

Design Thinking And Design Sprint: A Comprehensive Review

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Abstract: This study investigates design thinking and the design sprint approach to problem solving and innovation development. The two approaches are often confused among academics and practitioners. This study provides a comprehensive of about the similarities, differences, and applications of design thinking and design sprint. Both approaches are famous among start-ups and innovative companies in terms of developing innovative products and services. The findings suggest that both approaches have certain similarities and differences and can provide systematic ways to solving problems and developing innovations.

Index Terms: Design Sprint, Design Thinking, Sprint, Innovations, Start-Ups, Agile, Problem Solving

1 INTRODUCTION

Decades of research have focused on the question of how to create innovation as the source of competitive advantages [1]. Numerous studies have shown that the design thinking process can create innovations [2]. Even though the outcome of design thinking can result in innovation, design thinking is the process of creative problem solving. In other words, design thinkers create innovation in order to solve problems. Several studies have shown that collaboration among employees and multi-disciplinary teams can lead to innovation [3]. Another approach that many companies use to create innovative products is agile methodology [4]. In an agile project, cross-functional teams use sprint or iteration in order to create innovative products or software [5]. Overall, it has remained unclear whether there is any relationship between design thinking and agile methodology. In addition, there have been few studies reporting on the combined application of design thinking and sprint. The objective of this article is to compare some of the similarities and differences between design thinking and the design sprint framework. The author found that both design thinking and design can be used to create innovative products and services.

2 RESEARCH METHOD

This is a descriptive research. The data collection involves document analysis of secondary data consisting of existing research and books. The data were collected from secondary sources such as research databases, news, and reports related to design thinking, and design sprint methodology. The data also derived from the author's own observations and reflections.

3 DESIGN THINKING PRINCIPLES

"Sprint" is a concept developed by John Zeratsky, Jake Knapp, and Braden Kowitz, former employees at Google ventures. Specifically, "sprint" deals with the creation of a working product within five days, which is then followed by learning, building, and testing. In other words, "sprint" is the specific period of time that the team spends on problem solving and coming up with working solutions (Knapp, Zeratsky, et al. 2016). Moreover, "design sprint" is the practice a has been created by Google and its work is to collect all kinds of

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feedback quickly. Design Sprint comprises a process that takes five days to solve complex problems through ideation, framing, prototypes, tests, and feedback with users or customers [11]. Keijzer-Broers and de Reuver (2016) suggested a process in which complex issues are solved. The strengths that are associated with design sprint are sharing ideating, insights, tests, and prototypes all in 5 days. It also focuses largely on the solution part but it impacts the learning process overall and suggests if intended aspects are on right track.

4 DESIGN SPRINT FRAMEWORK

"Sprint" is a concept developed by John Zeratsky, Jake Knapp, and Braden Kowitz, former employees at Google ventures. Specifically, "sprint" deals with the creation of a working product within five days, which is then followed by learning, building, and testing. In other words, "sprint" is the specific period of time that the team spends on problem solving and coming up with working solutions (Knapp, Zeratsky, et al. 2016). Moreover, "design sprint" is the practice a has been created by Google and its work is to collect all kinds of feedback quickly. Design Sprint comprises a process that takes five days to solve complex problems through ideation, framing, prototypes, tests, and feedback with users or customers [11]. Keijzer-Broers and de Reuver (2016) suggested a process in which complex issues are solved. The strengths that are associated with design sprint are sharing ideating, insights, tests, and prototypes all in 5 days. It also focuses largely on the solution part but it impacts the learning process overall and suggests if intended aspects are on right track.

4.1 Design Sprint Day 1 Map and Target

On the first day, the challenge is to create a schedule for the entire week so that the concept of design sprint can be introduced amidst all the people that do not know each other. Before lunch, there is a need for setting up a long-term goal so that all of the probable obstacles can be dealt with and a map is made. Then, a flow-chart is made in order to depict the paths selected by the customers at the time when they (customers) are engaged with the designed product or service [11]. In addition, the first day is all about problem identification and engaging in activities that are related to problem finding [12]. The first day aims to ensure that a vision is created so that the entire team focuses on it for the entire period of the sprint. Then, the team selects the target event and target

customer, which is to be drawn on the map. Furthermore, this step establishes a challenge or problem that the sprint needs to solve. In other words, the first day aims to create a common understanding regarding the sprint's goal among the participants so that planning can begin. On the first day, the task is to organize all of the priorities and not at all to rush towards any conclusion. The main aim of developing the map is to shortlist the challenges and to divide them into a sprint target. The design sprint offers a definite structure so that both prototype and solution can be sketched. This map is a great combination of a "customer journey map" and "stakeholder map," which in turn consists of varied characters involved in the customer-centric story. The objective on the first day is to make sure that the map can be converted or framed into a "How Might We (HMW)" statement. This HMW question is the method that turns the problem and insight into an opportunity so that an innovative design can be created [13]. At the end of the session, the team should have many HMW statements, which will be put on the wall so that they can be organized into different groups and themes. Correspondingly, the entire team might use dot stickers so that the most promising questions of the HMW statement can be voted on. Thus, by the day's end on Monday, the sprint target is set for the design sprint along with one specific target moment and target customer. For instance, "Blue Bottle Coffee" decided to target customers that have never heard about the cafes owned and operated by them, along with coffee bean shopping, which was yet left to be tasted [11].

4.2 Design Sprint Day 2 Sketch

On Tuesday, the second day, the team begins by finding out effective solutions or ideas that can be used as probable solutions. All of these ideas are then sketched on the whiteboard next to the map created on Monday. The need for creating sketches is that they can be disposed of. The initial exercise on this day is that the entire team needs to note down all of the significant factors associated with the challenges, objectives, maps, and ideas. This is then followed by a second exercise, and it suggests drafting solutions that can solve the problems defined on Monday. "The Crazy 8s" is the third exercise, which involves the inclusion of eight rapid ideas covered in a minute. The final or the last exercise for Tuesday is to draw all of the details of the sketch that carry the best solution and then finalize it so that it can be used the following day. The second day is significant, as it initiates varied solutions to be highlighted against the user story and defined target, which the team had decided to solve the day before, or Monday [11].

4.3 Design Sprint Day 3 –Decision

Wednesday is used by the team to present effective solutions, review them, and finally decide on the best solution. Based on the sprint guidelines, solution sketches must be highlighted on the wall so that the entire team can follow them closely and spend some moments to review them carefully. This is then followed by highlighting the interesting ideas, and thus ending up formulating a "heat map" on the wall. Moreover, each sketch's creator gets a chance so that all of the unclear issues can be discussed, and questions answered. Right after this, the entire team builds a storyboard together, which in turn comprises ten to fifteen distinct frames that are drawn on the whiteboard. The storyboard conveys the entire prototype scenario or user journey so that user testing can be executed

on the fifth day. The sprint team needs to refer to the sketch solutions that are "winning," along with an illustration of notes so that the entire story can be completed. Moreover, the storyboard must contain all of the important details that are required to aid with the prototype task on the following day [11].

4.4 Design Sprint Day 4- Prototype

On Thursday, the entire day begins with the preparation of a prototype based on the storyboard that was created on the third day. A prototype is a method that makes all of the ideas "real enough to feel" so that users can offer feedback. In other words, a prototype is a tangible form of an idea. Based on the notion of Zeratsky and Kowitz (2016), a prototype that is an ideal sprint must possess "Goldilocks quality," which in turn ensures that customers will offer honest reactions. In short, the prototype must be built in a single day and needs to appear as real as possible (without too many details), and the reason for this is that if it (prototype) is of low quality, customers will never consider it a real product, which can hamper the entire process. On the other hand, if the prototype's quality is too high then it cannot be prepared in a single day. Thus, the prototype must be appropriate [11]. Experimenting early and developing primitive models can make the ideas tangible enough to gather feedback from users. In this way, the prototype aids in highlighting the faults and strengths associated with varied ideas. Thus, the emphasis of a particular prototype must be directed toward answering questions. This similar principle of prototyping can be applied in services, organizational processes, and varied infrastructure elements [14].

4.5 Design Sprint Day 5- Test

On Friday, the prototypes are tested with real users, and feedback can be attained. There are distinctive ways through which users are recruited based on the target audience [11]. Here, receiving feedback is important so that the team knows if it is on the right track [13]. Thus, the last day is focused on gaining all of the necessary information from the users through interviews and observation. The team demonstrates the prototype to the users and asks them for feedback. Then the team gathers all of the feedback and organizes into themes.

5 DESIGN THINKING VS. DESIGN SPRINT

The development of "Design Sprint" was initiated by 'Google Ventures - Google's Venture Capital arm,' which is based on agile methodologies and "Design Thinking." In other words, design sprint is a combination of sprint and design thinking. The goal of design sprint is to test an idea within five days. Design sprint is appropriate in a situation where the team is required to create a Minimum Viable Product (MVP) or solution quickly in the form of a prototype and to test the assumptions within five days. However, if the team wants to understand the context in depth and then create a complete solution, design thinking is more appropriate. The duration of design thinking can vary, but design sprint is typically limited to only five business days.

6 DISCUSSION

This article provides a comprehensive review of design thinking and design sprint. Our study addressed the question of whether there is any difference between design thinking and design sprint approaches. The author found that there are

similarities and differences between the two approaches in terms of problem solving and innovation development. Regarding the similarities, both approaches can be used to solve business and organizational problems, and both approaches can be used to develop innovative products and services. In addition, both approaches are human centered because they require user and/or customer participation. Moreover, both approaches employ prototypes to be tested with end users. In terms of differences, design thinking can take between one day and many months to complete, while design sprint takes only five days. In design sprint, each day has specific tasks that the team needs to complete. Because design sprint adopts an agile approach, each activity must be time-boxed. Another difference is that design thinking is intended to offer whole solutions, while design sprint offers the solution to a particular problem for users. The analysis suggests that both approaches can be complimentary in solving problems and in terms of innovation development.

7 CONCLUSIONS

This article provides a comprehensive review of design thinking and design sprint. Our study addressed the question of whether there is any difference between design thinking and design sprint approaches. The author found that there are similarities and differences between the two approaches in terms of problem solving and innovation development. Regarding the similarities, both approaches can be used to solve business and organizational problems, and both approaches can be used to develop innovative products and services. In addition, both approaches are human centered because they require user and/or customer participation. Moreover, both approaches employ prototypes to be tested with end users. In terms of differences, design thinking can take between one day and many months to complete, while design sprint takes only five days. In design sprint, each day has specific tasks that the team needs to complete. Because design sprint adopts an agile approach, each activity must be time-boxed. Another difference is that design thinking is intended to offer whole solutions, while design sprint offers the solution to a particular problem for users. The analysis suggests that both approaches can be complimentary in solving problems and in terms of innovation development.

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