



Management of Design Thinking and Growth in Product-Service Designs

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ABSTRACT

The research paper deals with the study of products and services and its design thinking. Design thinking is one of the major branches of sciences that is fast developing with the economic development of nations around the globe. Design thinking could also be considered as a core human-centered, problem solving, and creative solutions to human living. There is a progressive modification of designs in the improvements of components both inside (functional components) and outside (aesthetics) of product-service design. The purpose of this study is to identify and understand the elements and the importance of design thinking and its implications in the management of design in products and services in organizations. Designs are the impact of the previous designs and the influences of human thinking on designs. Progressive learning on design thinking promotes a better understanding of consumer satisfaction. The methodology of the study was done with an observation method of product-service designs with a minimum of five years. The products considered are in the area of electronics (computer, mobile phones), service institutions, automobiles, road constructions, and houses. The data collected were of two categories, design patterns of aesthetics and functional components. Findings show there is progressive learning of human of physical factors on structural configuration and preferences relating to human physical, cognitive, spiritual and social need fulfillment. Designs fundamentally originate from human mind for ease of life (convenience), human behavioral factors, and structural implications. Design origins imply an understanding of consumers' preferences by producers. Better designs generate demand. The inducement of designs in products and services improves consumers' satisfaction. Further study could be undertaken on design functional thinking. Discussions on design thinking highlight design aptness in daily living, acceptance of design is subjective rather than objective, cost and design, creativity and design and the scope of design.

Keywords: Design Thinking; Product-Service Designs; Management Of Design.

INTRODUCTION

Thinkers think thinking, in thinking, thinkers think design. Design thinking is the manifesto of human living. It is a great delighted thought of my mind to understand thinking design is a deep level introspection of human brain. The escalation of all our human skills leads to the input of one's view of eyes, ears, nose, tongue, and skin predominately construed by inferences

associated with one's reality created in a picturesque realism of what is truth about the magnanimity of this magnificent authenticity of human in his/her brain.

Design thinking is relatively the actual of everything in every day living. Human mind basically works on designs that are far more complicated than what we could actually think of. It is the finest discipline that one could ever identify. Object based learning which is just opposite to text based learning. But this area is not well developed as a discipline or a major area of studies. Only for the purpose of production, design thinking and its management is used. It comes so naturally that we don't even have the urgency to think of having as a separate discipline t comes so naturally that we don't even have the urgency to think of having as a separate discipline (Cousins, 2018). We live in a world that needs a dependency on 4D living than 3D or 2D. The reason why we often live in 2D and 3D is simply because we are more of physical in what we see rather than what is behind the invisibles. Let me give a fair explanation about the Ds'. D stands for dimension. The first D represents physical dimension. The second stands for mental or cognitive dimension. The third stands for social dimension. And the fourth stands for spiritual dimension. By using these we get the most complex structural configuration that could stand at any harsh situational conditions. One researcher has attempted to bring 150 personnel from different disciplines to think about how integration of design thinking be integrated to every discipline (Maher, Maher, Mann, & McAlpine, 2018). Actually we are trying to integrate design thinking into every discipline, but we are attempting to see the way how design thinking is integral part of all disciplines.

Aim of the Study

This paper attempts to find out the managerial aspect of design thinking and growth of product-service design.

The Problem Statement/Definition

Design thinking of products and services are highly volatile. It is overtly related to the growth of product-service designs as an ongoing process. What is the right formula to be used by a company? Is there such a thing as a formula? Or one should innovate it? If one innovates, what are the reference points? The world would be much easier if it has all the formulas. But we don't have one. This calls for a research as how design thinking works in the production of products and services.

If entrepreneurs attempt to formulate methods for all, it would be a vain attempt. Because, formulation is based on the reality and it must be studied with existing or previous designs of products and services in a market on a timeline. Through the study of existing product-service designs, design thinkers are to be enabled to study different structures involved in the design thinking. The structures includes product-service functional intertwined with aesthetics, user structure(s), structures of place or object when in use and structures of storing in case of tangible goods when not in use. With an exceptional for service design limited to the structure of service points and objects, equipment or tools used while service being provided to the customers. Design thinking is full of structural reality.

By constantly identifying and scanning these structures will exponentially improve the management of design thinking for product/service managers in promoting case of product-service use for effectively satisfying the need.

Design thinking is a demanding area for a multinational company like Infosys. They train the workers in design thinking for the company's growth. Design thinking for this company is a fundamental aspect (Vishal Sikka, 2014). Innovation of perish is directly connected with design thinking and how design help in managerial implication of a company's progress (Liedtka, 2014). The need for design is been there for the beginning. The use of design was always with the human caliber that was taken for granted hidden under intuitive rather than a rational decision making process for perceptual knowledge. Design thinking in an organizational culture is an implementation of a problem solving tool (Elsbach & Ileana, 2018). There is a lapse of time in learning a specific design because of the pattern of tedious learning. Thinking design is not hard for human brain. It is as natural as breathing. But the education systems around the globe is at fault. Fault in have unnecessary stages a learner has to undergo while learning. The conversion of text to pictograph by the mind is not natural humans. It delays the understanding of the whole matter. But the acceptance of picture of an event, people and object removes the delay of understanding and creating a better picture faster, easier for a grand perception.

Purpose of the Study

The purpose of the study is to identify and understand the elements of design thinking and its importance to managers' to manage designs in products and services.

LITERATURE REVIEW

Thinkers think the blue print of the thinking mechanism. Design thinking is much spoken lately in the history of mankind and it was always there as a handiwork of the human brain. The brain's input to the platform (Brain's ability), and the output of the platform (Brain's ability of inferences to action) was always a design. Insignificant to say, is our realization of that prominent truth on design input and output of the human brain with distorted perception of the tools used in the education of the brain by the so called educators with scripting it. Why this didn't come out earlier as it is now? These are reality of the affected brain of the collective mass. Throughout history, various thinkers pointed out the direction of the history to be created in the violent mind the designs of limited thoughtless beings to adopt with their selfish nature to move the people with their leadership's conceptual ideology (Manning & Curtis, 2018).

There is an urge and compelling need of design thinking from those who have engaged in manufacturing products and services to introduce and train their workers on design thinking (Leavy, 2010). Thinking design could be varied in length and depth of its scope when considering its discourse. Though there are different categories of design thinking, the overall platform that is connected to these categories is human living. Management of human living of internal, external and universal, all depicts design (Johansson-Sköldberg, Woodilla, & Çetinkaya, 2013). Organizational management is purely connects to product-service design thinking which includes creativity and innovation. Even these, creativity and innovation are designs of life (Johansson-Sköldberg et al., 2013).

Design thinking philosophy that pops out of individuals are purely the connection of facts of its connecting elements to tools, equipment, and framework (Gobble, 2014). I would like to add more to it by showing the hidden elements. If tools, equipment and framework are only a part of the whole. Design of thinking the product-service design results from the prominent need that is spoken loud in a target market. Another form, when humans continuously work the goals set, they identify needs that arise to fulfill the goal(s). This could be either at the planning/formulation or implementation stages. The Human ability to do the goal (all these activities) enables a design capture of human functioning of goal setting and accomplishment. In other words, goal setting/formulation, goal implementation in satisfying consumers' need is also a design. Need satisfied customer grow to a level higher, this is also a design. They capture design and create design in product-service development. Designing designs, to design designing. We as human beings possess highest form of design tackling ability which is innate

METHODS

The methodology of the study was done with observation method of product-service designs with minimum of five years. The products considered are a) mobile phone – Apple b) service institutions – Airport service facilities c) Automobiles – varied data of advanced features d) road constructions and e) Modern houses in cities. The data collected were of two categories, a) design patterns of aesthetics and b) functional components of products.

The reasons for design outputs in products and services are considered in this research are namely, a) ease of life (convenience) – design thinking that induce efficiency or convenience of using the products or services.

b) Human behavioral factors – human physical, cognitive, spiritual and social need fulfilment.

c) Structural preferences – Design thinking that understands the physical structure of human when using the products or services.

The overall perspective of the factors influencing human living is significant in design thinking products and services need fulfilling factors should be considered (Jayakody, Keraminiyage, Alston, & Dias, 2018)

RESULTS

No	Products/service considered			Ease of Life – Convenience Increased	Human Behavioral Factors	Structural preferences
	Factors	2014	2019			
1	Apple	iPhone 6/ 6 plus (“Compare Apple iPhone 11 Pro Max vs. Apple iPhone 6s - GSMArena.com,” n.d.)	iPhone 11 Pro Max (Phones, n.d.)	<ol style="list-style-type: none"> 1. OLED display-brighter 2. A13 Bionic CPU fastest around 3. Stellar triple cameras with night mode 4. Durable design 5. Fast charging 	<ol style="list-style-type: none"> 1. Better performance 2. Fast access 3. Better pictures 4. Design aesthetics 	Designed for efficiency and ultimate product handling
2	Airport Service Facilities	No. 1 (2014) Singapore Changi Best amenities, B Garden (“The World’s Best Airports 2014,” n.d.)	No.1 (2018) Singapore Changi	<ol style="list-style-type: none"> 1. 200 Destinations 2. 5000 arrivals and departures a week by 80 international airlines (“World’s Top 10 Airports 2019,” n.d.) 	60-70 million passengers in 2019	World’s best Airport leisure amenities
3	Automobiles	No. 1 (2014) Toyota Motor Corp (“List of manufacturers	No. 1 (2019) Toyota	\$240 billion as annual revenue in 2018 (“Top 10 Automobile	365,000 professionals	Five top-selling car brands

		by motor vehicle production,” 2019)	Motor Corporation	Companies in World,” 2018)		
4	Road Constructions	The construction of roads were better than earlier because it is one of the elements of any countries infrastructure.	Stanley Road Construction	Quality Durability, Ease of driving Best Reputation on road efficiency (GenieBelt, 2018)	High quality roads that provides safety, convenience of travel, speed, to accommodate more volumes	Bitumen sealing Minor civil works Road profiling Asphalt surfacing Civil construction Placement of gravel and CTB’s
5	City houses	Constructions were based on modern amenities and customer demand. Structures for performance.(“ Building capabilities for performance McKinsey,” n.d.)	Top efficient homes	Light, warmth, ventilation, energy and cost savings, room orientation, materials, insulation, heating and cooling, skylights, doors, appliances, water heating, in all these energy efficiency is integrated (“Energy-Efficient Home Design,” n.d.)	Better movement and living of indoor activities	Efficiency in living

Reporting Research Results

The above results presented are considered as one of the top most products and services available in the world today. These considerations were made based on the availability of data. A constant comparison of the products/services with their competitors has lead the researcher to decide based on rational, intuitive, and bounded rationality to determine the right alternatives to be considered in this research. The profound reason for such a decision making is to identify the main design influencing factors that are considered by the many market leaders (companies). The research results are based on a) ease of life (convenience) b) human behavioral factor c) structural preferences.

Findings show there is a progressive learning of human physical factors of structural configuration and preferences relating to human physical, cognitive, spiritual and social need fulfilment. The researcher also considered the aesthetic design elements such as color design,

texture design, shape design, pattern design, visual weight, balance, scale design, comfort design, price design, temperature, and others. On the functional aspect – benefit delivery process design, function creation of an object, functional orientation, and user-friendliness of products and services. Interestingly, one could find in the product launch events of a company's latest product(s), the aesthetic is unspoken due to a greater focus on the functional aspect ("September Event 2019 — Apple - YouTube," n.d.). This way is an apt move by organizations on satisficing consumer need optimality on the functional aspect and allow the consumers' to see the aesthetics for themselves (Byron, 1998) (Stirling & Felin, 2016).

Findings show there is a great need for the existing products and services to create greater ease of life, human behavior factor and structural preference in the design thinking of products and services. 1) apple mobile phone design thinking – high speed, greater clarity, durability, quality, more details, ease of complexity, 2) Airport service design - maximum destinations, many arrivals & departures, airport facilities in case of airport services, 3) Automobiles design - good quality, durability of automobile as shown in the revenue of the company, automobile internal comfort and facilities convenience 4) Road designs - best road efficiency in terms of quality, durability connected to the structures of vehicles, safety, travel convenience, road amenities, able to accommodate conveniently current traffic volume, 5) house construction design is directly proportionate to the need of human, products, services structures to be accommodated in the design of the house.

DISCUSSION

This research was done to identify and understand the elements of design thinking and its importance to managers' to manage design in products and services. The main contribution of the study was the identification of the design thinking totally related to human domains of living, viz., physical living, cognitive living, social needs, and spiritual living. These four major domains are easily seen in the design thinking. Earlier it was identified, that human thinking is always design thinking. Because, thinking is predominantly with the designs for living. This is a constant rhythm of doing, human activities are design activities, and human growth is design based and a clarity of alignment to the human structure and surrounding structures. The best design thinking is the accurate alignment of the structures related to the product and services. This design is constantly growing as shown in the data about the design efficiency in physical, cognitive, social and spiritual structural alignment.

If we examine thoroughly, there is not much of the products and services designed to sufficing human cognitive, it is very minimum. Designing the design of brain is only from the nature and when examined the yesteryears' products and services, we see the limitation and the rectification of these limitations leads to growth. Features and factors that weren't thought when incorporated achieves growth in products and services.

Conclusion

The research findings reveal that there is a significant relevance of designing thinking to ease of living (convenience), human behavioral factor, and the structural implications. Design of every product abide by these major elements for satisficing of needs. Consumer perspective on satisficing of needs refers to the right product that satisfies with specific details (Chandra Prabha, Aberystwyth, Lynn Silipigni Connaway, & Aberystwyth, 2007). Sometimes when organizations cannot consistently go with satisficing consumer preferences due to lack of optimality in design rationality (Byron, 1998). The growth of design thinking is predominantly at learning of the structures connected with structures associated to human living. Entrepreneurs identify the limitations of their existing products related to consumers' needs, they tend to rectify with elevations in many ways. This phenomenon is known as management of design thinking growth.

Managing design thinking is the level of awareness of needs recognized by the target group and a reciprocate the need through an alleviation of benefits in relation to the structural elements. Further study could also be considered on the line of design thinking on the functional aspect.

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