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Souleman Tienkwia Pechonjeh

How can Design Thinking be used to Improve Customer Experience?

Case Study: Design thinking in IBM

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The purpose of this study was to identify how design thinking can be used to improve customer experience, using International Business Machines Corporation (IBM) as a case study. IBM is a technology company that operates through five segments: Cognitive Solutions, Global Business Services (GBS), Technology Services & Cloud Platforms, as well as Systems and Global Financing, and has many customers and users of their products.

This study predominantly used the case study research method. It narrows down the research area to solely investigating how design thinking philosophy help customer experience. Secondary interviews of key IBM leaders are used in the research. Equally, published design thinking articles involving IBM are used in the research.

The result shows that IBM is committed to design thinking and this, in turn has improved the customer experience with IBM's products and services. Typically, customer experience can be improved by design thinking through the combination of compassionate design thinking, socially conscious design, and psychological measures. Customer experience can be enriched when there is proper thought behind the service rendered or goods created. IBM uses the combination of the Principles, The Loop, and The keys

As customer experience can always be improved, it is recommended that IBM continue to commit to its design thinking philosophy.

Keywords	Design Thinking, IBM, Customer experience

Contents

1 Introduction

In today's business world, competition among companies is rife, and there is the continuous strife increase customer base. The bid to secure or possibly attract customers has led to innovation among companies, and that partly, has made design thinking an increasingly popular phenomenon in business cycles today. On the one hand is the attraction of customers, and on the other is giving the customers a worthwhile experience to possibly retain them. When customers are gained, businesses are concerned about how they are retained, and made to be loyal to the business. Customers are, thus, treated well to make them have pleasant experience. Customer satisfaction and profit making are then, consequently, linked. Profit can be made by businesses when customers are satisfied, have positive experience, and are potentially retained. One can therefore assert that customer experience and profit are two sides of the same coin.

It is then fair to argue that companies must keep on developing mechanisms to satisfy their customers through sales thereby generating greater profits. One of the ways to stay ahead of competition, potentially, is to adopt design thinking. As the name presupposes, design thinking entails, amongst other things, strong use of ideas outside the conventional, traditional methods. The overall aim of design thinking is to create new ideas and products when the traditional methods of production seem stagnant. Dunne and Martin (2006) argue that practitioners are often encouraged to think deeply into problems, profoundly understand their target user, and enable the contributions of other diverse views all in the bid to finding solutions to complex problems.

This thesis, as such, delves into the world of design thinking using theoretical analysis of some key concepts and answering key questions as to what, how and to what purpose design thinking should be used. With a particularly use case of IBM. Combined with positive customer experience, design thinking can be a way business can stay ahead of competition and sustain profits. Using IBM as a case study, a dual descriptive and case study approach will be used in this thesis to drive home the possibility of improving customer experience via the use of design thinking. This thesis hope to demonstrate this

possibility (of the fusion of design thinking and customers' experience) in several sections, incorporating expert interview.

The framework of this thesis includes analysing how IBM incorporates design-thinking into its business and how such processes are being rewarded with organisational reforms that go a long way to drive innovation, growth, and customer satisfaction.

1.1 Research Approach

This research offers theoretical and descriptive analysis of design thinking and how it is being used in modern day business to improve consumer satisfaction, with the main example steaming from IBM Corporation. As the focus of this thesis is on design thinking, other related concepts like marketing, consumer behaviour, customer satisfaction, competition, cooperate philosophy, openness to new cultures, adaptation, and flexibility, all form a formidable background and literature as to why firms and businesses use design thinking. Ideally, this proposition will give comprehension of the above trends particularly with the assistance of maps, figures, and table analysis.

1.2 The Research Motivation

The inspiration for this paper stems from SAP seminar lectures that was organized by FI SAP Next-Gen sometimes in the spring of 2019. The lectures aroused my curiosity about customer satisfaction and design thinking. It was perhaps the first time I got introduced to the concept of design thinking. Somewhere along the lecture, there was the part that discussed design thinking with reference to Roger Martin's work specifically. The idea of the possible fusion of design thinking and customer satisfaction and experience sounded interesting. Therefore, based on my interest in modern technology and how Markets and innovation are fast growing, I decided to investigate what can be done to overcome uncertainty, or unpredictability that society is facing today, going into the consumer mind and thinking ahead of competitors in regard to consumer behavior, products and services and the relationship between customers and marketers.

1.3 Research Question

Sewing the three important concepts – customer experience, design thinking, and IBM together is central focus of this thesis. The thesis hopes to use IBM as case study in understanding how the use of design thinking can potentially improve customers' experience. The main research question is thus *'How can design thinking be used to improve customers experience'*?

1.4 Research objectives

The central objectives of the thesis, at the minimum, is to be able to identify the interrelationship of Marketing, Consumer behavior, Customer service, Design thinking and IBM. Specifically, the research objectives and how all of these can improve customer satisfaction. The thesis hopes to answer pertinent questions about design thinking, its tools, and models and how they can spur positive customer experience; the interrelations between design thinking and concepts like marketing, consumer behavior, customer service; and how specifically IBM implemented design thinking in its products.

i) *How exactly can customers satisfaction be improved by employing design thinking methods or model?*

ii) *How exactly can design thinking influence marketing, and influence consumer behavior, and how user experience be improved via design thinking?*

iii) *How was Design Thinking implemented in IBM?*

As per the first research objective, one of the major questions I intend this thesis will answer is the connection of design thinking and customer service. Thus, a research question is posed '' how exactly can customers satisfaction be improved by employing design thinking methods or model?''

Secondly, it is intended that this thesis will explore the possibility of highlighting the relationships between design thinking and customer satisfaction, while examining related marketing concepts like customer behavior and customer service.

Thirdly, I hope that the case study of IBM can be used to have a closer examination about how design thinking can be used in a real-life situation of an already established company, particularly a multinational of IBM status.

2. The Concept of Design Thinking

As the concept of design thinking evolves, there have been different attempts at giving concise definition of design thinking. In major parts of the attempts at the definition, recurring elements in the various definitions include the setting goals, orientation, process, and participation. The typical goal of design thinking is to be able to give solution to known present problem or future problem. This goal of problem-solving emphasizes the whole concept of design thinking. The orientation of design thinking is geared towards the end-users. The process is on a 'structured and interactive processes', while the participation in design thinking is usually a multidisciplinary approach incorporating participants from many backgrounds. As businesses intend to succeed in the journey, there is the need to answer some pertinent questions like 'who are my customers, who are the eventual end users of my product or services, how can the needs of the customers be met, or how can I put my customers in the center of my product and services?' Design Thinking, somewhat, helps to answer exactly these questions. In an attempt to explain the concept of design thinking, Schallmo *etal*, (2018) develops a seven-phase Roadmap, each containing objectives, activities, tools, and examples. More information about the roadmap is given later in the thesis.

Historically, at the turn of the second half of the 20th century, there were marked frictions in creative processes between participants of creative process, for example, designers, engineers, and other representatives of other disciplines. One reason for the friction is because of difference in educational background and thus conflicting approaches to solving problems. These differences in background also affected the way solutions are preferred in the creative process. One of the ways to solving the stalemate is to divide extensive questions into subgroups. (Plattner et al., 2009, P. 60). Fundamentally, as solutions are preferred in chunks, the bits and pieces are combined. This process provided a platform for all the bits and pieces to be the body of solutions. Applying iteration to the process in other to improve the solution, ultimately improved knowledge. (Plattner et al, 2009, p. 60; Schallmo et al, 2018, p. 2).

3. Literature Review

The literature review examines theories about design thinking and associated themes that surround design thinking. Discussion is done on subject matter as Marketing, Consumer Behavior, Customer service and Design thinking. Design thinking goal is to incorporate delivering consumers desires and wants to a designed process that looks to reduce failure and excite. To delve further into design thinking, it is important to review consumer behaviour and their rational mind in choosing products and services which leads us to discuss basic marketing theories.

3.1 Definitions of Design Thinking

As mentioned before, there are various ways to define the concept of design thinking, and numerous authors have tried to place the definition in a structured manner. Thus, because of the different approaches and interpretation of the concept of design thinking there seem not to be a commonly accepted definition. This section tries to mention few authors that have attempted defining the concepts of design thinking Ideo (2012) ''defines design thinking as believing in making processes in order to get new, vital solutions to create impacts. Curedale (2013) characterizes design thinking 'as a group focused method of taking care of problematic issues.' Mootee (2013) in the endeavor to highlight the multidisciplinary nature of design thinking, defines it as the 'look for an enchanted harmony among business and arts structure and chaos, institution and logic, concept and execution, playfulness and formality, and control and empowerment''. Erbeldinger and Ramge (2015) defines design thinking as 'innovative thinking with n radical, user-orientation, lastly Platter et al (2009) define design thinking as 'a methodology that is a systematic, user-oriented approach to deal with tackling real-life problems.

The diverse approaches to the definition of design thinking shows that design thinking could be approached from diverse perspectives, but ultimately comes down to the ability to solve problems. As highlighted above already, some recuring features like goal setting, orientation, process, and participation can be derived from all the definitions. Evidence from the mentioned authors above also indicate that there is the possibility to explain design thinking in a structured manner. Viewed from different angles, design thinking can

be defined differently, and table 1 below attempts to highlight the different definitions in a tabular format.

Author	*Definition*
Plattner et al., 2009	The Design Thinking approach is a systematic, user-oriented approach to solving real-life problems. Instead of focusing on how the problem can be technically solved, the main focus is addressing the user's needs and requirements.
Erbeldinger & Ramge, 2015	Design Thinking […] is innovative thinking with a radical, user-orientation. It is based on the interdisciplinary principle and connects the attitude of openness with the need of results.
Mootee, 2013	„Design Thinking is the search for a magical balance between business and art, structure and chaos, intuition and logic, concept and execution, playfulness and formality, and control and empowerment".
Curedale, 2013	„Design Thinking is a people centered way of solving difficult problems. It follows a collaborative, team based cross disciplinary process. It uses a toolkit of methods and can be applied by anyone from the most seasoned corporate designers and executives to school children".
Ideo, 2012	„Design thinking [sic!] is about believing we can make a difference and having an intentional process in order to get new, relevant solutions that create positive impact. Design Thinking gives you faith in your creative abilities and a process or transforming difficult challenges into opportunities for design".

Table 1: Definitions of Design Thinking from select authors. Source: Schallmo *et al*, (2018, P 4)

3.2 Principles and Roadmap of Design Thinking

Each of the papers of the authors has a unique structure of design thinking. This means that each of the approaches has distinct principles of design thinking, procedure model, and the techniques and outcomes. Thus, in this sub-heading, there is an attempt to itemized what constitute the principles of design thinking – and in the process, lists the techniques and outcomes from each of the approaches. Finally, there is the integrated roadmap of design thinking. It is worth mentioning that one or more of the authors may not explicitly mention the principles, but principles are implied. For example, Liedtka & Ogilvie (2011) do not show any design principles but illustrates their approach by listing four phases and ten techniques of design thinking. In this example, the design thinking is inferred and illustrated via other means. However, the overwhelming number of the rest of the authors give the principles of design thinking, as well as procedure and techniques for their design thinking approach.

First off, perhaps the most popular of the approaches is from Tim Brown (2008). Just like Liedtka & Ogilvie (2011**),** Tim Brown's approach, from his Harvard Business Review article, does not explicitly explain the principles of design thinking. However, in practical sense, Tim Brown (2008) gave 'recommendations' on how companies can use design thinking, internally within their companies. These recommendations can be inferred as principles, in this instance (2008, p 90). The recommendations include integration of design thinkers, user centricity, experimentations, external knowledge, project monitoring and tracking, budgeting, interdisciplinary teams, and complete running through. Figure 1 gives the list of the recommendation, in a bullet-points format.

- Integration of Design Thinkers: Design Thinkers should be involved in the process right from the start.
- User-centricity: Orientation towards the needs, preferences, and behavior of users makes it possible to gain new insights and align solutions to them.
- Performing experiments: Experiments should be carried out early and often.
- Integrating external knowledge: Users should be integrated into the development.
- Track projects of any size: Both incremental, short-term projects revolutionary and long-term concepts should be implemented.
- Definition of budgets: Design Thinking can be a fast and meaningful result available in a short time that should be marketed. A suitable budget must be available for this purpose.
- Building interdisciplinary teams: To this end, employees should be sought at suitable universities.
- Run through the process completely: Only if the process is completed can the hoped-for results be achieved.

Figure 1: The Tim Brown recommendations/principles of design thinking. Source: Schallmo *et al,* (2018, P 6)

On the one hand is the principles, on the other, the procedural model. Tim Brown (2018) proposes three phases - inspiration, brainstorming, and implementation. By inspiration, Brown (2008) means that companies need to understand the environment they operate, alongside understanding the strengths, weaknesses, opportunities, and threats associated with the environment. This holistic understanding of the environment allows for defining the problem and mapping out strategies for the solution. Schallmo *et al*, (2018, 7 4). The brainstorming phase include the process of acquiring, developing testing of ideas. To generate ideas, sketches and mind maps can be made, and when prototypes are developed, the needed to be tested with the eventual users involved in the testing. Finally, the implementation phase involves the executing of the tested prototypes. It is worth mentioning that the phases are interconnected and can be iterative, not necessarily linear. Schallmo *etal*, (2018, 6). Another highlight of Tim Brown (2008) is the silence about techniques and results, unlike others. However, in the approach of Ideo (2012), familiar techniques like brainstorming, questionnaire, interviews, field research are touched upon. (Ideo, 2012, P. 40)

The outright specifics of Liedtka & Ogilvie (2011) approach include ten techniques and four phases. These techniques and phases are somewhat relatable, as they are gleaned from personal experiences in teaching and consulting. As said earlier, Liedtka & Ogilvie (2011) do not have clear-cut principles but have procedural models and techniques. The model explains ‘’what is?’’, ‘’What if?’’, ‘’what wows?’’, and ‘’what works?’’ Each of these phases or models correspond to the steps of elucidating how design thinking can be carried out. For example. The ‘’what is’’ phase tries to analyze the current situation, while ‘’what if’’ shapes the future, ‘’what wows’’ corresponds to making decisions, and ‘’what works’’ relates to marketing. Schallmo *et al*, (2018, p. 19). Alongside the techniques are four tools that are advisable to be used in each of the phases – *Design Note, Design Criteria, Napkin Pitch, and Learning Guide*. The ten techniques are summarily shown below in figure 2.

Techniques

There are ten techniques that are explained in detail and assigned to the four phases. The techniques include (Liedtka & Ogilvie, 2011, p.45):

- Visualization: Transformation of information into pictures, sketches, narratives etc.
- Journey Mapping: Representation of the interaction of the user, while this contains products or services of the company.
- Value Chain Analysis: Analysis of the company's interactions with partners is necessary to create, market and distribute services.
- Mind Mapping: Structuring of a large amount of information that was previously collected.
- Brainstorming: Gaining ideas, especially alternatives to the status quo.
- Concept Development: Selection of the best ideas for brainstorming, description as detailed concepts and evaluation based on users and company criteria.
- Assumption Testing: Examination of assumptions regarding the described concepts and selection of promising concepts.
- Rapid Prototyping: prototypes are created for selected concepts. Drawings, functional prototypes and market test prototypes can be created.
- Customer Co-Creation: Integration of potential users into the development of service offerings.
- Learning Launch: open assumptions about the range of services are tested on the market in the form of an experiment.

Figure 2: Summary of the ten principles of Design Thinking by Liedtka & Ogilvie (2011). Source: Schallmo et al, (2018, P 12)

Combining the ideas together, there can be an integrated approach towards design thinking. So Schallmo et al (2018) develop this integrated approach for design thinking that includes basic principles and Roadmap. The principles include human needs as the starting point, multidisciplinary teams, iterative process, and creative environment. Each of these principles, as their names imply, connects to the very core of design thinking. For example, the principle of humans as the starting point stresses the fact that 'people are the source of inspiration for new ideas. Furthermore, the principle of multidisciplinary teams emphasizes the need to be optimistic, empathetic, integrative, experimentative, and cooperative.

On the other hand, alongside the basic principles, the roadmap incorporates the ideas about design thinking. They include defining design challenge, understanding design challenge, defining perspectives, gaining ideas, developing prototypes, testing prototypes, integrating prototypes. The theoretical and diagrammatic representation of the roadmap is presented below in figures 3 and 4 respectively.

Roadmap

A Roadmap is given here based on the presented approaches to Design Thinking and based on existing theories about Design Thinking, the Roadmap for Design Thinking is explained as follows:

- ***Defining Design Challenge***: First of all, it is necessary to derive different subject areas. The different subject areas are discussed, in order to then commit oneself to one particular subject area. A Design Challenge is formulated for the selected topic area, which is to be answered. Typical users are also defined. Subsequently, a project plan is drawn up, which includes deadlines, costs, and results.
- ***Understanding Design Challenge***: In this phase, it is important to build a common understanding of the Design Challenge to be accomplished. For this purpose, typical users are analyzed in relevant situations and with the problems they have to cope with. This analysis is carried out by means of a survey and observation. Existing solutions that are available on the market are tested and experts are interviewed to build expertise on the Design Challenge.
- ***Defining Perspectives***: In this phase, it is important to build a common understanding of the Design Challenge to be accomplished. For this purpose, typical users are analyzed in relevant situations and with the problems they have to cope with. This analysis is carried out by means of a survey and observation. Existing solutions that are available on the market are tested and experts are interviewed to build expertise of the Design Challenge.
- ***Gaining Ideas***: In this phase, ideas are gained through the use of creativity techniques that are intended to meet the previously identified needs. These ideas are grouped and revised. The ideas are then described and evaluated.
- ***Developing Prototypes***: The ideas gained serve to develop prototypes. A prototype thus represents a solution to the challenge described. Prototypes can be developed in different forms. Following the development of prototypes, these prototypes are improved and combined.
- ***Testing Prototypes***: The different prototypes are presented to the users and then tested with them. The aim is to gain important experience, also with regard to the use of prototypes. Prototypes are also tested in the market. The experience gained is then used to improve and further develop the prototypes. Based on the evaluation of the prototypes, a promising prototype is selected.
- ***Integrating Prototypes***: In this phase, a uniform grid is used to develop a business model that integrates the prototype for a product or service. Thus, a business model with the following five dimensions is available: customer dimension, user dimension, value-added dimension, partner dimension, financial dimension.

Figure 3: Theoretical explanation of the Roadmap for Design Thinking. Source: Schallmo etal, (2018, P 16)

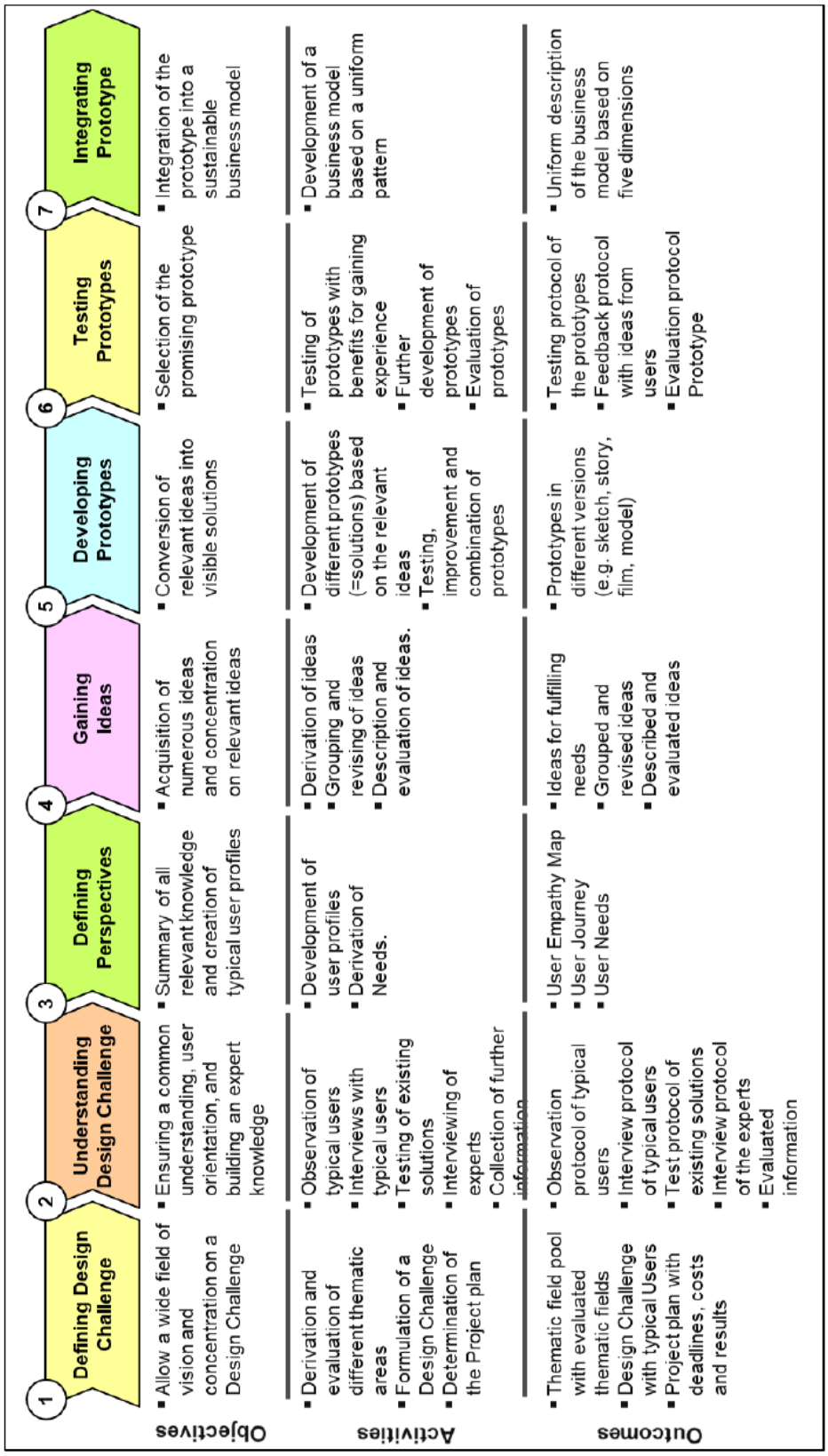

Figure 4: The Roadmap for Design Thinking. Source: Schallmo et al, (2018, P 17)

3.3 Tools and models that aid customers' experience

There are numerous methods or ways when design thinking can remotely or immediately impact on the customer experience of clients. As more companies are increasingly trying to provide for positive experience for their customers, they are involving more design thinkers in the process of developing their customer experience program. Service designers for example need to draft or sketch a plan using feedbacks from customers then design experts will then design technology meant for the project based on customers feedback on their positive experiences. Understandably, design is a business building activity, and as such the investments done in design thinking potentially leads to considerable modest returns. For example, McKinsey & Co finds that companies that have design practices embedded in the companies have better revenues by an average of 32% point over those that do not. Improving customers' favorable experience, just like managing successful business, cannot be left to chance, unplanned. It cannot also be left for coincidence. There is the need for design thinking and planning.

A viable way of improving customer experience is by leveraging technology. For example, companies like Samsung, LG and similar companies typically use outcomes of customer experiences in developing products. It is also not unusual for companies to have a beta version of a would-be products and services, in getting an initial customer need, and using the technology to better customer experience. So smart phones, via apps, electronic gadgets as leveraged by technology can be used as a way of improving customer experience. Major technology companies are increasing the designers they employ to increase the profitability. The infographics below show how customer experience and revenues can be improved by design thinking.

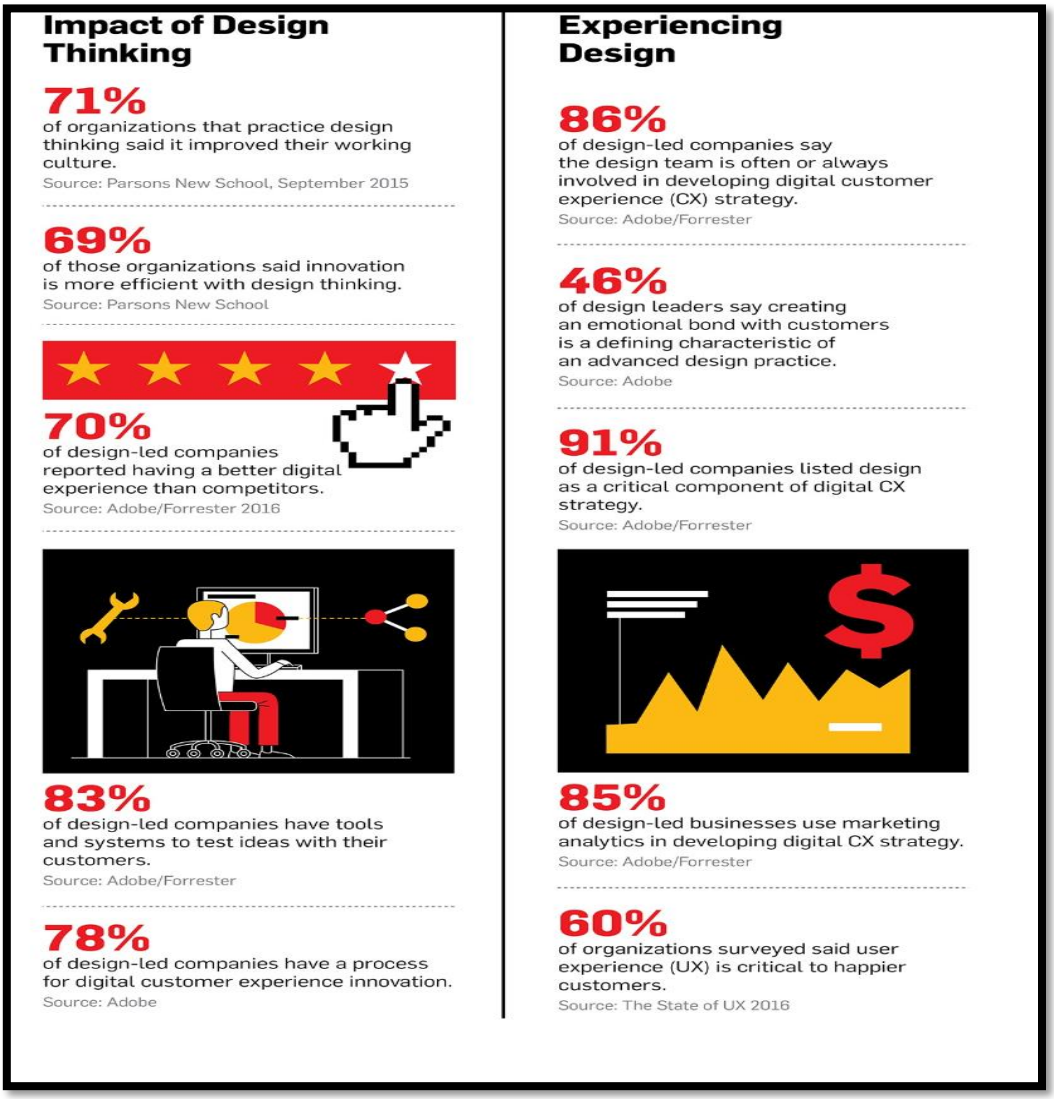

Figure 5: How Design Thinking can improve business bottom line (hubspot.com, 2018)

Customer experience, via design thinking, can add to the business bottom-line, and ultimately the customers' satisfaction. A veritable example on how technology can be leveraged to improve, and loyalty is the story of Taguchi experience. Whilst Modi Xeros, at that time, a member of the Rank Xerox group of companies (UK) had a terrible experience of field failure of their photocopy machines – with many reported blurry patterns in copies produced, they resorted to design thinking and technology to resolve the problem and regain customer satisfaction that was lost. As a leading copier manufacturer, the immense pressure to regain the lost customer trust and satisfaction was overwhelming, as understandably, poor copy quality not only disappoints customers thus customer dissatisfaction. Design thinking is about solving problems, and being

customer-centric, the problem was subjected to serious brainstorming and design thinking process.

Apart from technology, customer experience can be improved by design thinking through the combination of compassionate design thinking, socially conscious design, and psychological measures. (Seshadri, 2018). Compassionate design thinking, as the name suggests, involves the part of designing that elicit some emotional well-being of the eventual user of the product of service that is designed. So, while there is the focus on the functionality of the intended product of services planned or designed, there is the additional concern for the emotional well-being of the users. Typically, when design thinkers are doing their jobs, often, there is limited concern about other aspects that evoke emotions – dignity, empowerment, and security of users. When design thinking extends to cover emotional areas, then that is compassionate design thinking. (Seshadri, 2018, 30). Similarly, socially conscious design thinking, just as the compassionate type, also emphases the need for social consciousness. Coupled with psychological understanding of design thinking, the trio eventually help to improve the customer experience.

In addition, Fraser (2006) itemizes seven steps to design that can eventually lead to innovation, and sustained success. The steps include making long-term commitment, building sign into the organization strategy, assigning a leader that is not limited into a function, collaborating and internalizing, inspiring (and not only legislating), feeding and rewarding design, and getting started. These steps align with the ways that design can improve not only marketing but also customer experience.

3.4 Marketing

As indicated by Philip Kortler, Marketing is a science and specialty of exploring, making and delivering significant services to fulfill the necessities and needs of a particular market at a profit. Marketing recognizes unfulfilled necessities and wants. It defines, measures, and evaluates the size of the recognized market and the maximization of profit. Marketing features which areas organizations can serve best, and it plans and advances the appropriate products and services to fulfill the need of the market. (Kortler and Amstrong, 2011 :5)

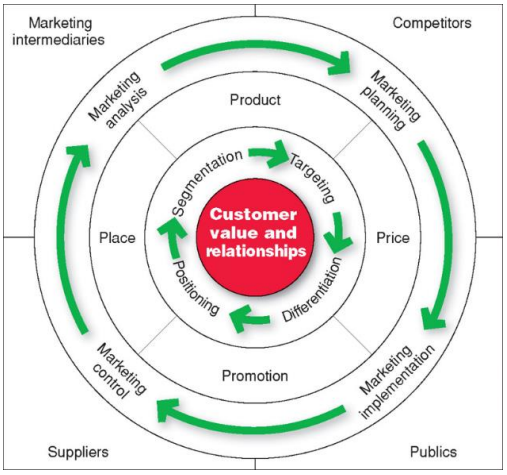

Figure 6: Managing Marketing Strategies and the Marketing Mix (Kotler and Armstrong, 2010)

Marketing must be understood not in the old sense of making sale, telling, and selling but in the new sense of satisfying customer's needs. If the marketers engage consumers effectively and understand their needs, they will develop products that will give superior customer value. As the figure below explains.

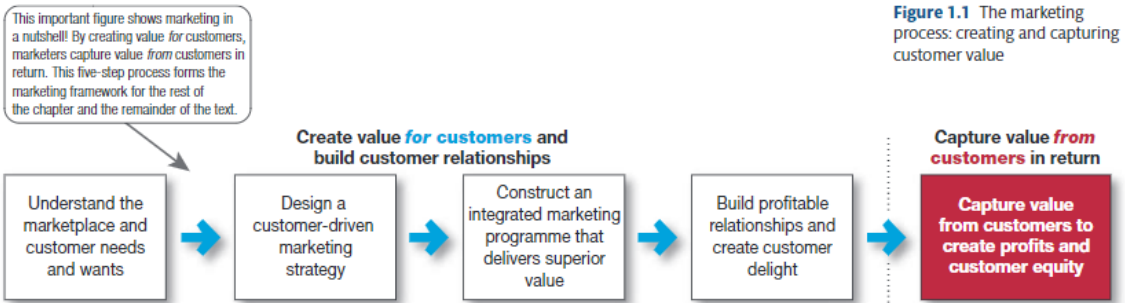

Figure 7: Five-step model of marketing. (Kotler and Armstrong, 2010)

Figure 7 above presents a simple five-step model of the marketing process for creating and capturing customers value. In the first four steps, companies work to understand consumers, create customer value and build strong customers relationships. In the final step companies reap the rewards of creating superior customer value. By creating value for consumers, they in turn capture value from consumers in the form of sales, profit and long-term customers equity

3.4.1 Customer needs, wants and demand

The most basic concept underlying marketing is that of human needs. Human needs are stated of felt deprivation. They include basic physical needs for food, clothing, warmth and safety, social needs for belonging and affection, and individual needs for knowledge and self-expression. These are basic needs not created by marketers.

Wants; wants are human needs shaped by culture, diversities, individual personalities for example a stereotype German consumer needs food but wants sauerkraut, sausage, and beer while someone from Papua, New Guinea needs food but wants a cucumber sandwiches and gallons of insipid tea. So, wants are shaped by one's society and are described in terms of objects that satisfy those needs, backed by buying power wants become demands. Given their wants and resources, people demand product and services with benefits that add up the most value satisfaction.

3.4.2 Marketing and Design thinking

Understandably marketing and design thinking are from diverging backgrounds – the former is in core of business, while the latter originates from the combination of mechanical engineering, product design, and innovation management. However, with careful consideration, there are common attributes that bind both disciplines. Ultimately, both marketing and Design Thinking can have mutual benefits (Walter and Uebernickel, 2016). When both are used together, the mutual advantage can be that, for example, marketing's learning can be fast-tracked if design thinking elements are applied. On the other hand, marketing can help design thinking by incorporating social science ideas in design thinking (Walter and Uebernickel, 2016).

The use of both marketing and Design Thinking at the end of the day,'' can help to make marketing plans more creative, faster, and more flexible, by helping to accelerate learning processes in marketing management. On the other hand, marketing can give Design Thinking impulses so that it does not fall too quickly into the pitfalls of oversimplification—and that the central foundation in social psychology and business management are not neglected in the innovation process. Ultimately, the principle by Design-Thinking-inspired firmwide applies (Cannon and Edmondson 2005, p. 310): "Enlightened trial-and-error succeeds over the planning of the lone genius.'' (Walter and Uebernickel, 2016, 61).

To the extent that marketing activities promote awareness of goods and services, encouraging patronage, and ultimately increased revenue, innovation is part of marketing. This is because, for a successful marketing campaign or activity, there is need to be innovative in carrying out the awareness of marketing. In the same vein, innovation is intertwined with design thinking. Ultimately, innovation, marketing and design thinking are related. In buttressing this point, Fraser (2006) itemizes seven steps to design that can eventually lead to innovation, and sustained success. The steps include making long-term commitment, building sign into the organization strategy, assigning a leader that is not limited into a function, collaborating and internalizing, inspiring (and not only legislating), feeding and rewarding design, and getting started. These steps align with the ways that design can improve not only marketing but also customer experience.

3.5 Consumer Behaviour

Since we now understand that Marketing is much more than just creating catchy phrase or a jingle people will sing for days, it is important to understand consumers buying behavior, how people make decisions about what they buy, want, need, or act towards a certain product and service, In order to understand consumer behavior and its concepts, it is important to review the basics of consumer behavior and what triggers consumers to behave the way they do regarding goods and services and how consumer behavior can help implement better ideas into design thinking in regards to psychological, personal and social factors.

3.5.1 Consumer behavior and Marketing

There are many definitions for Consumer's behaviour, according to Engel Blackwell, and Mansard, consumer behaviour is the actions and decision processes of people who purchase goods and services for personal or private consumption. Louden and Bitta defines it as the decision process and physical activity, which individuals engage in when evaluating, acquiring, using or disposing of goods and services.

The central question for marketers is how consumers respond to various marketing stimuli that the company might use, companies to understand the mind set of consumers with the usage of other products, new features, prices, and advertising appeal has a great advantage over its competitor, firm Competitive advantage. Firms must understand the consumers buying behavior and consumer market behavior.

Consumer buying behavior is the buying behavior of final consumers – individuals and households who buy goods and services for personal consumption while consumer market are all individuals and households who buy or acquire goods and services for personal consumption. In a concise, short description, design thinking is a creative method of solving problems. It typically includes a collaborative and innovative way of identifying problem and solving them. (Griffin, 2015)). As a rule, design thinking is necessary in developing a positive customers' experience, particularly when the problem to be solved (in this context, excellent customer experience), is not clearly defined. Although useful for customer experience management, and mostly used by innovative

and progressive companies and consultancy firms design thinking has its origin in multidisciplinary background like software development, engineering, business, the arts, anthropology, and psychology.

3.6 User Experience and Design Thinking

The most valuable assets of businesses are customers, so the services organizations render as to be taking with care, regardless of the business form or types of services provided, often ensure that their customers are satisfied with the services or products offered. This is with the understanding that revenues, and eventual profits are earned from satisfied customers. When customers enjoy the goods or services purchased, there is the increased possibility of returning to be served again. It is therefore a win-win situation for both the customers and the service/products providers. In the area of intense competition, businesses device means to outplay their competitors, in a bid to relevance. One way to outplay competition is to focus on customers' satisfaction.

Customer satisfaction is a significant part of Customer relationship management. Customer satisfaction thus implies the ''is the measure of how the needs and responses are collaborated and delivered to excel customer expectations''. (Seng., et al, 2016, 51). Collaborated? This should be "combined". On a broader sense, customer relationship management implies the procedures and practices, including policies and strategies that business undertakes to manage interactions with customers with the aim of improving customers' retention, the business growth, and essentially profits. It is closely related to customer loyalty and customer retention. (Seng., et al, 2016, 49). The customer relationship management takes three phases – marketing, sales and delivery, and customer services. Customer satisfaction can be categorized in two areas - transaction specific and general overall. (Yi, 1991). Figure 1 below describes customer relationship management in diagrammatic representation.

On the part of the service and product providers, the retention of the customers brought about by their continued patronage, means that their stream of continued revenue is almost guaranteed, and on the part of the customer, their satisfaction means that they have guaranteed stream of continuous meeting of their favorite's products and services. There are many ways to adduce customers' satisfaction. (Anderson, 1998, 5). When

customers are dissatisfied, they may verbally demonstrate their dissatisfaction, they could also not use the words of mouth.

At the point of consuming product or service, the customer exhibits number of emotions, (Menon & Dube, 2004, 229), and service providers needs be sensitive enough in managing the emotions so that their bottom line is not unfavorably affected by the emotions of the customers. The emotions displayed by customers or consumers of goods and services are unconnected to the service type. It does not matter what kind of product or services are being rendered. The emotions are to be managed appropriately for the benefit of the customers. Thus, service and product providers are expected to support these varied emotions of their customers. When the emotions are appropriately managed, satisfaction of the customers are mostly likely positive. (Menon & Dube, 2004, 229).

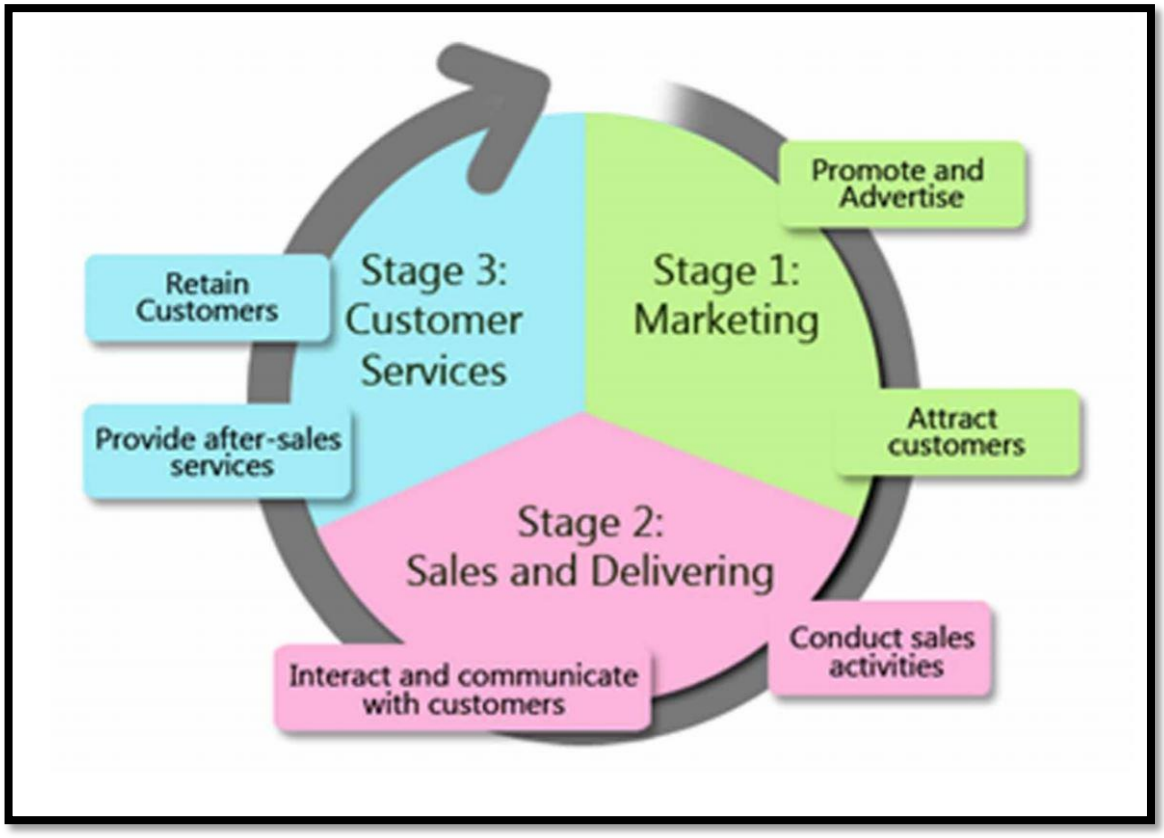

Figure 8: Diagrammatic Stages of customer relationship management. Source: Seng et al (2016)

A summary to this customer service section could be seen from the fact that there is need for design thinking to improve customer satisfaction. According to Roger Martins, businesses in the world today need to adopt the notion of shareholder value maximization as the singular goal of the firm to an unhelpful extent. It is important that shareholders earn a return on their investment that is higher than their risk-adjusted cost, it is important to ask whether that theory of the firm best produces such a return. A firm maximizes shareholder value by focusing on customers. If customers are delighted, shareholders will do fine. If customers are not delighted because the firm is spending its efforts hyping or growing its stocks, using aggressive counting approaches, or making lots of silly acquisitions all to promote increase in stock price then all then attempts will have at best short-term effectiveness. Martin believes that if a firm wants to do well with its shareholders it should focus on delighting customers meaning customer capitalism.

This brings us to the final concept of Design thinking, after understanding the customer behavior, having good customer relationship, and looking at consumer needs and wants through marketing, we are now introduced a solution to the problem in question which is using design thinking to improve the above concepts. We will now see design thinking in detail and why it is important for marketers and organizations to implement design thinking in their business strategies. Emphasis will be on what design thinking is, why is the innovation process important in businesses today because to bring solution to the problem in question, it is first important to understand the problem. Then implement the solution which in our case is design thinking. So, in this chapter we will analyze how design thinking is used in a research to understand the problem we are solving.

Combining customer relationship and customer service with Marketing to create value for customers is an important goal for every company. Marketing has an important role in strategic planning of a company as already discussed above. The combination provides a guiding philosophy, provides inputs to help identify marketing opportunities and assess potential for taking advantage of them and design strategies for reaching objectives.

Customer service takes the needs of customers as the central driver and revolves around a series of activities which are designed to facilitate the exchange process by making sure that customers are satisfied. Think about the time when you really had a good customer's service experience. Why were you impressed or delighted with the customer services? You might have experienced poor customer services but why?

The overall customer experience can be enhanced generally by cooperation between various department of a business. When various department cooperate, in line with the value chain of the business, the customer's experience is hopefully improved. The Value chain diagram below is a tool used to explain the various relationship in different department in businesses today, and why the connections are important factors to success in one other. For example, the customer service provision might be automated, it could be done solely online, or you might speak to a real person especially if you have complex or technical need. Customer service is then supported by IT to make the process of customer support more efficient and effective, to capture and process data on activities. So, the marketers need to make sure that he or she is working with

customer service provision since it is a vital customer interface. This explains why the support activities on the value chain are connected to the primary activities.

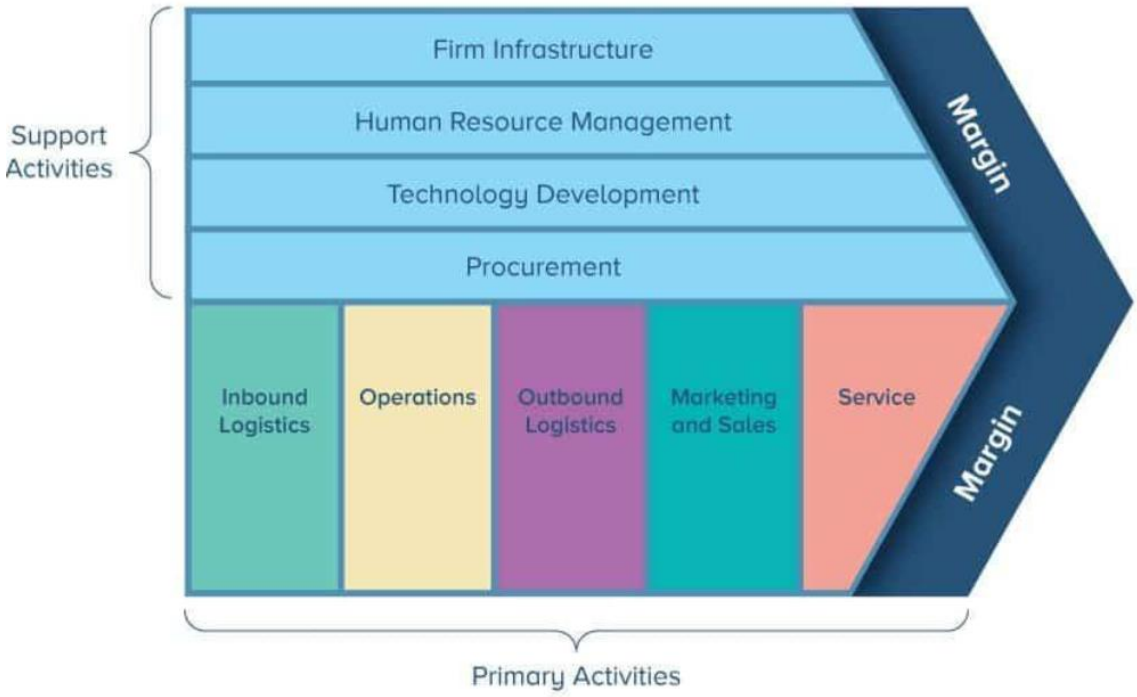

Figure 9: Value Chain Analysis

Customer or user experience can be enriched when there is proper thought behind the service rendered or goods sold. To have enduring, improved customer experience, there is the need to have design thinking at the center of the product or service development. At the very least, companies tend to promote customer experiences, positively, amongst other things to create customer loyalty and differentiation. (Zomerdijk et al, 2009). The need to create value to their customers and ultimately improving the customer experience increases in organization. Admittedly, the process of creating an enduring positive customer experience is somewhat tedious. It must be carefully thought-out.

In a concise, short description, design thinking is a creative method of solving problems. It typically includes a collaborative and innovative way of identifying problem and solving them. (Griffin, 2015). As a rule, design thinking is necessary in developing a positive customers' experience, particularly when the problem to be solved (in this context, excellent customer experience), is not clear or not proper defined. Although useful for

customer experience management, and mostly used by innovative and progressive companies and consultancy firms design thinking has its origin in multidisciplinary background like software development, engineering, business, the arts, anthropology, and psychology.

It is important to incorporate design thinking early enough in the development customer experience program of any corporation. Just as it is in project management, customer experience management when planned appropriately with a clearly thought-out design thinking principles early, helps for a favorable outcome. Such outcomes typically lead to service differentiation, customer loyalty, and positive customer experience. Benefits accruable as to the use of design thinking early enough in the lifecycle of the customer experience process is that, perhaps major decisions are made early in the customer experience phase. Secondly, where the customer experience management involves teams, it is in the early stage of the process that the team member bonds. Thus, it is critical that design thinking is infused in the customer experience program of the company, early enough. (Clatworthy, 2017)

Whilst customer experience can be created from little actions, say for example, a small restaurant strategically placing bright photographs of popular chefs or movie stars within the restaurant, the process needs to be clearly planned. Design thinking helps with the planning process of the of such customer experience. Berry et al (2002) opine that managing the total customer experience is necessary. To do so, they offer some five steps that guarantee easy management of the customer experience: recognizing the clues, building new competency, emergency room connection, trying harder and succeeding, and competing with experiences. (Berry et al 2002, 2) It is said that the foundation of an effective management of customer experience by any organization is to understand the clues that it is sending across to the customers. There are subtle clues, perhaps knowingly or otherwise that companies send across to their customers. Companies should be aware of the clues they send across. Clues include things that could be sensed or noticed in an organization, even when they are absent. For example, clues could be the physical settings, the type of employees, relationship with customers, forms of engagement, language, comments etc., and they, somehow add up to customers experiences. Thus, clues formed can be either positive or negative. The clues that customer make can be loosely categorized into two: functionality of the good and

services offered (how functional the goods and services are), and emotion (the concerns of smells, sounds, sights, tastes, textures, and the environment that goods and services are offered). Thus, in effectively managing customer experiences, there is the need to take attention to clues. organization should, in fact, manage clues just as they would for the actual physical product and services. (Berry et al 2002, 2)

The interrelationship of customer experience and design thinking can also be highlighted from the point of view of customer experience modelling. In this context, design thinking can take the place of modelling. It then will move in circles – when there is customer experience modelling, then to the customer experience, and thereafter to service design. All with the intent to improve the overall customer experience positively. Understandably, customer experience is very important for companies, especially service organizations, and as such it is not unusual for them to apply multidisciplinary approach in improving the experience of their clients and customers. (Teixeira et al, 2012). Organizations try to improve the customer experience, to increase the loyalty their customer give to their brands, and ultimately enhance their profitability. To improve the customer experience, Frow and Payne (2007) opine and summaries that companies should first, recognize the problem and the opportunity for improvement. Secondly, identify opportunities for co-creation (where customers can actively be involved in the service rendered, and thereby enriching their experience), thirdly, utilize mapping tolls to improve customer experience, fourthly, carefully managing customers' touchpads. Fifthly, Introducing appropriate metrics for measurement of customer experience. Sixthly, ensure a consistent customer experience within and across multiple channels. (Anand & Pratap, 2010)

4 Research Methodology

4.1 Research Types

There are varied methods used in carrying out research. Research can be done via quantitative or qualitative methods. In market research, for example, data can be collected and analysed which will indicate a quantitative research. When research does not include the numeric analysis, then it is referred to as qualitative. Qualitative research, as the name implies, is descriptive in nature, while quantitative is non-descriptive (uses numerical analysis). There are researches also that make use of both methods. In that instance, such research method is referred to as mixed research method.

4.2 Market Research

Marketing Research is a practical interaction and, in that capacity, be considered to hold fast to unadulterated logical strategy yet regardless most examination projects do a semi logical methodology. This mirrors the way that statistical surveying created out of adjusting major sociology analytical standards created during the 1950s. This thorough school thinking has given economic specialists large numbers of the basic instruments and tools needed to operate. These tools incorporate the idea of legitimacy, that is the proof truth, is it liberated from systematic bias? It is likewise dependable in this manner dependability, is the proof that has been gathered liable to hold great after some time? There is additionally the issue of affectability of the strategy, for instance building up whether little changes in the fortunes of the organization are because of a particular advertising drive or the consequences of typical variances in the commercial center is to a greater degree a test than estimating enormous changes in execution. There is likewise the topic of generalizability. This is about the degree to which research discoveries can be applied to settings other than that in which they were initially tried. In this way, an exploration finding might be altogether substantial in one setting, however not in another. Consequently, economic analysts will endeavor to follow, in a methodical way, the rules that we realize will give unbiased and strong proof. Yet, given the organization the

intricacy of the business world, on numerous investigations, statistical surveying will be described by significant level.

of realism Participants would have to overcome a variety of scientific, realistic, and economic limitations. These are the design tradeoffs. Relevantly, a competent market researcher understands how to compensate for flaws in the optimal or ideal design and incorporates this knowledge into their final analysis of the results. Market research is a method of gathering information about a product or service. In this paper exploratory research will best suits the problem this paper is trying to solve since it is a more pragmatic problem using the hypothesis of exploratory research and qualitative research will give better analysis and results to the problem in question. There is a myriad of ways in which data can be collected to provide input to the market research process, primary data collection and secondary methods.

Given the fact that it is classified as secondary, this approach is often used prior to the start of the market research process. Essentially, the research entails evaluating any existing data or other ways of thinking related to the research subject. In today's world, the growth of secondary data processing has been transformative.
The emergence of varieties of search engines and the pre-eminence of the brands such as google has made the task of collecting secondary much easier as the internet has now provided access to lot of information in the modern era in secondary data search which data are useful in current projects in which could be underestimated by researcher in data planning, collection, and analysis stages in a project. (ESOMAR, 2007; p. 16)

4.3 Qualitative and Quantitative Research Design

Designing for methods to be used in a research needs to be done in line with the peculiar attributes of each of the research methods. For qualitative research method, it is typically does not allow for a detailed plan prior the commencement of the research (Pickard, 2013; P.14), but the design should still elicit. Transferability, credibility, dependability, and confirmability are all examples of reliability. "To investigate, the human instrument

employs effective data collection methods, which are supplemented by tacit intelligence." Sampling is also done properly to reflect the descriptive nature of the study results peculiar aspect. This suggests that analysis is done where people are interested in data collection., sampling is done in a way that each participant contributes to noticeable difference from the preceding participants. (Pickard, 2013; P.14)

On the other hand, designing for a quantitative research, comparatively (to qualitative) requirement some linearity. This is perhaps one of the basic reasons why researchers prefer quantitative methods. Designing quantitative research starts with having an established framework from the literature review, a hypothesis is raised (sometimes it is just reflective of the aim and objectives of the research). The idea of hypothesis is used when true experimentation is done (Pickard, 2013; P.18), otherwise, it suffices for the research aims and objectives to be highlighted. Thereafter, the calculation of the sample and designing of the data collection instruments within the method. After then, the collected data is processed and analysed. The result of the analysis helps the researcher to either refute or support the hypothesis based on the evidence from the analysed data.

4.4 Case Studies

Case study as a research method is defined in many forms. The various forms, however, have unifying elements that set case studies apart from other research methods. One way to describe it is ‘an empirical inquiry that investigates a contemporary phenomenon within its real-life context; and in which multiple sources of evidence are used’ (Yin, 2008, 23). It can also be explained as the research method that concentrates on a sole issue, examining it in detail, interested in the issue in itself, as a whole. (Thomas, 2011, P.3)

Interestingly, this thesis uses a case study. It examines the issue of design thinking using IBM as the reference point. While understudying IBM’s uses of design thinking as a tool, this research intends to ‘unravel’ findings, in line with the set-out research objectives. Usually, case study research is designed to study a particular issue within context with clearly defined purpose, (Pickard, 2013; P.101). Case study has different types – the intrinsic case study, instrumental case study, and collective case study.

The purpose and aim of the research play a big role in categorizing research into different types. The aim of academic study, according to Zikmund 2000, may be exploratory (uncertain problem), descriptive (aware of problem), or explanatory (clearly defined problem). Some academics, especially those in the social sciences, often use the terms quantitative and qualitative research approaches.

“An exploratory research is implemented to explain a research deeper and understanding the essence of the problem,” Zikmund states. This makes it acceptable for such a research type to be used when conducting research on a topic about which the researcher has little prior information. Saunders 2000 backs up his point of view, stating that "an exploratory study is a powerful tool for discovering what's going on, gaining new insights, asking questions, and evaluating phenomena in a new light.” The use of such techniques allows for a deeper understanding rather than conclusive evidence of ideas. This form of research has the advantage of being highly adaptable to change.

For the second research model, Robson 1993 backed Zikmund's ideas on descriptive research, arguing that "descriptive research portrays an accurate profile of an individual, case, or circumstance." When a phenomenon is being studied or is becoming more common, it is understandable that more research is needed to explain it, explain its properties, and explain its inner connections (Huczynski and Buchanan 1991). Descriptive study addresses what, where, and how questions without a mandatory justification for the cause of the findings is the most important factor in this process.

The aim of explanatory research is to connect disparate variables or evidence. This is usually done after the exploratory and descriptive research has been completed.

“Descriptive research does not fit nicely into either the quantitative or qualitative research methodologies definitions, but it may incorporate elements of both, even within the same analysis. The term descriptive research refers to the type of research query, design, and data analysis that would be used to investigate a particular subject.

Descriptive statistics tell what is, while inferential statistics try to determine cause and effect.”

4.4 Limitations

As in most academic research there are usually some limitations to the study which proved challenging but as well could be the steppingstone to further research in the future. The difficulties encountered in reaching out physically in person with top IBM personnel to get a clear and concise view on how design thinking is being implemented in the corporation proved to be a limiting factor to the research, this explains why the case study was the preferred model used in the research method as information on IBM Design Thinking was gotten from a video of an interview conducted by other students with Phil Gilbert the GM and Head of Design at IBM. Moreover, the case study explains the tactics used by IBM to implement design thinking in larger groups in IBM.

Another important limitation to this study is the inability to clearly find out from customers or consumers of IBM design thinking products if truly their experience and or satisfaction has been improved upon after consuming their products. The inability to carry out that survey on the consumers themselves is a limitation to this research. IBM is using innovative and creative skills through design thinking to develop technologies to overcome the future needs and demands of customers but how well consumers respond to it and not just through information published on their IBM pages but through actual survey from the customers themselves is a limitation that this research could not fulfil.

5. IBM and Design Thinking

5.1 Research strategy

This research being a descriptive research goes further to make use of case study approach as its primary strategy to clearly illustrate how design thinking can be used to improve customer satisfaction. The case study will be on IBM Corporation.

5.2. Case study: Design thinking in IBM

Using case study is a better way to understand the changes & significance design thinking has brought to most organizations, IBM is a good example it involves customers user-centered experience and culture. IBM used designed in a school project, applications of design thinking help bringing solutions to problems thereby answering the problem to the question in this paper.

The need finding has been defined as a set of activities to determine the requirements of a new concept, based on user centered framework (Seidel & Fixson, 2013:20) This means tools needed in consulting user because taking users opinions helps improving the experience framework. Conducting interviews with customers for the launching of products or developing an overall understanding of the user experience through mapping the customers journey (for example, engaging in a real customer experience to better understand their strength and weaknesses, such as flying with a certain airline before redesigning the customer experience on board) These tools enable an honest understanding of the user experience by the company's executive. According to (Rauth 2015) companies and leaders need to know and understand a successful adoption of new management concepts like design thinking which can only be achieved through hard work in adapting it to specific context of the industry and organization even though this comes with challenges.

5.3 IBM Design thinking

Managers such as Adam Cutler (IBM Design Studio Program Director) and Phi Gilbert (General Manager Design) sat down with David Kelly and Tim Brown (Co-Founder and CEO of IDEO) in the early stages of design thinking to discuss what IDEO went through in designing the various design thinking principles. This definition helps us to comprehend the practical application of design thinking. Adam shared what the two IDEO managers said in quotes “We really blew it when we called this thing Design Thinking. […] It works great when you’re doing it in these small workshops at Stanford, but it starts to break apart and fail at scale.” (Cultler, Spool & McGrane, n.d). The innovative use of design thinking has earned IBM recognition.

‘’ For the second year in a row, HfS Research has named IBM (NYSE: IBM) to the "As-a-Service Winner's circle" of the "HfS Research 2017 Design Thinking in the As-A-Service Economy," according to the company. IBM was honored for the pioneering use of Design Thinking to achieve business results in collaborative engagements with clients. The HfS report also praises IBM for establishing and Investing in potential talent and technology skills to raise the importance of Design Thinking practices around the industry. The Design Thinking Blueprint Report is published by HfS to examine how service providers are implementing and impacting Design Thinking in key areas such as leadership, methodology, investment strategies, corporate culture,

as well as in-house talent HfS investigated the incorporation of Design Thinking into company operations and the advantages that have been realized for both corporate clients and service providers by evaluating 11 service providers. In 2016For the first time, HfS looked at how service providers were using Design Thinking to innovate in this industry. This year's report's aim was to determine how much top-tier service providers had progressed on real-world use cases, principles, and incorporation of Design Thinking into their culture. The data for the HfS 2017 study was gathered in the fourth quarter of 2016 and the first quarter of 2017. (TelecomWorldwire, 2017)

5.3.1 Key Processes, tactics, and techniques of Design thinking in IBM

IBM used school projects to implement design thinking into it concepts with the use teams in workshop to deploy tactics using different several key steps that managers and designers follow in product conceptualization process (Catmull, E., & Wallace, A. (2014), Cutler, A., Northwestern Engineering (2018), Rauth, I. (2015), Ries, E. (2017). Summarily, IBM uses the combination of the Principles, The Loop, and The Keys. These major combinations have their sub-themes that IBM uses. For example, The Loop includes the process of iteration that involves observation, reflection, and making, and The Keys include special items like Hills, Playbacks, and Sponsor Users.

5.3.1.1 KEY 1: Constructive dialogue & Playback**.**

This process is starting point and has to do with communication, dialogue is about putting the goal of design in clear and precise language and eliminating hierarchy silos. In IBM, design teams are created, these teams are frequently opened to dialogues with a duration of about 10-15 minutes per sessions. The concepts and ideas are reflected upon constructively criticized. In workshops, project supervisors and sponsors are invited with senior managers as sign of respect and constructive criticism goes beyond the main design team this is called stage confrontation and involves senior management. Typical questions are what did we learn? What is our next best move? Open dialogue helps answer these questions. This tactic is useful for the overall existence of IBM's design thinking philosophy. Playbacks affords requisite members of IBM design thinking ecosystem together – the users, stakeholders, and teams together – share ideas and feedback. The basic Key helps IBM reassess its design thinking approach, as they measure progress at intervals and possibly discover where there are misalignments from the set-out goals.

5.3.1.2 KEY 2: Hill

Military commanders defined intentions such as "taking the hill" to give troops a general vision and focus, but without specifying how to do exactly what they are supposed to do. To help the team concentrate its efforts, IBM divided the process into three sections, each with a different purpose leading up to the final target. A hill frames a problem as

expected outcome for the user without a predetermined solution. (Catmull, E., & Wallace, A. (2014), Cutler, A., Northwestern Engineering (2018), Rauth, I. (2015), Ries, E. (2017). In an interview conducted by Phil Gilbert, wields(Head of Design IBM) He defines the hills as a way to get a team focused on task that they need to solve, and for who they team is trying to solve the problem and when the team can figure out what type of customer they are trying to help or give a solution to then they can now know type of architect or designer depending on what is their motive, goal and objective of the customer. Will further link the interview to results material. It represents the succinct statements of the desired outcome that the eventual users hope to achieve. The goals to be accomplished are easily the hills. The benefit of highlighting the goals, and in many instances, evaluating them from time to time, is it makes the goals to be as fluid as possible and helps the IBM teams to be align as time progresses.

5.3.1.3 KEY 3: Sponsoring user

"Sponsor users are a way to see IBM hired people to battle the hills," Phil Gilbert explains. Sponsor users are usually paying consumers who devote 10 to 50 hours of co-design time with IBM teams during the project development phases. They have been introduced to the team since they can help verify solutions as well as reflect the issue. And complement the team's field research and personalities with their on-site knowledge''. The sponsoring users, are indeed, real-world people who are using the products that are the outcome of the design thinking process of IBM. The sponsoring users can give valuable feedback, technically or otherwise, to the IBM teams. Typically, the outcome of a product can be slightly different from envisaged result, thus, the feedback of the sponsoring users helps give insights and expertise to the teams.

5.3.2 The Principles

As mentioned above, the combination of principles, loops, and keys is a fundamental component of the IBM design thinking process. The principles are the foundational, pivotal elements in IBM's design thinking approach. The principles include three dimensions – the focus on user outcomes, restless reinvention, and diverse empowered

teams. The fusion of these foundational dimensions gives IBM's design thinking frame that the rest of the tactics in place.

i) A focus on user outcomes

This foundational element focuses on answering the question *'' who are you designing for, and what do they need''?* IBM's design thinking philosophy is centered around the measurement of how the set-out goals meet human needs. So, users are essentially part of the whole architecture of designing in IBM. So that they can give useful feedback to the team. Thus, users are partners in the IBM design thinking schemes.

ii) Restless Reinvention

This foundational element focuses on answering the question *''when's the last time you rethought what you are making''?* This also involves making use of the eventual users' (including clients) feedback to have continuous conversation about prototyping and iteration.

iii) Diverse empowered Teams

This foundational element focuses on answering the question *''do you have the right mix of makers''?* Essentially, this principle underscores the importance of having diverse teams. The ideal team comprises different of team members with different skillsets, education, backgrounds, and perspectives. The mix of the diversity help the team members to view ideas from different lenses and generate ideas faster.

5.3.3 The Loop

This literally means the process of quick iteration. It follows the trio of observation, reflection, and making. The first, observation, means the IBM's design thinking philosophy entails observing the would-be users thoroughly to make sure that outcomes and solutions produce meet real-world needs. Thus, this means that at as a first step in the making a lasting iteration, there is needed to first gain insights to the needs of the

people before designing solutions to meet the discovered needs. Secondly, reflection affords the opportunity to be able synergize from the possible different interpretation that different, diverse teams can give to same situation. On the observation made earlier, when people reflect, it gives the opportunity to synthesise and analyse the findings of the observation. Thirdly, making involves the showing off the outcome of the observation and reflection that has been made earlier. ‘The only way to see an outcome is to make one- even if the idea isn’t fully baked yet’ (IBM Design).

6. Discussion and Conclusion

The result shows that IBM is committed to design thinking, and this has improved the customer experience with IBM's products and services. Typically, Customer experience can be improved by design thinking through the combination of compassionate design thinking, socially conscious design, and psychological measures. Customer experience can be enriched when there is proper thought behind the service rendered or goods created. IBM uses the combination of the Principles, The Loop, and The keys.

As customer experience can always be improved. It is recommended that IBM continue to commit to its design thinking philosophy. This will then provide its numerous customers with positive experiences with its products and services.

We can see that elements of the literature review play a key role to the success of design thinking, Marketing for example creates the awareness of the desires, wants, and need of customers and helps management to be creative, fast, reliable, and more flexible and gives design thinking impulses so that it does not fall too quickly into the pitfalls of oversimplification and central foundation in social psychology and business management neglected in the innovation process. (Cannon & Edmondson 2005, p.310) "Enlightened trial-and-error succeeds over the planning of the lone genius.'' (Walter and Uebernickel, 2016, 61).

User experience is another important element of the literature review as it gives an insight into the customer as actual product users. Their feedback help management, designers, and organizations make good decisions in iterating product development. In a concise, short description, design thinking is a creative method of solving problems. It typically includes a collaborative and innovative way of identifying problems and solving them. (Griffin, 2015). As a rule, design thinking is necessary for developing a positive customers' experience, particularly when the problem to be solved (in this context, excellent customer experience), is not clear or not properly defined. Although useful for customer experience management, and mostly used by innovative and progressive companies and consultancy firms design thinking has its origin in multidisciplinary

background like software development, engineering, business, the arts, anthropology, and psychology.

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