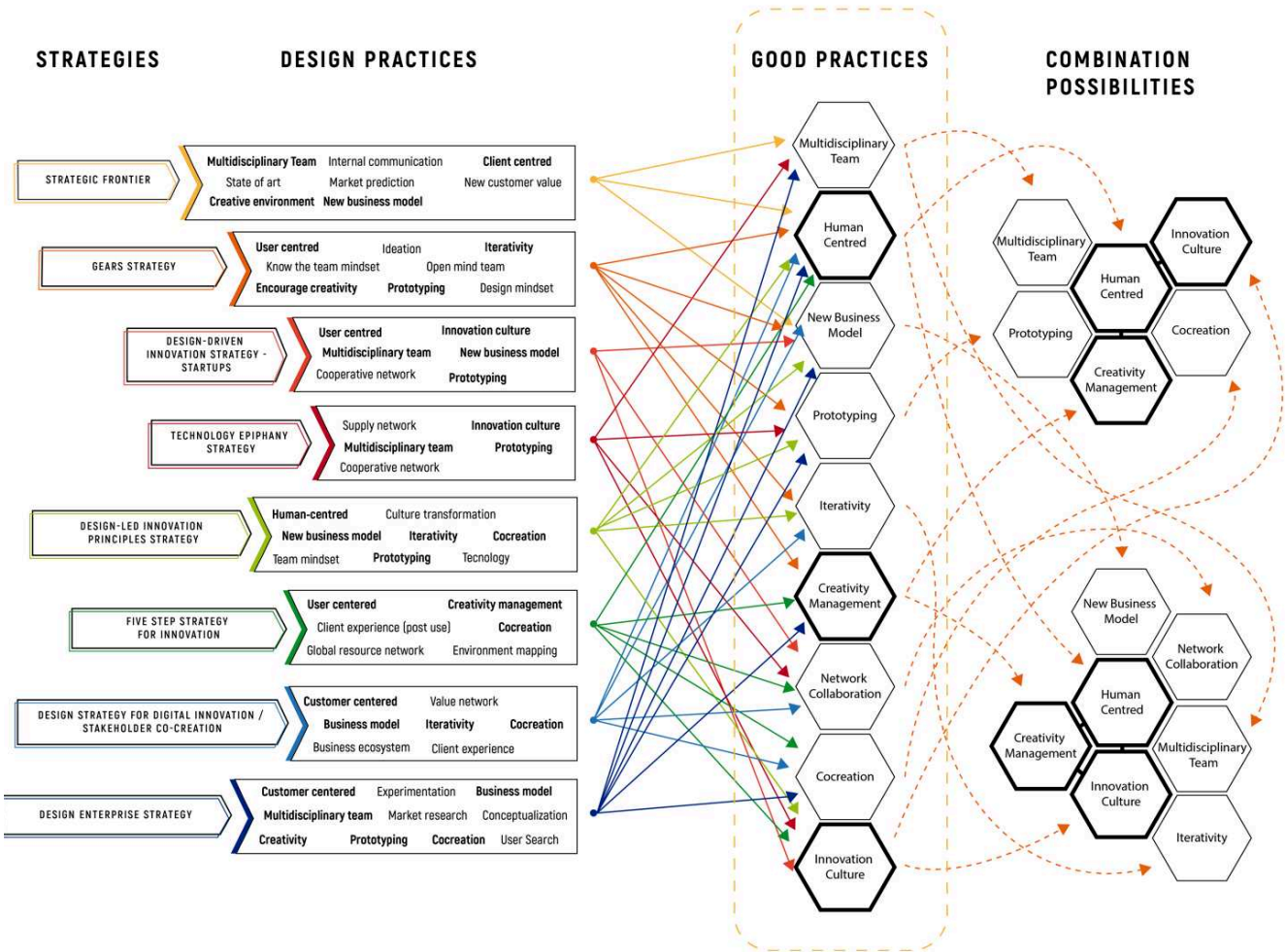
5 ANALSYS

Each study was examined in order to understand its objective and its stages of execution. Each process identified in the systematic research was named as a strategy, giving rise to Figure 1.

Figure 1 - Selection of good practices common to innovation strategies promoted by design.



Source: The authors (2019).

These names classified in Figure 1 are not the same as those defined by the authors examined, but were based on design practices that proved to be memorable to facilitate their identification in this study. In bold are the procedures that have been repeated most. The most recurrent practices in at least three different strategies were highlighted and named Good Practices. Because the strategic innovation practices listed can be adaptable to different company's profiles, it assumed the shape

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of a hexagon to facilitate the connection between the Good Practices and then form a personalized strategy for the organization's profile.

These Good Practices create the research proposal as activities that encourage innovation. The modules highlighted by thicker edges are the Basic Practices that a company must adopt to implement design management strategies to innovate. They are linked to the essence of what design is, so they are represented interconnected, inseparable. These practices are:

1. Innovation Culture is essentially presented by Moroni (2015; 2018) as part of the company's DNA. It is not necessarily about creating an innovative product, but about looking for gaps in your market, with competitors, users, and suppliers that can become opportunities. This culture is built and strengthened through practices and principles based on design with the aim of integrating, bringing coherence among workers, facing an error as a learning experience.

2. Human-centred, it is a practice that considers the real needs of people. One of the highlights of the contribution of design to innovation is precisely its ability to interpret, translate, and negotiate what is required by users in innovative solutions (HERNÁNDEZ et al., 2018). Turetken et al. (2019, p.16) classify its strategy as focusing on the client, while Moroni et al. (2018, p.471) as a focus on the user. It is described, then, focusing on the human being and on their different roles contemplates the client and the user, which depends on the service or product that needs to be generated.

3. Creativity Management seeks to promote the possibility of any employer in the company finding solutions from a new point of view. For a long time design tried to detach itself from creative solutions for fear that its choices are only of personal taste, without scientific criteria, but creativity is present when a person does an activity that can have understanding, skill, fluency, and abilities to obtain a different perspective through the combination of your imagination and pre-existing understanding to achieve a genuinely original vision (ERLHOFF; MARSHALL, 2008). Creativity is the driving force to generate innovation (BATE; JOHNSTON, 2005). Thus, it is justified to be an inseparable part of this triad of central practices, while the others are secondary practices that can be arranged according to the company's needs and capacity.

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It is important to explain that the practices listed are not exclusive knowledge of design actually, they are usually used in other areas. However, due to the nature of the studies that are based on design, the practices presented are linked to it. Of the eight innovation processes selected by the study, six are human-centred. The only processes that do not highlight this attribute are those of Dell'era et al. (2017), the Epiphany of Technology, as well as that of Moroni, Arruda, and Araujo (2015), who start from the concept of design as an attribution of meanings to things and follows the line of research of Design-Led Innovation which there is no need for the interpretation and understanding of the user's relationship with the product or service, according to the authors, but of its environment and context. Questionable factor when you have another perspective about the meaning of design, like the perspective of Best (2012, p.40) for example, centered on the human being.

For Mozota, Klöpsch, and Costa (2011, p.154) the key factor for innovation is to perceive and weigh the demands of the customer in all activities of the company, in the same way, the "Culture of Innovation" is connected to the module "Human-Centred". The action of design in a corporation as a strategic vision is generally aligned with the need for innovation as an integrator of emotional, functional, and social functionalities, so it is a key activity in this proposed scheme (HERNÁNDEZ et al., 2018).

The term "Innovation Culture" was adopted understanding that it is necessary a series of actions in communication, in the environment, in several sectors to promote this innovative education, which according to Moroni, Arruda and Araujo (2015, p.2202) consist of a continuous long-term process that can be implemented through a business model or as suggested by Wrigley (2017, p.2) through tools of Design-Led Innovation such as design thinking, seen as transforming the organizational culture that, in the words of Nerio Alessandri President of Technogym SpA, it is a philosophy of always looking ahead (DELL'ERA et al., 2017, p.11).

Creativity is another key characteristic of design as a strategy, as it is a fundamental requirement for the area, used to deliver the value that people want. The designer's vision needs to be creative in order to give life to a solution from another point of view. A creative environment focused on the future and supported by top management can create new strategic opportunities (BATE; JOHNSTON, 2005, p.13). "Creativity Management" was inserted as a good practice, as the management of actions that promote the possibility for employees to use their understanding, skill, and capacity to find an original perspective for business.

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The practice of "Prototyping" motivates the immediate test and values the team's ideas, in addition to making it possible to quickly signal the occurrence of an error, reducing financial expenses and the waste of energy in project activity. This for a small company speeds up the rush to implement a novelty and helps to avoid excessive spending, essential for its survival. Therefore, it can be a way to promote the environment so that company employees try new ideas, without fear of making mistakes, opening the way for creativity.

The "Cocreation" module promotes interaction between the company's internal and external collaborators with the future user to find a solution for different projects. This participant logistics requires clear communication and a facilitator to guide this process. In the case of a small business can be an obstacle due to limited finances, because it requires a financial investment to keep the client during the preparation of the project.

The "Network Collaboration" adopted here establishes collaboration between companies, entities, stakeholders in the development of a project (DELL'ERA et al., 2017). A small company can benefit from this strategy because it does not need to have all the production processes, but it can develop its product in collaboration with partners that complement its needs.

A "Multidisciplinary Team" supports a creative environment, formed by different understandings, in which together they can generate innovative ideas. A multidisciplinary team can bring an innovative look to the project however, the team must be aligned with the company's goals so that the direction the company wants to follow is not lost (BATE; JOHNSTON, 2005, p.12- 13). Therefore, the highest hierarchy of the company needs to support the multidisciplinary team in the implementation of this practice.

If a company wishes to use the Beehive model to adopt innovative strategies for good design practices, it can analyze the practices and insert them or not in its competitive strategy. In the case of small businesses, it will depend on resources and innovation needs for their survival in the market.

5 DISCUSSION

Because design is multidisciplinary, it proves to be flexible to different situations, but always with common knowledge no matter the

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activity that is creativity, and looking at human experiences of use, factors that collaborate for innovation. What is also perceived is its iterative nature, because of the actions repeated to test ideas, as well as the need for top management's commitment to design, at a strategic level, to achieve better results. With this in mind is presented the Modular Beehive Structure for Innovation model (Figure 2), which allows the visual development and composition of the design actions that will integrate the innovation plan, based on the analysis of the main elements of the company, such as structure, capital, human resources, processes, and technology.

The proposal is to adapt the Good Practices of design management to the organization's capacity to form a visual panel of the practices for innovation to be adopted. By associating the Good Practices of design management with others considered secondary, the model allows the company to not only visualize the information about its current business model but also to evaluate the possible benefits that the changes may bring when implementing it. For the combinations of good innovation practices promoted by design, it is important to evaluate the resources available and company interests to adopt the best strategy.

Figure 2 - Modular Beehive Structure for Innovation.

Source: The authors (2019).

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A company can develop itself through a human-centred strategy, having in its staff a team formed by people from different areas of knowledge who interact to create solutions, or in cocreation, with the participation of the user. Workers from different areas have different perceptions, this factor contributes to a creative environment but needs a facilitator for communication between the team members, in order to unify their vision. Therefore, it is proposed to adhere to prototyping because of the ability to make the collective idea visible, to align, and avoid errors when launching the service or product. This is a strategy with design characteristics that promote interaction between team members and promote innovation.

Strengthening network collaboration would be another module of Good Practices, which combined with the promotion of creativity management with cocreation actions involving customers can generate value and business opportunity. It can also lead to a new business model, innovating the already established. In this case, other phases for implementing the strategy would happen with simultaneous adjustments thinking about the limitations and unforeseen circumstances, as the case may be.

In the proposed Modular Structure, the idea is to facilitate the perception of the skills and possibilities that a company has or intends to develop to achieve a competitive advantage, following innovative companies that, due to their design practices, move the economy. The good strategic design practices contained in the Modular Beehive Structure for Innovation model tend to branch out when adding other secondary ones, arising from new design strategies that change and are born from the dynamics of technology, communication, and social values. To develop this proposal, the next step in the research is validation with practical application in a micro or small company as a case study.

6 CONCLUSION

The difficulties that a small company has to survive in the Brazilian market can be overcome with innovation, as it is a benefit that provides opportunities for success in this environment. With this belief, a Systematic Literature Review was carried out to identify innovation paths or strategies promoted by design that a small company can adopt to obtain a competitive advantage.

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With the research results, a Modular Structure formed by good design practices was proposed to help in the direction and choice of the best innovation strategy, consequently to understand the relationship between design and innovation. The results also contribute to the scientific knowledge that discusses this relationship, as many publications affirm the effectiveness and necessity of design for innovation, however with few explicit descriptions of how this can occur.

After reading the results, it is conclusive that design already has considerable acceptance in the literature as an enhancer in the management of companies of different sizes. For companies inserted in a scarcity environment with less financial and human resources, the innovation promoted by design increases the possibilities of survival in the market by helping to direct their resources to solve a clear need for people.

Despite the consensus in publications to assume the positive effect of design action at a strategic level, still hard to measure its impact in isolation, separating its results from those of other sectors of a company, such as marketing. Because design has a changing concept and its application in the strategy brings subjective effects that can be perceived, but not yet clear measured in isolation.

The strategies listed in Chart 2 and their practices listed in Figures 1 and 2 are not complete, as they were developed based on studies from the last 14 years. Due to its modular structure, it can aggregate other knowledge standards that relate innovation to design based on new strategies, thus being a possible structure to aggregate other good practices. It is also noteworthy that the tools that designers can use to achieve their goals were not considered since the focus was on strategies and practices. This association between design tools and design strategies can also be analyzed individually in later works, as well as a case study to discover in practice this relation of design with innovation if they are following the literature.

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