

DESIGN, THE LANGUAGE OF INNOVATION: A REVIEW ON INNOVATIVE BOOK DESIGN

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Abstract. A substantial corpus of study has been conducted to investigate the several ways in which design may contribute to the success of a company. For instance, in order to support and leverage their attempts to innovate, organizations often look to design for assistance and support when they are attempting to develop new goods, services, processes, models, and strategies. But to what extent do academics agree on how the link between design and innovation should be defined? Is there any way to explain what the relationship between the two is supposed to be? In this essay, we analyze whether the design literature that has been produced over the last thirty years has an answer to these issues. Specifically, we look at the design literature that has been published in the United Kingdom. We organize our findings into clusters that describe the key roles that design activity plays in the innovation process, how designers personally play a part, and the internal and external factors that contribute to design/innovation associations. These clusters are organized according to the following: We also offer the idea that design language, whether it is visual, methodological, or procedural, has become not just an organizational principle that supports creative endeavors, but it has also become the language of innovation itself. This is something that we think is important to recognize.

Keywords: Design Innovation · Design studies · Roles of design

1 Introduction

The need of excellent design and talented designers has been hammered home to the business world for decades, or in the case of the United Kingdom, since 1915, when the Design Industries Association was established. Numerous academics have looked into the role that design and designers play in the development of new products, services, and values, as well as in the overall performance of businesses, and they have acknowledged their findings. Innovation, which may be both a process and a result, has recently gained even more widespread recognition as a component that contributes to the continuous success of businesses. It has been the focus of a number of different research studies, and an increasing number of these studies are paying special attention to the relationship that exists between design, innovation, and the success of businesses. Researchers that study innovation have a habit of concentrating their efforts on certain fields, such as public policy or financial performance, or on certain distinct forms of innovation, such as radical, design-driven, or technical innovation. However, writers seldom specify how design particularly contributes to innovation, if they even address the question of whether or not the link between the two can be accurately characterized at all. In this article, we analyze whether the literature on design studies has solutions to such issues. Specifically, we look at: Because the terms "design" and "innovation" are thrown about so carelessly in the research that has been done on this topic, the work at hand is not without its obstacles. We undertook a review of the relationship between design and innovation as it has been reported in design studies literature over the course of the past thirty years in order to build a comprehensive yet focused understanding of the contribution and value design can create for innovation in business. Our goal was to build such an understanding as quickly as possible. Studies focusing on the roles played by design in the innovation process and the results it produces, as well as studies focusing on the factors contributing to notions of the link between design and innovation in general, are included in our review. Our review also includes research examining the relationship between design, innovation, and the success of businesses.

2 Roles of design in innovation

In the literature on design studies, neither the roles design activity plays in innovation nor the manner in which that activity contributes to the success of innovative goods and services are explained in a clear and specific manner. A well-known definition of design by Herbert Simon²⁸ describes it as the act of transforming current conditions into desired ones. The concept of design, on the other hand, may refer to a wide variety of objects. In most cases, it refers to the form or shape that an item has. The specific instruments, approaches, and strategies

that designers use in order to develop these forms—frequently in conjunction with customers and employers—also fall under the general category of design. Design is a term that is sometimes used to refer to the process of working together with customers, consumers, and many other stakeholders. Of course, design is also a subject of study and an area in which people engage in professional activity. The essence of what design truly is and what it is doing alters and changes as we go from more concrete conceptions to more abstract ones. Because of this, it is simpler to use the overarching word "design" to refer to all of the aforementioned aspects (and more). However, the haziness of the term "design" is really a contributing factor to the difficulty in determining the part that it plays in the process of innovation. However, there are very few specific explanations or measurable studies of how design truly contributes to an effective innovation process, despite the fact that several texts make assertions that design is an essential part of an effective innovation process. "Design has been badly theorized, explored, and taught by innovation studies," as stated by Mike Hobday, Anne Boddington, and Andrew Grantham. As a direct consequence of this, the social sciences in general and innovation studies in particular have a highly inadequate understanding of design as a creative economic activity at the business, industry, and larger economic levels.

3 Design to differentiate

There is a school of thought among academics that proposes the nature of innovation changes during the course of the lifespan of a product or sector. According to this interpretation of the term, the beginning of the product lifecycle is characterized by a fluid period during which a wide number of product configurations or design ideas may arise. Companies could compete with one another to produce the most successful design, or they might seek to keep their designs flexible so they can more easily replicate those of their rivals. The product lifecycle evolves into a phase that is more focused after the emergence of a dominant design. The conventional course of action for businesses during this phase is to redirect their expenditures toward incremental product improvements and to put a greater focus on process innovation in order to bring down costs. These phases are most closely associated with product development; however, they are equally relevant to the development of services and industries. Vivien Walsh believes that design has the potential to significantly contribute to breakthroughs occurring in any stage. Throughout the fluid phase, the primary considerations are on technology and usefulness, both of which fall within the purview of engineering design.

Micki Eisenman believes that design has the potential to function as a communication channel, so facilitating the advancement of technical difference through aesthetic change. In the initial phases of innovation, the objective that design serves are to explain new technology to customers and to convince them to accept the product and expand its possible uses. Additionally, design works to encourage users to extend the potential uses of the product. In subsequent phases, manufacturing efficiencies are the focus of innovation efforts; yet, design "has the least relevance in terms of organizational procedures," as Eisenman points out. In later phases, when product demand is falling (for example, because adoption has reached saturation), design may be used to explain modest incremental advances to consumers and encourage sales. This is particularly useful in situations when adoption has reached saturation. Modern designs have the ability to conceal "the lack of any major technical progress" and stimulate the replacement of older models with more up-to-date versions. According to Eisenman, businesses are able to accomplish this by promoting the concept of technological advancement and "promoting various second-order meanings that extend the original functionality of the technology." This gives customers the opportunity "to express aspects of their identities via the acts of consumption."

The use of the visual language and communication that the activity and practice of design gives to decision-making circumstances is responsible for a significant portion of the distinction that has been detailed in this article. One may argue that the development of this visual language into a language that can be utilized for innovation is a natural progression of design practice.

4 Design to transform ideas into concepts

The act of designing is often seen as a type of metamorphosis. Some people will see this as the process of converting thoughts into conceptions. "The process of making deliberate decisions that leads to the transformation of information (an idea) into some kind of consequence, which may be concrete (a product) or intangible" (a service). According to Thomas Lockwood, design is a resource that enables businesses and other organizations to make the creative ideation process more tangible. Others believe that the ever-evolving medium of design practice is an essential component in the process of technological progress. Design "is one of the key mechanisms through which new technology is transported out of the R&D lab and into the market in the form of innovative and useable goods," as stated by Robert Whitman Veryzer, Stefan Habsburg, and Robert Veryzer. They use the success of the innovations that are built into Apple products as an example of the success that can be achieved through the use of a "systems-inspired design approach." This design approach manifests itself in the form of

"intuitive operations, user-friendly graphical interfaces, and the ease with which components can be put together." Design methods, according to Ying Liu, David Summers, and Bill Hill, have the capability to translate creative input into meaningful disruptive breakthroughs. According to the Design Council of the United Kingdom, innovation is defined as the procedure of transforming "ideas into value," while design is described as "the relationship between creativity and innovation." Key contributions that design practice makes to the process of innovation include giving concrete shape to abstract ideas, prototyping disruptive notions, and imagining new ways of doing things. More than only the product creation process benefits from the framework that these kinds of design techniques give. Design languages help businesses to translate innovative, emergent ideas into feasible streams of development. Design languages encompass not just ideation and visualization tools and methodologies, but also design process language. The language of design serves as a framework for the process of innovation; hence, the language of design itself evolves into the language of innovation itself.

5 The designer's contribution to innovation

Even though the vast majority of the materials that we looked into dealt with design as a field of study, we discovered that many writers concentrated particularly on designers as a group of professionals. These writers came to the conclusion that the contributions made by designers to innovation are related to the function that design activity performs and emphasize the abilities that are used in practice by designers. According to the research of one academic, the professional talents of a creative designer are exactly the qualities that are required for someone to be an effective innovator. Von Stamm identifies the characteristics of designers as creative professionals as a willingness to take risks, an acceptance of high levels of ambiguity and uncertainty, thinking outside the box, a passion to drive the idea through to conclusions, and the ability to inspire passion in others. In addition to the ability to produce novel solutions, these characteristics include the ability to produce novel solutions. She contends that designers are uniquely qualified to operate in the context of innovation due to the fact that they possess the appropriate education, abilities, and mentality for the job. They are able to think in a variety of different ways and are also perceptive, inventive, self-assured, and persistent. In addition to this, Weiss100 emphasizes the value of their trained, iterative approach to problem-solving as an asset to the whole innovation process. The use of effective visual and communication tools by designers is discussed by Ward and her colleagues. According to them, this helps reduce misunderstandings, gives stakeholders a clear understanding of the business and its position in relation to its customers and other actors, and ultimately improves the decision-making process regarding innovation.

6 Factors impacting the relationship between design and innovation

In addition to the potential roles that design may play in innovation and the contributions that designers make to the processes and results of innovation, several of the research that were included in our evaluation focused on the nature of the link between design and innovation. It would seem that both internal and external influences have the potential to influence the link that exists between design and innovation. It has come to our attention that a vanishingly tiny number of articles identified these elements.

6.1 Internal mediating factor

A very small set of writers asserts that integrating design approaches across a whole business encourages creativity, particularly when this integration reveals itself in the culture of the firm. However, Alessandro Deserti and Francesca Rizzo criticize the method in which firms have embraced design thinking as a management technique in their organizations. They state that "to become effective in enterprise, design must become a part of the culture, and companies must develop their own unique design culture by integrating design through bottom-up processes that require negotiation and alignment and are continually performed in the never-ending activity of innovation." They go on to say that "to become effective in enterprise, design must become a part of the culture," and that "to become effective in enterprise, design must become a part of the According to the findings of a research compiled by the Design Council, the level of commitment shown by senior management has a significant impact on the value that design can provide for innovation. In a similar vein, Orietta Marsili and Ammon Salter write in their article that "assistance for the development of design competencies may have substantial consequences for an innovation system in general." It would seem that the quality of the link between design and innovation is, to some extent, a consequence of the degree to which design work meshes effectively with other activities that take place inside the organization. According to Lisbeth Holm and Ulla Johansson, the processes of innovation and the results of such innovations are dependent on the interactions that are built between design and engineering, for example, or between design and marketing. Several writers explore the connection between design and marketing, as well as the consequences this connection has for innovation. User insights are produced as a byproduct of productive cooperation between these two industries, which enhance the process of innovation.

Both Marsili and Salter believe that a method to drive innovation is to combine expenditures in research and development with design.

6.2 External mediating factors

During the course of our analysis, we came across a great number of anecdotal comments about the external variables that impact creativity. Nevertheless, there were only a few papers that dealt with the mediating impacts that external variables had on the link between design and creativity in a meaningful manner. According to Hobday and his colleagues' findings, innovation policy and design policy have developed independently, despite the close relationship between the two. One of the reasons for this is that throughout the first and second generations of the process of developing innovation policies, design was only mentioned in passing (as an activity related to style) and given a restricted scope. There is also the fact that innovation policy research has been around for a longer period of time compared to design policy research. However, a later study conducted by the same group of researchers found that this disconnect is beginning to change. Later generations of innovation policies (the fourth and fifth, respectively) now position design as "a core technical task and a contributor to business differentiation and strategy." This is a good development that has the potential to revolutionize the relationship that innovation policies and design policies have with one another. Despite this, Hobday and his colleagues claim in another article that the change in innovation policy is not always mirrored in design policy. Borja de Mozota believes that the location of a firm has an effect on how the organization views the contribution that design makes to innovation management. According to what she has said, "The perception of the influence of design on the management of innovation varies depending on the company's geographical zone." In Northern Europe, design is seen as an expertise that may change the way procedures are carried out. On the other hand, design is seen as a helpful tool for setting up innovative projects with interdisciplinary teams in Southern Europe. The implication here is that since different regions have different ways of interpreting what design is, those differences will, in turn, influence how it is utilized and how its effect is evaluated. This is because the understanding of what design is differing from place to region.

7 Conclusion

In spite of these holes in the design studies literature, a common theme has begun to emerge: the one-of-a-kind feature that design activity provides to innovation is the fact that design language—communication that is based on visual tools, design development techniques, and research methods, for example—has effectively become the language of innovation. Design practices, design visualizations, and design methods—not to mention the push toward integrating design thinking—often form the common ground upon which conversations can be built in the complex context of the innovation process. This is because design thinking seeks to integrate design into all aspects of the innovation process. In a very real sense, the language of invention is the language of design. Lastly, we acknowledge that the structure of our evaluation has two fundamental limitations that should be taken into consideration. The first concern is associated with the breadth of our investigation. Our goal was to determine how the link between design and innovation has been depicted in design literature over the last thirty years. Our focus was on the period between 1980 and 2010. However, this goal excludes other areas of literary study where the link in question is significant both in terms of its interest and its consequences. There is a body of literature that has been produced within the fields of engineering, management, and business that studies and explains the link between design and innovation. If we don't take their contributions into account while looking for an explanation concerning that relationship, the response we get will always be insufficient. The second restriction pertains to the phrases that we used while conducting our search of the scholarly literature. During our study for the "Design Values" project, we restricted ourselves to the phrases that we had determined to be fundamental, and we did it without a significant amount of prejudice. We are aware that other phrases might also be appropriate, and we believe that in the future, we need to broaden our search in order to find a solution.

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