

A CONCEPTUAL STUDY OF DESIGN THINKING: AN OVERVIEW IN PRESENT PERSPECTIVE

By

***Meenakshi Kaushik, **Ravindra Kumar & *** Manu Kaushik**

**Dean (Research), Trinity Institute of Innovations in Professional Studies (affiliated by Indraprastha College), Greater Noida, Uttar Pradesh, India.*

***Director, Trinity Institute of Innovations in Professional Studies, Studies (affiliated by Indraprastha College), Greater Noida, Uttar Pradesh, India.*

****BA (Hons) Journalism 1st year, Maharaja Agrasen College (affiliated by Delhi University), Ganpati Mandir Marg, Vasundhara Enclave, Delhi, India.*

Abstract

This conceptual study on design thinking provides an overview of design thinking issue in present perspective as an innovative problem-solving approach and as a business model to explain design and design thinking concepts from the researcher's point of view. The researchers have used descriptive research method to explain this popular concept and specially chosen this topic due to the increasingly embraced by the world of business and business education over the last decade. The researcher has explained the design thinking as a human-centric problem-solving approach and as an iterative and a customer oriented approach and emphasized on the fact that how design thinking has captured the imagination of practitioners and educators in a range of fields in recent years and has been applied by many successful companies to attain competitive advantage. This paper mainly focuses on what is design thinking and how various researchers have defined designed thinking concept and related issues in their research papers. It has also covered a few related aspects like design thinking as an integrated approach.

Keywords: *design thinking, iterative process, wicked-problems, human-centred process, empathy, design thinking as an integrated approach.*

Introduction

Design thinking is an innovative problem-solving process rooted in a set of skills. The approach has been around for the decades, but it only started gaining attention outside of the

design community after the 2008 Harvard Business Review article entitled as "Design Thinking" by Tim Brown, CEO and president of design company IDEO. Design thinking is that is how designers think has long been a

topic of research and education in the field of design (Lawson, 1980; Rowe, 1987; Cross, 1990; Goldschmidt, 1994; Cross et al., 1996; Dorst, 2010), and more recently, outside this field too (Kelley, 2001). It is a phenomenon that involves observation, collaboration, fast learning, visualization of ideas, rapid prototyping, feedback gathering, and re-design. Design thinking is used to tackle “wicked problems” or ill-defined /unknown problems because they can reframe these in a very human centric ways and focus more on what is most important from the user’s perspective. It may also be considered as the best process for “thinking outside the box” and understanding the target user’s and their requirements, to add realistic contexts and insights to design processes. This is also termed as UX Research. The term design thinking has two current meanings. One is the study of the practices of working designers and the other meaning refers to the human-centred ‘open’ problem solving process which decision makers use to solve real world ‘wicked’ problems.” (Melles, 2010, p.299).

Design Thinking is a comprehensive customer-oriented approach

Design thinking involves innovation and creativity to generate and develop creative business ideas & entire business models. Essentially, Design Thinking attempts to explain the designers' thinking process, creativity, approaches, various design thinking models and methods applied into different business processes and activities. It supports and deals with a big or a small problem and provides all possible solutions to the wicked problems. These might be related to new products, services, business models or social and organizational concepts. Design thinking is applicable in a variety of professions, business, government, education, and in non-profit organizations. It is also applicable in sports, research and development to business, management and design. Design thinking is widely used by professionals around the globe. It is not only confined to a specific domain but it can be applicable in diversified areas like literature, art, music, science, engineering, business etc. Now majority of the organizations and industries have realised the significance of design

thinking applications. Multinational companies like Apple, google, Samsung, GE and many others are already applying design thinking concept in their products and services, processes, culture and making their products 'unique'. There is no doubt that design thinking is such an important part of majority of organizations and industries that they are rendering products and services by using design thinking models by getting more closer to the end users and taking their feedbacks. Design thinking is undeniably a powerful tool for various organizations and industries by which designers try to gain solutions to the wicked problems in a human centric manner. There is no doubt that design thinking is such an important part of majority of organizations and industries that they are rendering products and services by using design thinking models by getting more closer to the end users and taking their feedbacks

The design thinking is an iterative and a cyclical process

Though, the various phases of design thinking process include linear steps, but practically, the process is not

always linear as design thinking is iterative in nature and some of these steps may take place several times and the designer may even jump back and forth between them. Design thinking is an iterative process. It includes concept modelling, collaboration, prototype testing and interaction with users to receive their feedback. In academic plethora, the discussion about design thinking has been for more than 30 years, as it is an innovative method that has led to its popularity in various disciplines. As Goldschmidt (2017) stated, the term design thinking means different things to different communities. This distinguishes two facets: (1) Descriptive models of the design process, based on observational research of real-life or laboratory design activities by individuals or teams; (2) a method to be practiced in industries that strive to introduce innovative products or services. Design thinking helps in generating revolutionary solutions to the problems through innovation, creativity. In academic plethora the discussion about design thinking has been for more than 30 years, as it an innovation method that has led to its

popularity in various disciplines (Wrigley & Straker, 2017).

Design thinking involves five phases

The stepwise strategies used in design thinking are: (1) empathize: use a need assessment process to identify the problem and opportunities by observing, engaging, and empathizing with users; (2) define: frame the problem in a user-centric manner; (3) ideate: identify a broad range of ideas and potential solutions; (4) prototype: use an iterative process of testing & trial scaled down versions of solutions with users; and (5) test: implement and refine the chosen solution with user feedback. This last step includes the consideration of such issues as compatibility in a dynamically changing PESTEL environment of the dynamic market.

Objectives of the study

1. To study and give an overview on design thinking concept & related issues from the researcher's perspective.
2. To study and analyse the design thinking application in various areas and fields.

3. To study the design thinking significance in present context with the help of existing secondary data in the forms of existing journal articles, existing secondary data based materials.

Review Literature

To a large extent, the design and design thinking models and approaches in the business literature have been largely popularized by stories and case studies of work carried by design firms such as IDEO that have been working in new product development for decades. As per the interviews of design professionals conducted by Hassi & Laakso (2011), the roots of the term design thinking emerged in the late 1960s. The concept of design thinking is explicitly used by Lawson (1980) and was developed by Cross (1982) and Schön (1983). It became the title of a book by Rowe, published in 1987.

The term design thinking has two current meanings—the study of the practices of working designers—the other meaning refers to the human-centred 'open' problem solving process decision makers use to solve real

world 'wicked' problems." (Melles, 2010, p.299)

Brown & Wyatt (2010) explained design thinking as aimed at consumer insights in depth. Design thinking is inherently optimistic, constructive and experiential. Its concept is completely based on clients and customers' needs.

Design thinking is widely understood as a human-centered approach to creativity and innovation that includes inspiration, ideation and implementation that appears equally cyclical and iterative. Understanding people as inspiration, prototyping, building to think, using stories, and having an inspired and inspiring culture. Design thinking is a human based approach to invent and innovate something, design and implement something with the help of new methods and ways to develop innovative products, services, methods, business models and concepts and processes. It prevails in all aspects of business functioning of an organization. Design thinking comprises of a variety of creative strategies for managing and administering various kinds of projects with multiple stakeholders and

fostering organizational innovation. It deals with ambiguities and articulating the right questions, as well as identifying and formulating possibilities and potentials (Grots & Creuznacher, 2016, p. 191). It aims to address the immediate solution of the problem and is consisted of a few important steps to allow the designer to analyse, synthesize, diverge and generate insights from different domains through drawing, prototyping and storytelling. The design thinking is a phenomenon where the facilitator encourages learners to see constraints as inspiration. The results are typically directed toward a technological quick fix but toward new integrations of signs, things, actions, and environments (Buchanan, 1992).

Elsbach and Stigliani (2018) describe design thinking as an approach to problem solving that uses tools traditionally utilized by designers of commercial products, processes, and environments. According to Cochrane and Munn (2016) the three main elements of design thinking are observational research, visual sense making, and rapid prototyping. The authors describe a typical design thinking process as a cycle of (1)

empathizing and observing, (2) defining the problem, (3) creating ideas, (4) prototyping, and (5) testing (Cochrane & Munn, 2016).

Renard in 2014 proposed that the Design thinking has roots in various disciplines and is frequently, although not exclusively, associated with engineering, architecture and related design. The essence of design thinking is to put participants into contexts that make them think and work like an expert designer, and thereby foster civic literacy, empathy, cultural awareness and risk taking (Sharples et al., 2016).

According to Skaggs (2018) the tools observation, experience, and inquiry allow designers to understand human needs and shape information to drive the creation of products and experiences that make human connections through aesthetics, need-finding, or making meaning. Airbnb -In an article "How design thinking transformed Airbnb from a failing start up to a billion-dollar business."- outlines how the famed start up went from \$200 a week profit to the "unicorn" it is today. Design thinking is a part of Airbnb's success, in particular,

they built a culture of experimentation." It was only when they gave themselves permission to experiment with non-scalable changes to the business that they climbed out of what they called the through of sorrow?. Design thinking is considered halfway between analytical thinking and intuitive thinking. Analytical thinking involves purely deductive reasoning and inductive logical reasoning that utilize quantitative methodologies to come to conclusions. However, intuitive thinking refers to knowing something without any kind of reasoning.

Bross, Acar, Schilf, and Meinel (2009) describe design thinking as "a human-centred systems thinking approach that creates experiences for stakeholders by matching human factors with technological feasibility and business viability. The intuitive thinking helps in invention for the future endeavours, whereas analytical thinking is applicable to create something innovative and creative in the present, which is replicable. The willingness to use these futuristic solutions is what is called abductive logic. Design thinking helps design thinkers to develop deep empathy for

their customers and to create solutions that match their needs exactly. The solutions are not delivered just for the sake of technology.

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home toilets, there are few good options when it comes to our bodies most basic functions. Working with Unilever, water & sanitation for the urban poor (WSUP), and IDEO.org developed Clean Team, a comprehensive sanitation system that delivers and maintains toilets in the homes of subscribers. Clean Team now serves 5,000 people in Kumasi, Ghana, making lives cleaner, healthier and more dignified.

Taheri, Unterholzer, Hölzle, and Meinel (2016) stated that, “disparities among experts regarding the general understanding of design thinking, let alone its expected learning outcomes”. Several authors have observed that, despite its popularity, the concept lacks coherent and consistent descriptions (Kimbell, 2011; Taheri et al., 2016; Micheli et al., 2018). The design thinking approach is applicable to all kinds of business ideas – whether they have a product or service character. The first mouse for the Macintosh computer was created after a similar approach, or the first toothbrush with a wider ergonomic shaft. Design thinking involves five phases-Empathize, Define, Ideate, Prototype and Test. Organizations and

industries in 21st century find design thinking as a very valuable and significant means to problem solution for the users of their products and services.

Design thinking aims to address the immediate solution of the problem. The design thinking process consists of few important steps to allow the designer to analyse, synthesize, diverge and generate insights from different domains through drawing, prototyping and storytelling (Brown, 2009).

Renard in 2014 proposed that the Design thinking has its roots in various disciplines and is frequently, although not exclusively, associated with engineering, architecture and related design disciplines in early literature focused on design thinking. The essence of design thinking is to put participants into contexts that make them think and work like an expert designer, and thereby foster civic literacy, empathy, cultural awareness and risk taking (Sharples et al., 2016). IT industry comes up with a lot of products and services that require trials and testing of concepts and for this purpose the industry needs to

empathize with customers and clients along with deploying technologies. Design thinking has been recognized repeatedly for its contributions to business and management practices. This has led to an increase in the number of higher education programs that teach design thinking to business students, managers and executives (Matthews & Wrigley, 2017). In order to be marketable and competitive, students need to understand, embrace and generate innovation by developing and implementing new and meaningful ideas (Wright & West, 2010). Moreover, even the design discipline recognizes that the procedural knowledge of design thinking might be more important than the actual design skills – “the survival of design as a profession may depend less on traditional design education and more on responding strategically to contemporary changes, influenced by ethical and environmental issues as well as technological advancements” (Cassim, 2013). Many large successful international firms such as General Electric, Proctor & Gamble, Sony, and Philips, IBM use design and design thinking approach as a problem-solving apparatus across the company.

While the importance of design in business has been well established, the contributions of design were best known and valued in innovation and creativity in developing new products and new service development (Utterback et al., 2006). More recently, design thinking has moved from product and process design to becoming a key element in company strategy (Camillus, 2008; Fleetwood, 2005; Verganti, 2006, 2008).

Thus design and design thinking approach and models are not only used for developing products and services with new innovative and creative ideas but also coming up with more modifications in existing products and services. The drivers that have largely stimulated interest in design and design thinking at a company level are, the growing recognition of the potential impact of design and its contribution to successful business practice and the popularity of the notion of design thinking at the business level.

Research methodology

This research paper is basically descriptive and analytical in nature. In

this paper, an attempt has been made by the researcher to describe the concept of design thinking in detail and describing its application in various industries as design thinking is a problem solving approach, iterative and customer oriented in nature and tries to solve the “wicked problems” through customers feedback. The data collection is done on the basis of secondary sources such as research papers, articles and existing study material on design thinking according to the need of the study.

Design Thinking is an integrative approach

This means that the problem solving is considered together with its framework conditions. The problem analysis and solution development are considered systematically and holistically in the form of a process. The working environment for this process is designed to promote innovative ideas and creativity. One also speaks here of the three Ps of Design Thinking i.e. People (the human being), Process (the problem-solving process) and Place (the working spaces) must be considered for a successful idea development. The

fourth P can be Partnerships, since a large number of partners must be involved in the development and implementation of ideas. Design Thinking starts with people (human centric approach) and not with a technology or a business goal. The analysts, consultants, developers and managers have to brainstorm on possible ideas for clients problem solutions. This is where design thinking helps a lot in present prevailing situations. Design thinking has been recognized repeatedly for its contributions to business and management practices. This has led to an increase in the number of higher education programs that teach design thinking to business students, managers and executives (Matthews & Wrigley, 2017). In order to be marketable and competitive, students need to understand, embrace and generate innovation by developing and implementing new and meaningful ideas (Wright & West, 2010). Moreover, even the design discipline recognizes that the procedural knowledge of design thinking might be more important than the actual design skills – “the survival of design as a profession may depend less on

traditional design education and more on responding strategically to contemporary changes, influenced by ethical and environmental issues as well as technological advancements” (Cassim, 2013). The systematic review of the literature has revealed that Design Thinking is applied now a days in every sphere to find out innovative solutions. This is because the human orientation of Design Thinking provides at least two benefits. On the one hand, it provides solutions focused on the users’ experiences. On the other hand, it provides a good working environment for finding out creative solutions. Both aspects are the main goals of any modern profession. Designers from various areas use the design thinking model because of its simplicity and its flexibility, it has become established as a standard in the field. So, there is a vast scope for the researchers and designers to introduce more methods, techniques to be applied to find out solutions.

Discussion & Conclusion

The main issues can be summarized as many large successful international firms such as General Electric, Proctor & Gamble, Sony, and Philips, IBM use

design and design thinking approach as a problem-solving apparatus across the company. While the importance of design in business has been very well established, the contributions of design were best known and valued in innovation and creativity in developing new products and new service development (Utterback et al., 2006). More recently, design thinking has moved from product and process design to becoming a key element in company strategy (Camillus, 2008; Fleetwood, 2005; Verganti, 2006, 2008). Thus design and design thinking approach and models are not only used for developing products and services with new innovative and creative ideas but also coming up with more modifications in existing products and services. The drivers that have largely stimulated interest in design and design thinking at a company level are, the growing recognition of the potential impact of design and its contribution to successful business practice and the popularity of the notion of design thinking at the business level. Design thinking supports and deals with a big or a small problem and provides all

possible solutions to the wicked problems. These might be related to new products, services, business models or social and organizational concepts. Design thinking is applicable in a variety of professions, business, government, education, and in non-profit organizations. It is also applicable in sports, research and development to business, management and design. It is widely used by professionals around the globe. It is not only confined to a specific domain but it can be applicable in diversified areas like literature, art, music, science, engineering, business etc. Thus design and design thinking approach and models can be mainly used for developing products and services with new innovative and creative ideas and also coming up with more modifications in existing products and services. The drivers that have largely stimulated interest in design and design thinking at a company level are, the growing recognition of the potential impact of design and its contribution to successful business practice and the popularity of the notion of design thinking at the business level.

Recommendation

Design thinking is a process and a mindset. Nowadays, modern society is facing huge techno-economic and social changes leading to new forms of competitions and various challenges in all kinds of organizations and industries. And design thinking is the only appropriate solution for all kinds of challenges and problems faced by business organizations. So, there is a great need to implement and execute new design thinking teaching methodologies, directed toward developing students with a new set of skill-sets necessary for excellent performance in this new paradigm. These new design thinking skill-sets include creativity, teamwork, critical thinking, and the ability to face complex problems and analyse all those wicked problems from the customers perspective and based on the analysis and discussion with the customers giving viable solutions to various industries by expert designers. Design thinking supports and deals with all kinds of “wicked-problems” either big or small and provides all possible solutions by the design experts or designers related to new products, services, processes,

strategies business models or social and organizational concepts. As design thinking is applicable in a variety of professions like business, government, education, and in non-profit organizations, sports, research & development so there is an urgent need to know and explore new facts and figures about design thinking by the research scholars. Design thinking is the need of the hour to get success as designer experts identify and address the main problematic causes that plague the whole business process and affect customers too as well. Design thinking being a customer-centred process based on customer's feedback, helps producing customer friendly, desirable products and services at a

very economic price so now majority of the organizations and industries have realised the significance of design thinking applications. One stands out for its resounding success among all, known as Design Thinking. Design thinking via applying its various phases and observing and empathizing with people by listening their issues tries to gain innovative solutions to the problems. There is an urgent need to create more and more design thinkers according to the demand in various industries and the dynamic market so there is an urgent need to introduce design thinking as a subject in majority of the universities, colleges and institutions.

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ABOUT THE AUTHORS



Dr. Meenakshi has more than 15 years of experience in teaching, training, research and corporate in the area of HR & OB, Values & Ethics, and as a Motivational and PDP Trainer. Presently she is working as a Dean (Research) in Trinity Institute of innovations in Professional studies (Affiliated to Indraprastha University). Her Ph.D. thesis is entitled "A Study of Leadership Effectiveness in women executives in Context of Delhi Based business organizations" has brought relevant theoretical and empirical imperatives on leadership development strategies among women leaders and executives. She has also rendered education as a professor with several reputed Institutions as NDIM, Amity University, Delhi Business School, ICFAI Business School She also worked as a guest faculty and Trainer in Indian society for training and development (ISTD), New Delhi for six years.



Dr. Ravindra Kumar earned his Bachelor degree in Civil Engineering from University of Roorkee (Now IIT Roorkee), Masters Degree in Design Engineering from IIT Delhi and again Ph.D in Fire Safety Assessment and Design from IIT Delhi. He started his career in Ministry of Water Resources as Design Engineer and produced numerous design on prestigious Indira Sagar, Sardar Sarovar, Bisalpur Dam, Salal projects. Later on he moved to academics and worked as Professor, Dean, Director in many institutions. He also provided consultancy to develop many engineering and management institutions as Greenfield projects in NCR region. He designed and conducted many innovative FDP programmes for engineering college faculty. He is one of the leading fire safety design expert in the country and currently working as Director, Trinity Institute of Innovations in Professional Studies, a leading GGSIPU affiliated college in Greater Noida.



Manu Kaushik is a BA Hons Journalism student at Maharaja Agrasen College, Delhi University, Ganpati Mandir Marg, Vasundhara Enclave, Delhi, India. He has participated seminars and workshops at National level.
