

## Design Management competencies, process and strategy: A multidimensional approach to a Conceptual Model

### Competências, Processos e Estratégias em Gestão de Design: uma abordagem multidimensional para um modelo conceitual

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#### Abstract

Over the past six decades, the focus shift caused by the evolving role of design in business environment has leveraged design to the rank of strategic factor of competitive advantage. As a theoretical and managerial background, Design Management is responsible for managing the design as part of the company's strategic intention, properly inserting and integrating capabilities, processes and strategies. Although it is already consolidated as knowledge, conceptual frameworks can be continuously developed to better approach the reality of companies. This paper presents a conceptual model of Design Management developed through theoretical background and qualitative research with rounds of in-depth interviews within companies and with experts and designers. The first two stages of interviews with experts and designers allowed the analysis of design use in companies helping to map the processes related to design, identifying their role in the dynamics of companies and how they are managed. The results, together with the theoretical background made possible to outline a conceptual model of Design Management consisting of three dimensions that was, in a final stage of research, reviewed by experts and designers and verified in the practice of companies and in theory.

**Keywords:** conceptual framework; design management; design management theory.

#### Resumo

Nas últimas seis décadas, a mudança de foco causada pela evolução do papel do design no ambiente de negócios avançou-o à posição de fator estratégico para vantagem competitiva. Como fundamento teórico e gerencial, a Gestão de Design é responsável por gerenciar design como parte da intenção estratégica da empresa, inserindo e integrando competências, processos e estratégias apropriadamente. Embora o tema esteja consolidado como conhecimento, modelos conceituais podem ser continuamente desenvolvidos para melhor abordar a realidade das empresas. Este artigo apresenta um modelo conceitual de Gestão de Design desenvolvido através de fundamentos teóricos e de pesquisa qualitativa com rodadas de entrevistas em profundidade em empresas e com especialistas e designers. As primeiras duas etapas de entrevistas com especialistas e designers permitiram a análise do uso do design nas empresas auxiliando a mapear os processos relacionados ao design, identificando seu papel na dinâmica da empresa e sua gestão. Esses resultados, junto com a revisão teórica, tornaram possível delinear um modelo conceitual de Gestão de Design composto por três dimensões, que foi, na etapa final de pesquisa, revisado por especialistas e designers e verificado na prática das empresas e na teoria.

**Palavras-chave:** Modelo conceitual, gestão de design, teoria de gestão de design

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#### Introduction

The evolution of design as a discipline and the efforts to contribute to its advancement in science have been studied and discussed. Much has been written about design in the academic and the non-academic environment, but surprisingly few theoretical models pres-

ent design and its subsequent management, providing the basis for further measures and better understanding of its mechanics.

Design management is understood as the deliberate use of design as a management tool in planning, production and selling of goods, in order to convert the company's strategic goals into products and services that can

differentiate it from its competitors, thus improving the organizational performance, whether it is a process, product, operation, material, customer perception or financial. According to Borja de Mozota (2002), the design process is seen as a mental representation of the new management model and, therefore, mapping the process in which design is inserted, identifying this insertion, integrating and correlating with other business functions are steps from the definition of the Design Management itself. Santos (2000) observes that the absorption of design by corporations requires a flexible management structure, which allows the involvement of design in the process since the beginning, through sales, after sales, recycling and disuse. Previous research presents design management frameworks such as Bruce *et al.* (1999), Cooper *et al.* (2000) and Borja de Mozota (2002, 2003). Those are either focused on SMEs or on part of the process and it should be crucial to identify how Design Management happens inside the companies in a broader way, with emphasis on the design dimensions and its role. In fact, the existing models indicate sequences of steps, but they do not measure the reality of companies, specifically. In addition, the gaps created by the lack of continuity of publications in this issue indicate the need for more focused research on the functionality of existing models as well as its measurements.

This paper presents the development of a design management theoretical model. It fits into a larger research project aiming to develop tools that address, explain and measure how design management works inside companies. As well, it proposes a discussion on the design dimensions for design management, relating and connecting theoretical concepts that can work as a basis for further measures. In this context, the model is created, presented and discussed through a three-step qualitative study.

### Theoretical Foundations for the conceptual model

Traditionally, in the design context, the project is the center of everything, imprisoned in its own technical knowledge. For decades, the design schools around the world worried about form and function as being the center of professional design activities.

Only at the end of World War II, design came to be treated as essential to the success of product development companies (Walsh *et al.*, 1992). This is a natural preoccupa-

tion in which the companies' focus changed from sales to consumption and the concern for the customer strongly emerged (Blackwell *et al.*, 2001). In this period, design was considered to be a function, and a style function emerged in the 1960s and 1970s, as design became a process in the 1980s and 1990s (Borja de Mozota and Kim, 2009). Theories of consumption driven by pleasure and the notion of the importance of an organisation satisfying its market and market orientation, gained strength in the late 1980s and early 1990s (Hirschman and Holbrook, 1982; Kohli and Jaworski, 1990). In the 1990s, design started to be understood as a strategic tool in global competition (Borja de Mozota, 2003; Best, 2006; Beverland and Farrelly, 2007). In the 2000s, design captured attention when it was understood as a key factor for businesses (Lockwood, 2007), with research showing superior performance derived from design processes (Hertenstein and Platt, 1999).

Regardless of the definition adopted and its historical context, three points appear as part of the design concept: the design process, the competency of the designer and the strategy that determines the design usage (Wolff, 2010). Since the origin of the term, its translation into several languages and its use and definitions, the design process and the method used are a fundamental part of design, making the design process a dimension of its own definition. Similarly, design competency and the role of the person who designs are part of what is meant by design. The knowledge, skills and attitudes of this professional have a relevant role in understanding what is (or what is not) design. Joining and helping to relate the dimensions of process and competency, the design strategy issue also constitutes a dimension of the design concept, since it represents the company's intention, the policies involved in the implementation and the use of design. The strategy dimension of the design concept relates to design management and its placement in contemporary companies. Table 1 summarizes the three dimensions, their focus, concepts and reference authors.

Considering process, competency and strategy as dimensions of design together with the concepts provided by the authors listed above, it is understood that design is the planning and projection of goods to be produced in series in order to meet corporate ethics and strategies, consumers' needs and desires by promoting exchanges of value between firms and markets. It is considered that planning and design contemplate:

**Table 1.** The three design dimensions.

Dimensions	Focus	Authors
Process	project methodology; relationship among teams; design insertion and integration.	Bomfim <i>et al.</i> (1977), Bonsiepe (1978), Borja de Mozota (2003), Bürdek (2003), Hein <i>et al.</i> (1984), Kotler and Rath (1984), Löbach (2001), Munari (1998), Redig (1977), Walsh <i>et al.</i> (1992).
Competency	knowledge; skills; attitudes (designer and design team); how to understand and make design.	Borja de Mozota and Kim (2009), Deschamp and Szostak Tapon (2009), Löbach (2001).
Strategy	design use as a strategy and improvement in different levels or perspectives; company's intention and politics regarding design; existing controls or metrics for design.	Best (2006), Beverland and Farrelly (2007), Borja de Mozota (2003), Santos (2000).

(a) the equation of project factors; (b) the exchange of value between firms and markets (both people and corporations); (c) the ethical and sustainable behaviour; (d) the positioning and strategy of companies and (e) the usefulness of products' form.

### Design as a Process

When considering a process as a set of activities performed in a sequence in order to transform tangible and intangible inputs into outputs with satisfactory results for both the consumer and the company (Paim *et al.*, 2009), the basic features of design are considered. Thus, design can be considered a process, especially regarding its methodological characteristics in product development. Design can either be a process itself, or a secondary process in which it provides support for production processes in industries. It can be a punctual process to develop a specific product or an ongoing task of a team integrated to the product development processes in the company.

The issue of the design method or the steps that guide the designer's work raise approaches of authors such as Bomfim *et al.* (1977), Bonsiepe (1978), Kotler and Rath (1984), Hein *et al.* (1984), Munari (1998), Löbach (2001) and Borja de Mozota (2003), who propose steps to be followed in order to obtain the best design solution. In addition to defining the profession, the method helps to integrate design in the context of industrial production that surrounds it and also characterizes it as a process. There are many methodological proposals related to the concept and practice of design that can be understood as generic or specific. Generic proposals relate design to other business processes in a broader and less complex way. Bonfim *et al.* (1977) discuss the inclusion of design in the product lifecycle as part of the investment of a production company, while Kotler and Rath (1984) argue for greater involvement of design in product development in general. Concluding the generic models, there is Hein *et al.* (1984), who present the integration of design and its relationship with marketing and production for an industry best performance. These models suggest design management, viewing design as part of a business strategy.

Alternatively, specific design methods individualize and deepen what happens in the specific design environment, encompassed by a possible model for design management. As examples of specific methods and their impact on the historical contextualization design thought there is the classical approach of Bonsiepe (1978), the more contemporary approach of Löbach (2001), and the design management approach of Borja de Mozota (2003), which integrates the specific and generic view of design as a process. These approaches contextualize the importance of the method on the grounds of design definition.

In a generic context of design processes, the constant environmental changes of the last decades have led companies to better monitor the external environment in which to operate. Concepts such as market orientation (Kohli and Jaworski, 1990; Jaworski and Kholi, 1993) and organizational learning (Argyris, 2000; Garvin, 1993) have become key components for the appraisal of the value creation process for customers and the subsequent increase in performance of the companies. Thus,

the sustainable competitive advantage has become a focus and an aim of companies.

Starting from the strategic point of view and the new product development process as a whole, one can analyze the importance of the designer also in defining the product lifecycle. Thus, understanding design as a process and Design Management necessarily involves attention to the processes and methods of the design team itself, disregarding its integration with the entire company.

### Design as a Competency

The origin of the term and the definition of what design is are closely related to the discussion about the designer's role. This controversy derives, among other things, from the question of who is a designer (e.g., a professional who exercises the profession of design). These doubts are exacerbated by three presented points: (1) the recent presence of design and specific design schools in some countries, (2) the diversity of roles in the process of product development and (3) the possibility of the design role being taken by professionals from other fields that also design, such as architects, engineers and even advertisers.

The goal here is not to preach the exclusivity delegation of the task to a professional designer, discuss the need for deeper undergraduate courses or to increase graduate design courses offered. It is, rather, a discussion to understand the issue of jurisdiction as part of the process and as part of the definition of what design is; so later it will be possible to understand how to manage design and what the role of the professional staff in the strategy and process of the company is.

For Ruas *et al.* (2005), the notion of competency is grounded in three associated capabilities that differ according to the demand of the task: knowledge, skills and attitudes. The ability to combine and mobilize these resources is characterized as competencies, whereas a simple stock of knowledge and skills are closer to the notion of qualification. Thus, competency can be defined as "the effective exercise of capabilities" (Ruas *et al.*, 2005, p. 40).

In a strategic dimension, organizational competency is related to strategic topics of managing a business such as: vision, mission and organizational values. This strategic dimension is less widespread than the individual use of competency, although it is important when design processes are regarded as the core competency as suggested by Prahalad and Hamel (1990). Borja de Mozota and Kim (2009) address the issue based on the need to understand design as an intangible human asset and suggest a resource-based approach and an intangible asset advantage as reported by Prahalad and Hamel in the 1990s. In this understanding, the use of design as the strategic choice of every business depends on using design as a competitive advantage or as a core competency.

Beyond the role of the designer, or the expertise of this person, DeChamp and Szostak Tapon (2009) discuss the factors that influence the competency of the manager in relation to his understanding of and willingness to use design. According to the authors, the managers who had previous positive experiences in arts and cultural education legitimize the design and assess the best use of this knowledge.

The advantages from the perspective of design as a core competency are considered by companies and emphasized by theory. However, its implementation is risky, since the return on investment does not come exclusively from sales; rather, from value creation, the company structure and the consequent customer value perception over time. The chances of success by adopting a long-term strategy, as the understanding of design as a core competency are higher, especially considering the tumultuous business environment, leading to the use of design as a strategy and to better Design Management.

### Design as Strategy

The issue of seeing design as a strategy or strategies for design begins with the translation of the term (to languages other than English) and its use. There is a theoretical consensus on the use of the term as a project and not as design as well as the need to equate multiple factors, define the activity and its importance. To Borja de Mozota (2003, p. 2), the equation "design = intention + drawing" clarifies the point that design always presupposes an intention, plan, or objective" and must be inserted into an appropriate strategic perspective to the company's competitive environment.

In strategy, differentiation is required for survival among competitors. For Porter (1996), the essence of strategy is to perform functions and activities in a distinctive way. Competitive strategy means to be different, to deliberately choose a different set of activities to deliver a single set of values to the customer. This even includes

considering whom not to serve, what not to do and which paths not to follow.

In search of the proposed differentiation and the competitive advantage (Ghemawat, 1986) by the strategy, many companies decide to invest in the development of new products processes. Perceived by the customer, the product, when altered, generates immediate reactions that can be easily controllable by the company, especially when compared to other differentiation strategies. In pursuit of this differentiation, the design is considered as the business performance factor. The incorporation of design in the business environment and its role in strategy go beyond the definition of the term and the profession; it necessarily goes through design management and its theories. As design as strategy evolves within a company, it can acquire a status of design led company (Beverland and Farrelly, 2007) where design fuses the culture of the whole company and not just a department. It can be perceived and measured. Together, the three dimensions allow a larger notion of design complexity. Figure 1 presents the perspectives of each dimension as the basis of the model being developed.

### Methodological Procedures

This study has an exploratory and qualitative nature (Malhotra, 2001). It was developed in three stages that sought to base, develop and discuss a theoretical model of design with a view to Design Management.

The first phase of this study established the model foundation in terms of both theory and market. The the-

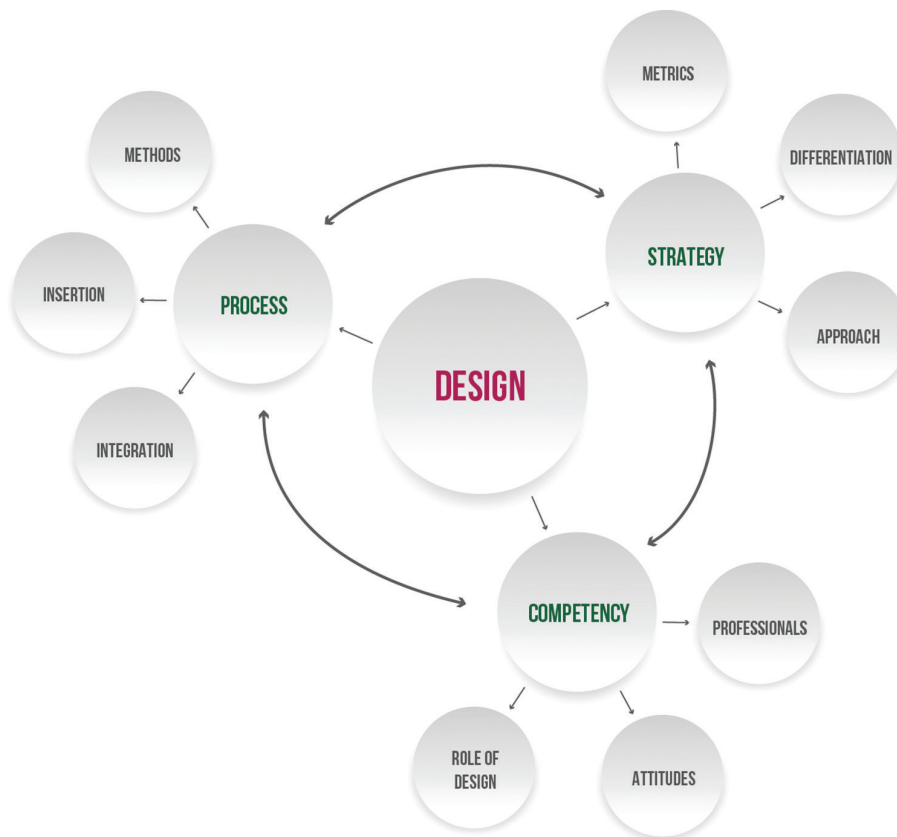
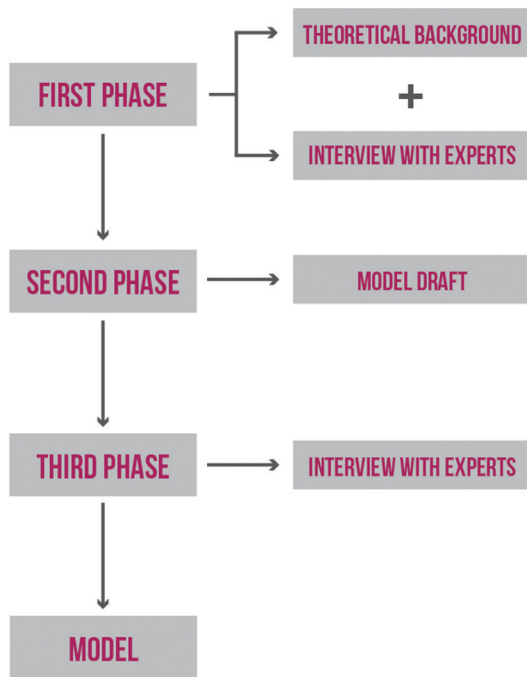


Figure 1. Design as a process, competency and strategy.



**Figure 2.** Research design.

oretical bases, presented in Figure 2, were accompanied by the perspective of experienced design professionals. In-depth interviews were conducted with six design experts: four independent designers and two designers from large companies. Developed in Brazil, the research sample was by convenience and judgment (Malhotra, 2001). All of the respondents developed globally-known products and three of them have been working in the area for over 40 years. The two designers were chosen for developing their work in large product producing companies, with successful sales in different countries. This choice sought to break away from exclusively Brazilian perspectives, working with the common experiences in world markets.

In the second stage of this research, the theoretical model was designed and explained so that in the third (and last) stage it could be subjected to a new assessment by two of the design experts interviewed in the first stage and also by four academics. The two experts chosen were those with the highest performance in the international market with numerous patents recognized in their names, in addition to having worked for several multinationals in more than 40 years of experience.

The market knowledge together with the industry experience, allied with varied perspectives allowed us to verify the model and its ability to reflect the reality of industries. In the third phase of the study, four professors (three Brazilians and one European) were interviewed in order to discuss the theoretical knowledge implied in the model. The Brazilian professors are all PhDs in Design and belong to Brazilian research groups, all of which have a large number of publications in the area, both national and international, according to Wolff *et al.* (2010). The European professor is a PhD in Design Management who is recognized and referred to as the most significant academic in the area. Also, the market experts interviewed in

the first stage were contacted again and the conceptual model was presented to them.

The data obtained through these interviews were important for the refinement of the model in the validation process. At all phases content analysis was conducted (Bardin, 2006) according to the reviews of Flick (2009) on the regular collection and data processing to generate a valid and reliable qualitative research.

## Development of the conceptual model in design management

### First stage: Combining theory and market reality

A broad appreciation of literature, summarized earlier in this article, is the basis for the construction of a three-dimensional design concept in which processes, competencies and strategies modulate to meet the most diverse projects. The theoretical content of the three dimensions seems clear since they each have their own definition, even coming from other sciences. To understand the reality of these dimensions in the design environment, the first stage of this research was conducted. The environment was the Brazilian market, and the interviews with the six professionals were conducted in southern Brazil. Still, this research does not aim to develop a Brazilian model, but rather a broad discussion that may later be applied to many diverse realities.

The analysis of these interviews showed the perceptions of these professionals regarding design and its management. It began by defining design, followed by the role of design in Brazilian companies, its advantages and disadvantages, and respondents evaluated the aspects of the design reality of the day-to-day business, signalling how the process works and the roles and responsibilities of professionals. The interviewees stressed the advantages of design, particularly the importance of its conduction both by companies and by professionals.

It was evident that there are two key success factors in the relationship between the designer and the company itself, as mentioned by the professionals interviewed: trust and transparency. Trust is established when there is transparency between both parties; the company presents its reality, while the professional contributes with the skills related to the project to be developed. Regarding the company's transparency, respondents agree that the business processes must be aligned before beginning the design process and product development in search of success. In this context, the company with capabilities and well mapped administrative parameters is able to properly evaluate its need for innovation and for the use of design, its reality to receive and process design, as well as the gains resulting from this, highlighting the strategic nature of design. Moreover, the company is able to provide the designer with more accurate information for the development of the project.

In micro and small companies, according to the respondents' opinions, an effective dimensioning of these capabilities is critical, while, in larger industries, it is not. Although this is not the main issue, it is also an important factor for the success of the project. Respondents also



mentioned that the company's attitude and the way it looks to its market usually results in successful projects.

However, the interviews with the experts showed that an unprepared manager can explain the low use of design in some companies. It is also clear that in addition to the "look at the market", there are other success factors that were highlighted in the analysis of these interviews, such as strong administrative controls and production. Despite experiencing different realities, small, medium and large companies might offer barriers to the implementation of design process as much as enjoy the benefits of its use.

Table 2 summarizes the success factors, the barriers and the design benefits listed by respondents on the first research step, aligned with previous research on the topic (*reference suppressed to avoid identification*). The success factors are linked to issues of process like management controls and information available for projects while barriers may signal factors linked to competencies in design, such as staff, design capabilities and specific knowledge. The advantages of design refer to the strategy and the use of design as a strategy to increase sales, the performance and the impact on the consumer.

The participation of independent designers together with the designers from large companies was important, since the interviewees showed their experience with sequential designs in the same environment, for the same client. Respondents stated their views based on three main issues: (a) how to design, (b) processes and teams and (c) the understanding of design and design management. One may observe in both surveyed companies completely different realities, with different dimensions and structures. The first company, a very large business, with extensive multidisciplinary staff, works with product design. The qualification of staff is considered highly important and the department head meets with the company's board, featuring the department participation in the decisions of the company's strategy. The processes are well defined and documented.

The second company is considered small, with only one manufacturing engineer. There is not one designer with former design training on the team and many projects are created by the company's board and are made possible by the engineer interviewed for this research, who plays the role of designer. The processes are not systematized through design methodologies and are rarely documented. The consideration of the design as a strategic factor is reported by the respondent as the driving force of the company that has won numerous international awards such as If.

From these interviews, it can be seen that in these companies, the required professional skills are distinct; the design processes follow different paths, more structured in the large company and rather diffuse in the small one. The board's conception regarding the strategy and the use of design are converging and the market outcomes, in different proportions, are potentially the same.

Divergences and convergences reported show that even with different methods and intentions, it is common for firms to show the existence of those three dimensions – process, competency and strategy – as well as the inclusion of design and its management characterized by its approach, integration and intentions of companies in the use of design. What is different among them is the strength of each dimension's characteristic, how the integration is made and the company's maturity in relation to the design and Design Management.

One of the goals of the interviews was to enlist the experience of designers as assessors of the design situation in their companies. Through their perception it was possible to incorporate information about the design process in the industry and its management and operational facets, spotting the differences between business, its steps and identifying critical points in the process. Regarding the theoretical foundations, data collected allowed to construct the first draft of the model (Figure 3).

Finally, the analysis of the interviews with the six designers, together with the theoretical foundation, offered three key points regarding the design and management of design: (1) the method used by the design team and how it fits in the company's process as a whole; (2) the competencies assembled from the staff involved in this process; and (3) the strategy chosen by the company to position itself in the market and the strategic use of the design. These three dimensions are presented in varying ways, depending on the business structure and the perception of the people who are part of them.

## Second stage: Model design

From the rough model, one issue was observed by the authors: it was flat. And design inside companies is never single dimensioned. Teams, policies, managers, technology and many other factors modulate structures and perceptions. Considering this, the conceptual model (Figure 4) was developed from the literature review, data analysis and the observation of the design reality in businesses. It is the idealization of how design is de-

**Table 2.** Success factors, barriers and advantages of a Design process.

Success factors	Project barriers	Design advantages
Administrative control	Systematic use of copies	Improvement in production
Information available	The Board's reluctance in accepting the project	Increase in sales
Well assessed productive capacity	Staff that do not collaborate	Increase in performance
Corporate vision	Lack of design knowledge	Impact on the consumer branding

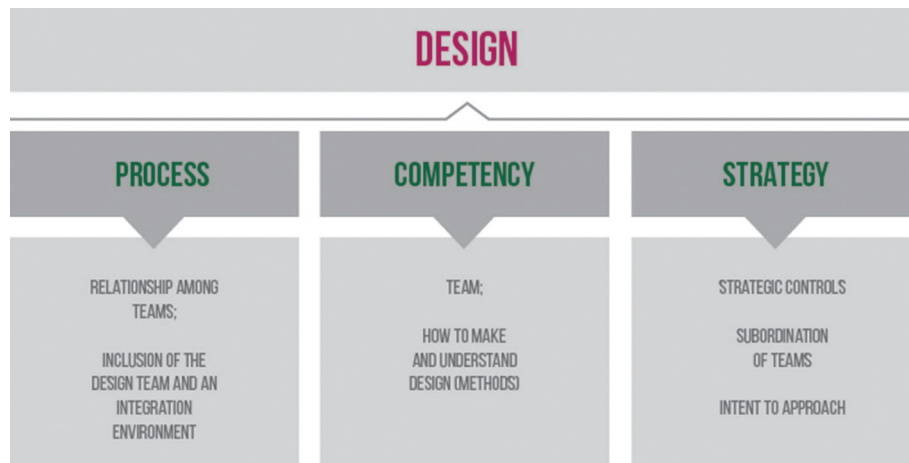


Figure 3. Theoretical Model, first draft.

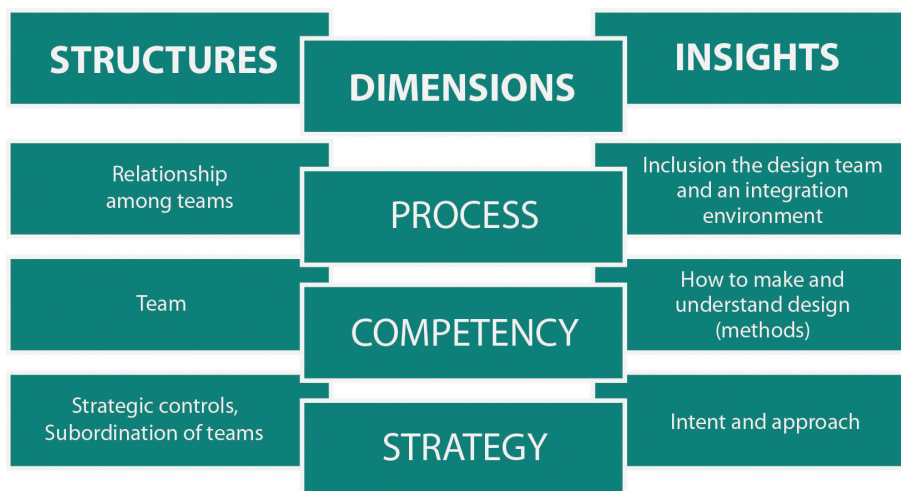


Figure 4. Design management conceptual model.

financed and how the Design Management can be used in companies.

The core of this conceptual model consists of three design dimensions: process, competency and strategy, reflecting the design concept and the designers' reality in the business, which is important for an assessment focusing on Design Management. The three dimensions are also supported by the Balanced Score Card (Kaplan and Norton, 1996), which reaffirms the managerial characteristic of the theoretical model as the basis of an assessment tool for companies.

The three main dimensions of the model are included in two facets: their structures and their understandings, both of which are part of the assessment of each dimension. While the structures represent the goal, the understandings reflect the perception of the dimensions.

"Structures" are the real issues related to each of the dimensions of design as management. Thus, the process dimension is considered as the infrastructure of the company, the relationship among the teams involved in the project and the design process itself, with its steps and interferences of the parties involved. In the competency dimension, structure means the design team itself, how it is composed, what kind of academic background

the professionals have, and what their skills, knowledge and attitudes are. For the strategy dimension, the structure concerns the strategic design management controls available and used by companies, as well as representing the subordination between the teams mentioned in the expertise and processes.

In contrast to the objective of the structures, there is a subjective side of the dimensions, which are the understandings of the people involved with their own reality. In the process, dimension is where lies the inclusion of design teams in the business environment, while the competency dimension refers to the teams' knowledge and understanding of how to design (with or without a method). The strategy dimension is related to the intention of the company to design, its design policies and its approach to the design issues addressed. The existence of this facet of understandings in this theoretical model, beyond structures facet is understandable by nature, justified by the importance of subjective measures in constructs and dimensions. Measures already considered substantial, as the construct of market orientation in business administration, among others, always contemplate the behaviour of those involved in the procedures leading to its operationalization. Without people, there is no business, there is no design, no measures

and models of what the Design Management in companies would be. Thus, this perspective is important in this model.

In the analysis of the theoretical model as a whole it can also relate the two facets of the dimensions to the image and positioning, which are marketing concepts that reflect both sides of the communication of a company with the market: the desired positioning for the company and the image perceived by the consumer. In general, the theory of Ries and Trout (2001) indicates that if these two concepts are aligned the company is well positioned, otherwise, there is noise in its strategy and consumers probably will not understand its proposal. This analogy can be made with both facets of the model, because they may also mean what the company intends (structure), and what their staff perceives (understanding).

Similarly, Nonaka and Takeuchi's (1997) concepts of tacit and explicit, also recognized in the designer role by Walsh *et al.* (1992), translate the understanding and the structures facets, respectively. Especially when considering that design has a strong learning characteristic and, consequently, knowledge to be managed, in its concept and in its central involvement in the processes of product development. In line with this proposition, Design Management processes can be considered a revolving spiral from tacit to explicit, as proposed by the authors in order to grow and set knowledge.

Thus, the design management theoretical model allows one to observe the three dimensions that can manage in terms of design from both sides of these dimensions. It also means the structure is inter-related, allowing the facets and dimensions to influence each other in a dynamic movement and the closest possible of the theory and the managerial reality.

### Third stage: review and model discussion

Seeking to assess the validity of the conceptual model a new research step was developed, conducting interviews with the Design professors. While the interviews with designers and market experts from the first research phase were helpful to equalize the model in a non-academic context, interviews with specialist professors, precisely because of their theoretical expertise, helped to evaluate the theoretical framework that supports the model. As a sample for this stage, these professors were chosen by judgment and convenience. Three Brazilian experts in the field, with international publications, and one European recognized for her significant contribution to design management collaborated with this research.

The first issue addressed in these interviews referred to the theoretical structure underlying the conceptual model of the study. This was explained to the respondents and their perceptions were recorded, as well as their opinion on its applicability, advantages and disadvantages.

Respondents understood the structure as interesting, productive and relevant to the reality of companies, even if sometimes a more specific approach is needed. They believe that the conceptual model created includes the definitions discussed in Design Management and this can assist companies to review and reflect on points that are not treated, for one reason or another. Especially on topics that generate controversy or may affect the relationship between those involved.

The respondents did not see any possible disadvantages of the conceptual model. The only issue would be a possible difficulty in recognizing design as something important for the companies, which is not always the reality. About this issue, respondents believe that this may or may not happen and that in these situations it would be interesting to reconfigure the approach or at least see if there is a consensus among people about what is being discussed.

Theoretical models in general, as commented by one respondent, represent a reduction of reality that helps to analyze a situation. It is important to highlight that it is not the reality, so the researcher needs to assume all the limitations of its condition. In this regard, he sees no disadvantages in the model presented, aside from the fact that it is just a conceptual model.

The characteristic of exposing two sides of the same situation, the understandings and structures are highlighted as very interesting by respondents, seen as advantages of the conceptual model proposed. About the three dimensions, one respondent mentioned that these also support the logic of the Balanced Score Card and not only the definitions of design. For her, the three dimensions are rather part of the definition of design and its understanding as management or administration. One of the professors observed that, by presenting both sides of a design situation, the explicit, formal and even prescribed and tacit understanding of the involved conceptual model gets more interesting, with the advantage of identifying the two large dimensions that things can have and possibly how well placed the possible interactions between the parties are. One respondent pointed out that the ability to compare what is real with what is perceived and, consequently, compose the proposed model to its reality is perfect to visualize what actually happens in companies.

The fact that the model is not tight and allows several evaluations, considering changes and allowing to follow them over time, is also highlighted by respondents. The layers allow one to observe the interactions and effects that one dimension can have in another, or what the change in a dimension or variable may result in others, and this seemed positive to the respondents. Aside from this characteristic, it was highlighted that it can make two types of analysis with the same structure: an internal, self-knowledge of the company comparing its own processes over the years, and an external, which would compare companies within these dimensions.

When asked about the perspective of 'structures' and 'understandings' of the theoretical model, respondents said that it is right, feasible and interesting, so certainly the discussion proposed by the model at this point, if reflected over businesses, will generate a discussion leading the manager and the designer to reflect on their positions and attitudes. The professors think this must be productive for companies, relevant, and informative in order to cope with the exposure and manifestation of what is never discussed within companies, almost like a pedagogical process.

The market experts interviewed in the first stage were contacted again and the conceptual model was presented to them. They said it is very interesting and relevant to companies' current logic. One respondent commented on the "the table rose", referring to the largest number of fac-



ets that a design project currently has. He believes that in the proposed structure “the gears are all there”. It is also very important for the design to hear salesmen comments, which is one way to be attentive to market movements.

Throughout the interview for review and validation, it was requested to the respondent to comment on the weaknesses of the structure. At this point, one respondent suggested that in order to avoid the repetition of the expression strategy in two different moments, the expression ‘policies regarding design’ may be more appropriate. He thinks that the understandings, the issue of subordination goes far beyond what is written in the company’s positions and salaries, because things do not always work as desired and it would be interesting to analyze the understandings about it. One suggests, on the structure topic, to mention the physical space of the process, because this is very important for the team work. Finally, it is important to mention that the perceptions collected in the first round of interviews matured after all the interviews were analyzed, satisfying the notion of saturation content as essential to the validity of a qualitative research study.

### Final considerations

The transposition of an initial image, reflection of the theoretical search related to the practice on a drawn model, is a challenge even for those belonging to design and project areas. Simplifying and summarizing, two familiar concepts to designers become theoretical responsibility. Models, by their nature, are representations of reality, often restricted to themselves, and this is probably the biggest limitation of this study.

As a contribution, the construction of the model presented in this paper aimed to organize and systematize the ideas arising from the design concept and its three dimensions to the reality of businesses and design management. It is supposed to enable and encourage discussions about the integration of design and design management, generating further new insights.

Finally, it is pertinent to mention that the availability of the company’s chief manager in creating opportunities for design is probably the most critical success factor for Design Management. At the same level, and as a direct consequence, the organizational culture can be crucial when it comes to design and Design Management, since it is essential for both structures offered as to the perceptions of people involved. Future researches are being developed in order to further explore the design management insertion on companies as well as find metrics to measure its impacts.

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