

Role of Design Thinking Approach in New Product Development: A Cross Sectional Study

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Abstract

Within this contemporary and dynamic business landscape, firms are constantly seeking creative solutions to develop and launch successful new products. Traditional product development approaches often rely heavily on market research and engineering-driven processes, which can lead to limited creativity and a lack of user-centricity. In response, the design thinking (DT) approach has emerged as a valuable methodology for generating breakthrough ideas and delivering customer-focused products. The DT approach encourages multidisciplinary collaboration, involving stakeholders from various backgrounds, such as designers, engineers, marketers, and end-users. This cross-functional collaboration promotes diverse perspectives and fosters a holistic understanding of the problem space, resulting in more comprehensive and innovative solutions. Additionally, DT empowers organizations to uncover latent customer needs and identify unexplored market opportunities. By observing and engaging with users in real-world contexts, designers can gain deep insights into their behaviors, desires, and pain points, enabling the development of disruptive products that meet unmet needs. The researcher had considered 195 people from different sectors to know the role of design thinking approach in new product development and concludes that there is significant role of design thinking approach in new product development.

Keywords: Design thinking, Product development, User experience, Prototyping, Multidisciplinary collaboration, Customer-centric, Diverse perspectives, Rapid prototyping.

Introduction

In today's fast-paced and ever-evolving business environment, organizations are continuously faced with the challenge of developing and launching successful new products. Traditional approaches to product development often rely on market research and engineering-driven processes, which can lead to incremental improvements rather than true innovation. However, the DT approach has emerged as a powerful methodology that can foster breakthrough ideas and deliver customer-centric products.

DT is a humane activity as well as an iterative approach that places users at the core of the product development process. By developing a deep understanding of users' needs, motivations, and pain points, organizations can create products that truly resonate with their target audience. This user-centric approach has become increasingly important as customers are demanding more personalized and tailored experiences. Furthermore, DT promotes a rapid and iterative prototyping process. Instead of spending extensive time and resources on developing a fully-fledged product, DT encourages the creation of quick and low-fidelity prototypes. These prototypes are then tested and refined based on user feedback, allowing for rapid validation and iteration.

Moreover, DT enables organizations to uncover latent customer needs and identify unexplored market opportunities. Through immersive research methods such as ethnographic studies and in-depth interviews, designers can gain deep insights into users' behaviors, desires, and pain points. These insights go beyond what customers explicitly express, allowing organizations to identify unmet needs and develop products that address them, thereby gaining a competitive advantage in the market.

Literature Review

Beltagui (2018) adopts a DT approach to investigate the development of capabilities in the context of development of a novel product for service businesses. The study underscores the importance of adopting a customer-centric approach throughout the product development process and explores how DT principles can contribute to enhancing capabilities. The author discusses the integration of design thinking methods, such as user observation and ideation, into the development process to foster creativity and innovation.

Liu and Lu (2020) propose a functional design framework that combines innovative DT with product development processes. The authors recognize the need for a systematic approach to guide DT activities within the product development context. Their framework incorporates five key elements: DT stages, DT tools, design methods, design artifacts, and design outputs. The study provides a structured approach for implementing DT in product development and highlights the potential benefits of integrating DT into established processes. The proposed framework offers a practical tool for organizations to enhance their innovation capabilities and improve the effectiveness of new product development efforts.

The study by Lindberg, Meinel, and Wagner (2011) explores the applicability of DT in the context of IT development. By incorporating DT principles, such as empathizing with users, ideating diverse solutions, and rapid prototyping, organizations can enhance their ability to develop innovative and user-friendly IT solutions. The study provides valuable insights into how DT can be effectively applied in the IT domain, highlighting its potential to drive impactful and successful IT development projects. Meinel et al. (2020) conducted an experimental comparison study to examine the effectiveness of DT in generating superior new product concepts compared to traditional innovation approaches. The study highlights the value of DT in fostering innovation and suggests that organizations can benefit from adopting DT methodologies to generate more successful and differentiated new product concepts.

Chen et al. (2018) investigates the integration of DT principles into marketing education, specifically in the context of product development. By linking product design with marketing strategy, students were exposed to a more holistic approach to new product development. The study highlights the benefits of incorporating DT in marketing education, such as enhancing students' creative problem-solving skills, promoting customer-centricity, and improving collaboration between marketing and design teams.

Volkova and Jākobsone (2016) emphasize the importance of DT as a business tool for continuous value generation. The authors argue that DT enables organizations to create innovative and customer-centric solutions by focusing on empathy, ideation, and experimentation. They highlight how DT facilitates a shift from a problem-solving mindset to a value-generating mindset, where organizations continuously seek to uncover new opportunities and meet evolving customer needs.

In their research, Wrigley, Nussem, and Straker (2020) delve into the implementation of DT in organizations, focusing on the understanding of organizational conditions that support its successful adoption. They highlight the need for organizations to create an environment that fosters experimentation, learning, and interdisciplinary collaboration to fully leverage the potential of DT. The study provides valuable insights into the organizational dynamics that can influence the effective implementation of DT approaches. Chen and Venkatesh (2013) investigate the implementation of DT in design-oriented organizations. They explore how these organizations embrace DT principles and practices to enhance innovation and drive competitive advantage. The study reveals that successful implementation of DT involves a combination of structural, cultural, and procedural changes within an organization. It emphasizes the importance of aligning DT with organizational goals and creating a supportive infrastructure that encourages experimentation, collaboration, and user-centeredness. The findings shed light on the key considerations for organizations aiming to effectively integrate DT into their operations. Kupp, Anderson, and Reckhenrich (2017) present a critical perspective on the application of DT in the business context. The authors argue that DT has been overly simplified and misapplied, often reduced to a superficial set of tools and techniques. It encourages organizations to foster a culture of creativity, empathy, and experimentation to truly unlock the potential of DT.

Liedtka (2011) explores the practical application of DT tools for successful innovation. The study emphasizes the value of DT as a systematic approach that combines analytical and intuitive thinking. The research emphasizes the importance of actively practicing and learning these tools to cultivate DT capabilities within organizations. It offers guidance for organizations seeking to adopt DT by providing a framework for learning and applying its tools effectively.

Wrigley and Straker (2017) focus on DT pedagogy and its application in educational settings. The study proposes a framework called the "educational design ladder" to guide educators in integrating DT principles into their teaching practices. The ladder represents a progression from introducing DT concepts to students to incorporating real-world projects and collaborative problem-solving activities.

The research highlights the benefits of DT in fostering creativity, critical thinking, and problem-solving skills among students. It provides educators with practical guidance on incorporating DT into educational curricula to develop students' innovation capabilities.

Objective: To measure the role of design thinking approach in new product development.

Methodology: The researcher had considered 195 people from different sectors to know the role of design thinking approach in new product development. The survey was conducted with the help of a questionnaire. The researcher had collected the primary data through random sampling method and analysed it using mean and t test statistical tools.

Findings

Table 1 Role of Design Thinking Approach in New Product Development

S. No.	Statements	Mean Value	t value	Sig.
1.	DT approach among students incorporates real-world projects and collaborative problem-solving activities	3.19	2.700	0.004
2.	Encourages organizations to foster a culture of creativity, empathy, and experimentation	3.21	3.003	0.002
3.	DT approach enhance innovation and drive competitive advantage	3.18	2.615	0.005
4.	Creates a supportive infrastructure that encourages collaboration, and user-centeredness	3.16	2.278	0.012
5.	Facilitates a shift from a problem-solving mindset to a value-generating mindset to uncover new opportunities and meet evolving customer needs	3.20	2.894	0.002
6.	Enhance promote customer-centricity, and improve collaboration between marketing and design teams	3.15	2.134	0.017

Table and Figure 1 shows different role of design thinking approach in new product development. The respondent says that DT approach encourages organizations to foster a culture of creativity, empathy, and experimentation with mean value 3.21, facilitates a shift from a problem-solving mindset to a value-generating mindset to uncover new opportunities and meet evolving customer needs with mean value 3.20 and DT approach among students incorporates real-world projects and collaborative problem-solving activities with mean value 3.19. The respondent also says that DT approach enhance innovation and drive competitive advantage with mean value 3.18, creates a supportive infrastructure that encourages collaboration, and user-centeredness with mean value 3.16 and enhance promote customer-centricity, and improve collaboration between marketing and design teams with mean value 3.15. The value under significant column for all the statements related to role of design thinking approach in new product development are significant with value below 0.05 after applying t-test.

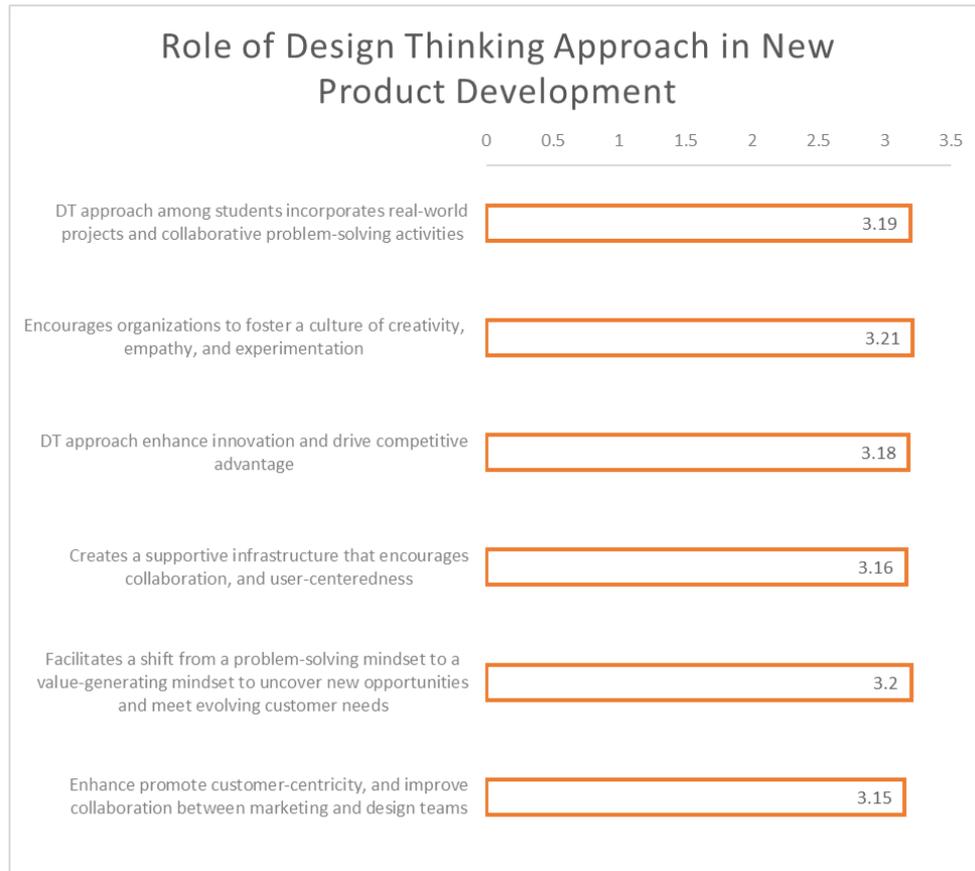


Figure 1 Role of Design Thinking Approach in New Product Development

Conclusion

In conclusion, the adoption of a DT approach in new product development offers significant benefits to organizations seeking to create innovative and user-centric products. By placing users at the forefront, fostering collaboration, and embracing iterative prototyping, organizations can enhance their ability to generate breakthrough ideas, improve user experience, and gain a competitive advantage in the market.

The study was conducted to know the role of design thinking approach in new product development and found that DT approach encourages organizations to foster a culture of creativity, empathy, and experimentation, facilitates a shift from a problem-solving mindset to a value-generating mindset to uncover new opportunities and meet evolving customer needs and DT approach among students incorporates real-world projects and collaborative problem-solving activities.

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