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How Design Thinking Shapes Business Innovation: A Review of Creative Problem- Solving in Contemporary Organisations

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ABSTRACT: This study explores the influence of design thinking on business innovation and creative problem solving in the modern world. Study is conducted using secondary research method and limited to the academic literature only retrieved from Google scholar. Five themes are explored: creative problem-solving, user-centred innovation, experimentation and prototyping, entrepreneurship and business-model innovation, and organisational culture and competitive strategy. The results show that design thinking can be used to gain insight into the needs of your customers, to question your own assumptions, to come up with new ideas and to test ideas to improve solutions. The success relies on the organizational culture, leadership, resources and implementation, however. In general, design thinking can be a tool to enhance innovation if it is in the right place in the organization and is nurtured by an on-going learning process.

KEYWORDS: Design Thinking; Business Innovation; Creative Problem-Solving

I. INTRODUCTION

Organisations are under growing pressure to know what customers want, adapt to the market and create new products/services. Traditional methods of problem-solving might not always be adequate when organisations face complex and ambiguous problems (Beckman and Barry, 2007). Design thinking has thus become a valuable tool for innovation since it allows organisations to learn about the needs of the user, consider problems from a variety of viewpoints, brainstorm ideas, and experiment and prototype with potential solutions. The design thinking can be understood as a more than a creative method. It offers a structured process for an organisation to understand the needs of the user, question existing beliefs and create solutions in an iterative way. It fosters collaboration and user participation, which can link innovation efforts to actual customer issues. It may also lead to product, service, organizational process and business model changes. Design thinking has become more critical as companies strive to compete in new markets defined by technology advances, shifting consumer behaviors, and uncertainty. However, the implementation of it is not guaranteed to be successful because the culture, resources, management support and resistance of the organisation can affect its effectiveness (Brown, 2008). This research paper explores the impact of the design thinking in the field of business innovation, particularly creative problem-solving, user-centred innovation, experimentation, prototyping, entrepreneurship, product development, business-model adaptation and the importance of creativity in the modern competitive strategy.

II. RATIONALE AND OBJECTIVE

Rationale

This study is motivated by the need of the organisations to find effective strategies of innovation in the ever-changing and competitive markets. Businesses need to constantly adapt to customers' shifts in expectations, new technologies, and new market opportunities. Design thinking is a potentially useful framework as it brings together the understanding of users, creativity, experimentation, and iterative problem-solving. However, the use of it in organisations isn't always easy. Resistance to change, managerial support, lack of resources, and challenges with integrating creative solutions into already established business processes can be an issue for businesses. It is therefore crucial to critically analyse the design thinking to understand the contribution of design thinking to meaningful business innovation (Carlgren, Rauth and Elmquist, 2016). This research will investigate the role of this beyond the individual product design, extending its visibility to its impact on organisational problem solving, customer-centred innovation, entrepreneurship, product development, business-model adaptation, and competitive strategy.



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Objectives

1. To examine the role of design thinking as a methodology for creative problem-solving and innovation within contemporary organisations.
2. To evaluate how user-centred thinking, experimentation and prototyping contribute to product, service and business-model innovation.
3. To critically assess the benefits, limitations and strategic implications of design thinking for organisational competitiveness and long-term innovation.

III. METHODOLOGY

The research used in this study is secondary research to understand the role of design thinking in shaping business innovation and creative problem solving in modern organisations. There will be no primary data, interviews, questionnaires or surveys. The study, however, only uses the works of literature found on Google Scholar. This approach is suitable for the following reasons: The research is designed to re-evaluate and combine existing theoretical and empirical research on design thinking, innovation and organisational practices. The peer-reviewed journal articles and academic research papers and scholarly reviews were located by entering key words in the literature, such as “design thinking,” “business innovation,” “creative problem-solving,” “user-centred innovation,” “prototyping,” “business model innovation,” “entrepreneurship” and “organisational innovation.” Recent academic publications received a higher priority with earlier studies having a strong influence serving as a foundation for theory. Academic relevance, credibility, methodological quality and direct relationship between the sources and the research objectives were evaluated. The information from the literature search was thematically analysed. The findings were structured in five themes: design thinking and creative problem-solving, user centred innovation, experimentation and prototyping, entrepreneurship and business-model innovation, organisational culture, competitive strategy and limitations. By looking at the findings across these themes, the research can now highlight shared arguments, differing viewpoints, gaps in research and implications for modern organisations. Ethical issues include the representation of the author's ideas and arguments, the avoidance of fabrication and plagiarism, and the proper citation of all sources of information employed in developing a research project.

IV. LITERATURE REVIEW

Theme 1: Design Thinking as a Framework for Creative Problem-Solving

Design thinking has come to be seen as a way for organisations to solve complex problems and to come up with innovative solutions. It does not start with an existing set of answers, but rather invites organisations to explore the problem, to draw in the stakeholders, to brainstorm a variety of answers and to then systematically narrow down on some of the answers. Design thinking is currently described in contemporary literature as a mindset and as a methodology, being both human centred in thinking and experimental and iterative in learning (Elsbach and Stigiani, 2018). Research on design thinking can be more comprehensively understood from a systematic review of 164 research articles, presented in three interrelated dimensions as organisational and individual context, the DT process itself and the DT products produced by its application. This indicates that DT is not an independent method that is separate from its context. Creative problem-solving is especially important when the problem-solving situation is one in which there is not the same amount of structure as in more traditional situations. Design thinking opens teams to the possibilities of questioning assumptions and exploring other ways to understand client and organisational issues. This can increase the possibilities for alternative solutions without investing resources in a specific solution. In addition, due to its iterative nature, failures in the course of experimentation can be a learning experience, instead of a negative experience (Bender-Salazar, 2023). But, literature also shows that design thinking is not supposed to be a panacea to organizational problems. It requires conditions of the organization, team skills and employees and managers' tolerance for uncertainty. There are enablers that have been identified in the recent research, such as organisational support, cultural fit, stakeholder engagement, training and resources, as well as, there are organisational resistance and operational constraints that can restrict successful implementation (Johansson-Sköldberg, Woodilla and Çetinkaya, 2013). Design thinking, then, should be looked at as a tool or process to help create innovative solutions, not a sure-fire pathway to innovation.

Theme 2: User-Centred Innovation, Empathy and Co-Creation

One of the key tenets of DT is user/stakeholder centrality. User-centred innovation requires organisations to go beyond their assumptions about customers' wants and needs, and to explore customers' experiences, expectations, frustrations and behaviours (Magistretti et al., 2020). This orientation can help innovation activities to become more related to actual



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customer problems. By using methods like observation, interviews, journey mapping and collaborative workshops, organisations can gain more insight into the context of products and services. The importance of user involvement is also connected with co-creation. Unlike mere reception of organisational innovation, the customer can also be a part of the process of problem identification and assessment of potential solutions, as part of design thinking (Liedtka, 2011). Organisations can gain extra knowledge through co-creation that is not available within the organisation. It can also be used to find ideas that are flawed from the onset, as well as find out if the ideas that are proposed are relevant or not. The literature on design thinking and business-model innovation also emphasizes co-creation of products, services and business models as a key research theme. This is because user-centred design can be applied to go beyond just enhancing the look and/or usability of one product. Can affect the way organisations perceive value creation and the relationship they have with customers and other stakeholders. However user-centred innovation also has its challenges. Sometimes, customers may not be able to describe their future requirements, and sometimes, customer feedback gathered from a small sample may not be representative of the market. Organisations thus must integrate knowledge of their customers and technical expertise with financial and strategic analysis (Liedtka, 2014). Too strong of a customer focus could also hinder transformational innovation since changes in solutions that customers are familiar with are likely to be assessed first. However, user-centred design is a most powerful approach when customer knowledge is combined with organisational knowledge and market analysis.

Theme 3: Experimentation, Prototyping and Product and Service Development

Another significant way design thinking has an impact on business innovation is by experimentation and prototyping. Rather than putting a lot of work into an idea before knowing if it is workable, organisations can make relatively simple sketches of potential products, services or processes and test them with users. Prototyping is not always about building the product itself, but it's about gathering data which will help in making better decisions in the future. This can help to minimize uncertainty as organisations will get feedback first before investing considerable effort into implementation (Liedtka, 2015). Prototypes can also help convey abstract ideas in a more concrete way, and multi-disciplinary teams, managers and customers can recognize problems that may not have been discovered otherwise. Continued testing can lead to incremental improvements and make innovation a continual learning process for organisations. This applies also to product and service development. Design thinking can facilitate the process of problem identification with the customer to concept generation, exploring options and prototyping solutions. Importantly, experimentation opens up pathways for organisations to learn from ideas that didn't work. Failure can be seen not just as wasted resources, but as a way to gain knowledge for the organisation through controlled experimentation. In some cases, however, experimentation can clash with organisational cultures that demand certainty, efficiency and predictable outcomes. It can be hard to get managers to back concepts that aren't likely to pay off in the near term, especially if the short-term goals are the key factors in the decision. However, prototyping can also be time consuming and resource-intensive, and not all prototypes can yield commercially viable innovation (Linton and Klinton, 2019). Therefore, experimentation must be accompanied by a clear decision-making process which includes when to change an idea, when to scale up or down and when to abandon an idea. Overall, the literature indicates that prototyping, as a link between creativity and practical evaluation, is valuable. It helps convert ideas into viable options and enables organisations to make more informed decisions prior to full implementation. Design thinking is therefore a process that helps innovation not just in the generation of ideas but also by providing processes for testing and developing ideas (Luchs, Swan and Griffin, 2016).

Theme 4: Design Thinking, Entrepreneurship and Business-Model Innovation

Design thinking has more and more been associated with entrepreneurship since entrepreneurs often face situations where they have to look for opportunities without having information available (Liedtka and Ogilvie, 2011). Adopting a design thinking mindset can help entrepreneurs delve into customer issues, brainstorm new value propositions and test hypotheses before building a business. This might be especially important for new businesses when they are early in the process, as it can help determine if the product or service has a real market demand. The connection of design thinking with business-model innovation is not limited to product development. According to Magistretti et al. (2023), a business model tells how the organisation makes value creation, value delivery and value capturing happen and innovation can happen by changing customer segments, customer channels, value propositions, partnerships, resources and value capturing mechanisms. Research specifically examining design thinking for business-model innovation identifies design thinking as both a mindset and methodology and highlights design activities, tools, approaches, co-creation and impact evaluation as important areas of application. There is a strong, growing interest in this relationship, as evidenced by a review of 44 relevant studies. Design thinking can help with business-model innovation by helping managers to imagine their current business-models, find shortcomings and try out new ones. It can also help to make strategic assumptions



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more explicit, so that teams can discuss whether there is any basis for continuing to pursue the traditional methods of creating value in changing markets. However, it is a lot more difficult to achieve business-model innovation than to redesign one product. A business model change may impact at the same time suppliers, employees, customers, technologies, revenues, and organisational skills. Hence, DT can not solve financial, regulatory or operational issues. More likely it might have a key role in opening up the possibilities of organisations and in representing complex strategic issues under study in various ways (Magistretti et al., 2025). This indicates that design thinking is useful if used in conjunction with other managerial and analytical tools. Creative exploration should be followed by feasibility assessment, planning and evaluation. So, design thinking can increase strategic options for entrepreneurship and business-model innovation, but it is not enough for commercialisation to be successful, as there is a need to strengthen the capacities of the organisation in the field.

Theme 5: Organisational Culture, Competitive Strategy and the Limitations of Design Thinking

The last theme focuses on the organisational conditions to implement design thinking and what this means for competitive strategy. In general, design thinking can potentially build competitiveness as a way to help organisations to better address customer needs, discover new opportunities and create new products or services and business models. Its collaborative nature can also help integrate employees from various functional areas into the innovation process, instead of restricting innovation to specific departments (Micheli et al., 2019). Organisational culture, however, can make design thinking part of the culture or a one-off event. While iterative experimentation can be difficult for organisations with high levels of failure tolerance and strong collaboration, it can be harder still for those that have more rigid hierarchies and less collaboration. Leadership is important especially due to its impact on resource allocation, employee behaviour, and legitimacy of experimentation. In recent years, systematic research has found the following elements to be significant in supporting the implementation of DT: organisational support, team dynamics, training, stakeholder trust and cultural fit. On the other hand, there is the possibility of resistance, the operational pressures and difficulties of stake-holders which may prevent the sustained implementation. But there are plenty of criticisms of design thinking. Others claim it has led to 'streamlined versions' where organisations use workshops, brainstorming, or visualization without tackling the deeper issues within the organization (Rösch, Tiberius and Kraus, 2023). However a critical literature states that dominant approaches can be very much concerned with making and a product-oriented thinking, with an inability to see broader social and organisational aspects. Recent research further finds that the implementation of design thinking can be superficial or symbolic if organisations neglect to tackle underlying structures, leadership limitations and mental models. It means that buying design-thinking training, or adding stand-alone workshops, is not sufficient to make an innovative organisation. Organisational learning, leadership commitment and capability building for uncertainty and experimentation is required for sustainable implementation (Brown and Martin, 2015). Design thinking should therefore not be considered a competitive advantage per se, as a competitive strategy. An organisation's competitiveness is hinged on its ability to turn insights and ideas into valuable, and hard-to-imitate, outcomes. Single design thinking tools can be easily replicated by the competitors. Perhaps more challenging to copy is the ability to organize to be able to understand customers, collaborate across functions, experiment, learn, and effectively implement (Santa-Maria, Vermeulen and Baumgartner, 2022).

Literature Review Synthesis

The literature shows that design thinking is not limited to product design, but has evolved as a wider approach to innovation within the organisation, across the five themes. It can be seen in creative problem-solving, user centred innovation, co-creation, experimentation, prototyping, entrepreneurship and business-model development. Concurrently, the results it has are heavily influenced by the organisation setting. The evidence thus contradicts the notion that design thinking will lead to innovation. The value of it is more accurately seen in its capacity to create conditions for exploration, learning and problem reframing (You, 2022). The most promising prospects occur when organisations bring together the elements of design-thinking with the right leadership, resources, the right people and the right process for assessing commercial viability. On the other hand, if it is not well understood, well organised and implemented superficially, its effect can be significantly diminished. The literature shows overall that design thinking has a potential to influence business innovation by altering the way organisations perceive a problem, engage stakeholder, create ideas, and learn from experimenting. Its strategic importance is contingent on the ability of organisations to leverage beyond creative events and integrate design thinking into the broader organizational process and decision making.



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V. CONCLUSION

In this study, the impact of design thinking on business innovation and on creative problem-solving in today's organisations has been investigated. The discussion illustrates how design thinking is used by organisations to gain a structured but flexible understanding of complex problems, how to identify the needs of the customer and how to develop innovative responses. The focus on user-centred thinking helps companies think about customer experiences when developing or enhancing products and services, while experimentation and prototyping lets ideas be tested and refined prior to broader implementation. The literature also suggests that DT can be applied to entrepreneurship and business-model innovation by challenging taken-for-granted assumptions and seeking new value creation and delivery strategies in the organisations. Moreover, it is possible to build cooperation between various organizational functions to further the flow of knowledge and invite diverse viewpoints in the context of innovations. But design thinking is not the solution for every problem and not a guaranteed competitive edge. It is contingent on organisational culture, leadership support, resources, employee participation and an openness for experimentation and learning from failure. If organisations only look at the individual tools, it may achieve only a superficial adoption and therefore fail to contribute other areas of innovation. Overall, design thinking can have a significant impact on business innovation when it is part of the organisation's strategy and becomes part of its capabilities. It's best used by enabling organisations to meld creativity, customer focus, experimentation and ongoing learning in response to business challenges that evolve.

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