

Design Sprint: fast problem-solving through collaboration

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Abstract

The tutorial proposed in this session presented the design sprint approach, a 4-day process for rapidly solving big challenges, creating new products, or improving existing ones. Developed in Google Ventures, the design sprint relies on a tight coupling between an idea and the data that allow to verify or discard it, hence ensuring that a product does at the same time match the business needs of the company running the sprint and the needs of the final user. The advantages of this approach include a quick validation of new ideas before committing to a strategic project, the alignment of different stakeholders on the objectives and challenges to be faced, a structuring of creative thinking through visual representation, and an iterative verification of actionable outcomes.

Keywords

Design thinking, innovation, problem solving, co-design, participatory approaches.

1. Introduction

This paper presents the tutorial delivered at ICSOB 2022 to introduce the design sprint 2.0 approach and present its value for validating an innovative idea before deciding whether to invest in a full-fledged project. The tutorial started from a methodological introduction to design sprint, following with a detailed description of the activities envisioned in its application, and finishing with a practical workshop to exemplify the application of the approach.

More in detail, the tutorial first described the structure of a typical design sprint week, explaining how this approach unfolds over 4 days. The process starts from defining the challenge to be addressed, moves on to collaboratively elaborating a mass of solutions and selecting the most promising ones, and then proceeds to prototyping and validating these solutions with real users in order to collect feedback to inform an additional iteration of the whole approach.

In order to allow participants to apply the main principles of the design sprint to a realistic case, a *Lightning Decision Jam workshop* was facilitated as part of the tutorial. This workshop summarises the most significant exercises of the design sprint process in just two hours, allowing teams to get a meaningful flavour of the approach while addressing a challenge and quickly converging on shared decisions and impactful solutions.

2. About design sprint

This section will introduce the motivation for adopting the design sprint approach, detail its relationship with design thinking, and describe its structure in detail.

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2.1. Motivation

The design sprint [2][4] is a process developed in Google Ventures that leads to the rapid validation of an idea (improving a service, creating new products, redesigning a process...) with respect to users before starting a strategic project. The **objectives** of a design sprint include the following [6]:

- Solving problems and testing ideas in a measurable way;
- Obtaining initial validation for a project in order to maximise the chances of creating a meaningful product or service (in the sense of something desirable for both users and business);
- Gathering insights on the market in a fast way.

This tutorial focused on the 2.0 version of the design sprint [5], which optimises the process by shortening it from five to four days.

The design sprint draws inspiration from several well-known approaches to innovation: for instance, as will be described in section 2.1, it moves from problem to solution through a process combining divergent and convergent steps, similarly to design thinking [1]; in addition, it retains elements of approaches such as Lean startup [3] in the focus on having a very short loop between an idea and the data that may validate or invalidate it.

In general, the **motivations** for running a design sprint include the following:

- Quickly validating new ideas before investing in an actual project;
- Favouring the alignment of stakeholders on the objectives and challenges to be faced while building a mutual understanding, as this is a participatory approach;
- structuring creative thinking mainly through visual representation;
- iteratively verifying actionable outcomes.

Because of this, a few examples of typical settings where running a design sprint may be beneficial include the following cases:

- Cross-functional teams finding it hard to align with **common business objectives**
- Teams working towards unclear goals because their **project scope changes** repeatedly
- Teams lacking **real data** to ground business decisions, and instead relying on endless internal discussions / **meetings**
- Teams pressured to be **'innovative'** but not knowing where to start
- Exceedingly **long product development cycles**, causing teams to lose enthusiasm and focus

2.2. Similarities with design thinking

Design sprint shares several foundational elements with the design thinking [1] methodology, a creative approach to change that considers at the same time the needs of users, the technical feasibility, and the economic viability of a potential solution. This methodology allows, in a short time and counting on active participation, to focus on the salient aspects of a complex problem and then to collaboratively elaborate concrete and shared operational proposals, which summarise the needs and contributions of different stakeholders. The advantages of this participatory approach [7] include stakeholder alignment on objectives and challenges, the structuring of creative thinking mainly through visual representation, and the identification of the most promising areas for innovation based on an integrated overview allowed by the direct engagement of various stakeholders.

Design thinking activities rely on the diverge-and-converge collaboration method [8], which consists of two stages: (1) a diverge stage, during which team members work independently to produce individual insights and (2) a converge stage, where they discuss the results of the diverge phase as a group to decide on some collective output. Diverge-and-converge mitigates several issues of usual brainstorming sessions and will ultimately produce a higher-quality result than simply focusing on generating one good idea.

As represented by the British Design Council [9], the design thinking approach concatenates two diverge-and-converge iterations (Figure 1): the first one starts from a broader problem and pinpoints the root issue to be addressed in order to deliver maximum value (“solving the right problem”); the second one generates solutions to such issue and then selects which one should be actually implemented (“solving the problem right”).

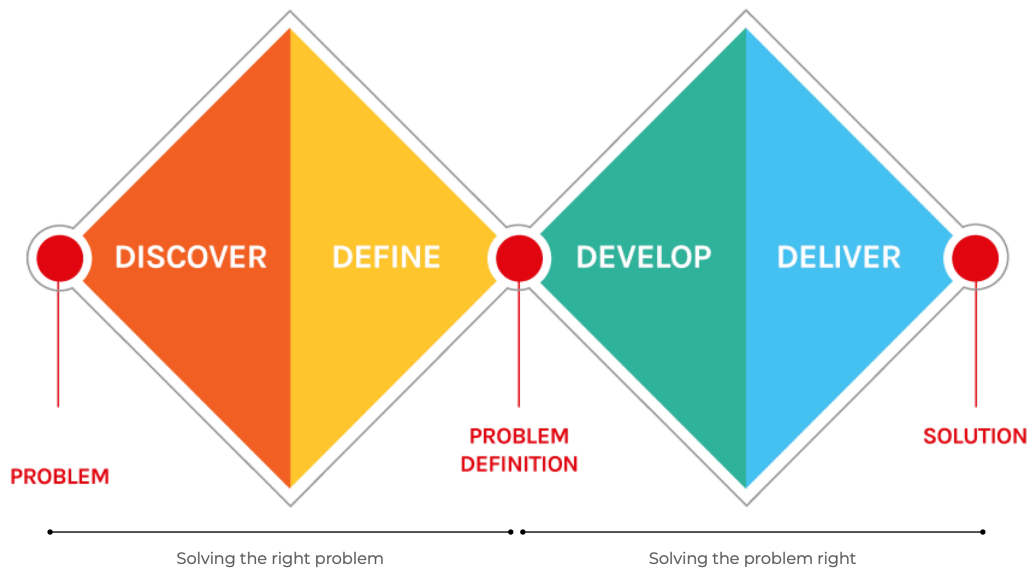


Figure 1: Double diamond structure of the design thinking approach

As will be shown in the next section, the design sprint incorporates the same diverge-and-converge method, although less explicitly, in order to alternate between idea generation and idea selection.

2.3. Structure of design sprint

A design sprint consists of a 4-day structured and time-boxed process: this allows reducing risk, as the time dedicated to the sprint is very short, while ensuring that tangible results are achieved and that elements for deciding whether to commit to a project are garnered.

In a typical design sprint week (Figure 2), the process starts from defining the challenge to be addressed, moves on to collaboratively elaborating a mass of solutions and selecting the most promising ones, and then proceeds to prototyping and validating these solutions with real users to collect feedback in order to inform an additional iteration of the whole approach.

More specifically, the first two days of the sprint are organised as participatory workshops that should be attended by a diverse group of the most relevant stakeholders, each providing their own point of view on the matter; it is important that such group includes decision makers attending sessions continually, in order to collect a diverse feedback and ensure that people with the power to decide on whether a project should take place are engaged from the beginning.

In these two days, the sprint team starts by gathering information on the context in order to hone the challenge to be addressed: this is done by defining long-term business goals, interviewing experts of the matter, mapping the as-is customer journey, and collecting lightning demos, i.e. examples of how similar issues were addressed in different settings (e.g. by competitors or in different markets).

Once the team has shared and assimilated all this information, they progressively refine concepts (in the form of annotated sketches – a visualisation technique) that will lead to pinpointing the most promising suggestions to assemble in the one solution to be prototyped within that sprint. It should be noted that, to cut unnecessary discussions and promote a more inclusive engagement, the selection of

the best solution is done by voting on concepts, rather than debating. Once a solution is selected, the team proceeds to elaborate a storyboard representing the to-be situation to be tested.

At this point (corresponding to the third day), depending on the team skills, the design sprint may be taken over by a team of designers, who elaborate the storyboard into a prototype to be qualitatively tested with five real users; collected feedback can then be used to either discard the idea as not worth investing on, or to further refine the concept and prepare it to be instantiated in a full-fledged project.

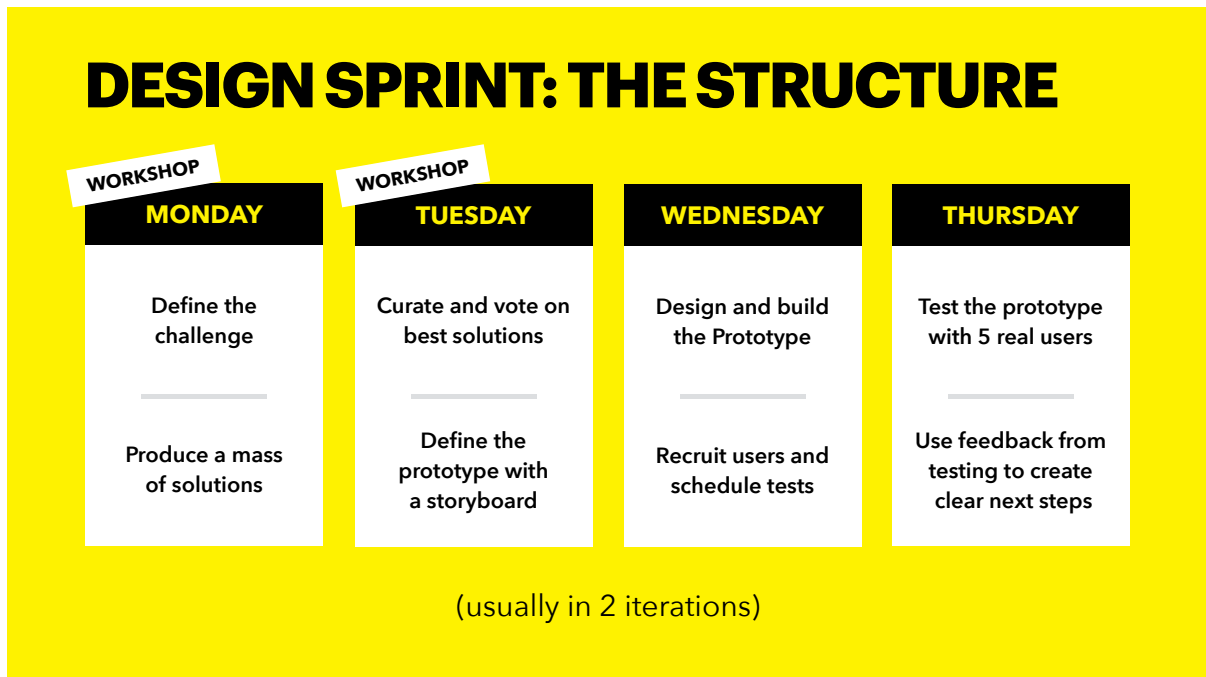


Figure 2: Structure of a design sprint

3. A practical example: the Lightning Decision Jam

After a brief introduction to the motivations for running a design sprint and to its typical structure, the tutorial engaged participants in a practical activity called *Lightning Decision Jam* (LDJ) [10]: this is a condensed workshop (usually lasting 60 to 90 minutes) that exemplifies the application of the main principles of the design sprint itself. In an LDJ, the discussion among team members is structured to encourage convergence on actions with maximum impact and minimum cost to be undertaken in order to resolve the most critical aspect of the issue at hand. This workshop includes a flexible combination of exercises drawn from the most widespread problem-solving processes (such as design thinking, brainstorming, design sprint and agile); its purpose is to replace open discussion or brainstorming with a structured process that leads to more ideas, clearer decisions and better outcomes.

As a sample issue to address during the tutorial, participants were divided in three groups of 5-6 members each and worked on how to encourage citizens to reuse their electronic devices rather than discard them, hence reducing waste and resource consumption. This was chosen as a neutral topic that did not require any specific previous knowledge from participants to be addressed.

Teams started by collecting positive aspects of how this is currently managed and identifying the critical issues to focus on, following with devising general solutions and prioritising them in terms of impact and required effort. Throughout the process, participants were guided through the following steps, which constitute the usual structure of a Lightning Decision Jam:

- identification of both the strengths and critical aspects of the current way of addressing the issue at hand;
- selection of the most significant issue to address according to each team;

- generation of several “How might we...?” (HMW) questions, unpacking the selected issue and highlighting its different facets, finally picking the question representing the root problem to tackle;
- brainstorming on possible solutions answering the chosen question and selection of the most plausible ones according to the team;
- evaluation of selected solutions based on the impact and effort of adoption, in terms of both time and resources, highlighting those with maximum impact and minimum expected effort.

Lightning Decision Jam: the structure

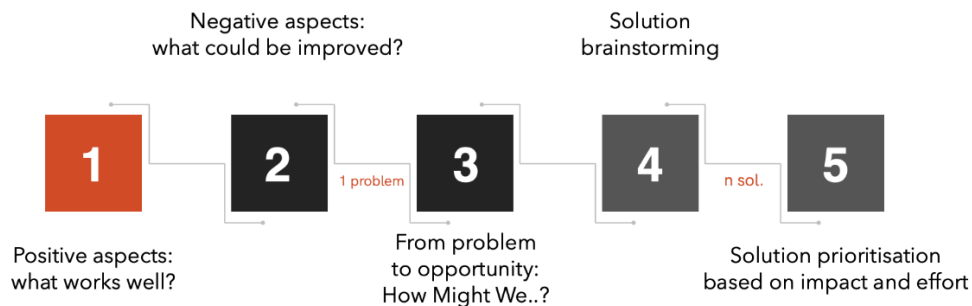


Figure 3: Structure of the Lightning Decision Jam workshop

4. Conclusions

In a market requiring businesses to address digital transformation as a way to continuously adapt to change, design thinking (the methodology grounding the design sprint approach presented in this tutorial) becomes a key instrument to manage and drive this evolution. By reconciling the needs of users, the potential of technology, and the requirements of business, design thinking provides a cross-disciplinary approach leading to creative solutions that offer an answer to different stakeholders.

However, the current market also calls for fast decisions and fast, continuous improvement and delivery. Design sprint implements the principles of design thinking while adapting them to the time constraints of modern organisations, providing a valuable and standardised process to validate the viability of an idea (be it a service, a feature, a product to be innovated or designed from scratch) by accounting for different stakeholders and before investing in a full-fledged project.

By getting acquainted with design sprint, participants of the tutorial familiarised with a standardised process that can be applied to different sectors and bring fast, shared innovation in a company or institution at different levels: software, business, and organisation.

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