Rapid Platform Exploration – A Sprint to Discover and Design Digital Platform Business Models

In recent years, the significance of digital platform business models has been increasing. This growth has created an increase in demand for tools companies and startups can apply to find and develop sustainable platform business models. Today, various platform design tools are available to help companies and startups in the platform development. Previous research has provided methods requiring, amongst others, a discovered and verified business model. However, there is lack of research in establishing guidelines how to reach this verified state. By applying the Google Sprint, a popular method to quickly generate insights into a variety of problems, and enriching it with platform design tools, this research creates the Smart Platform Design Sprint (SPDS), which provides a solution to discover and obtain a verified business model. The novelty of the SPDS lies in incurring the speed of the Google Sprint and incorporating the expertise of platform design tools. Through a series of expert interviews, the SPDS is further improved, and its necessity verified. The SPDS awaits application in a practical setting showing its feasibility.

Keywords: Platform Design Tools, Business Model, Exploration, Google Sprint, Smart Platform Experiment Cycle

Introduction

In the last decades, radical technological progress led to the rise of innovative digital platform business models (Täuscher and Laudien, 2018). While traditional pipeline business models focus on creating a product or service, digital platforms aim to orchestrate an infrastructure to facilitate interactions and exchange between external producers and consumers (Parker et al., 2016). The Interbrand Report 2020 highlighted the growing presence and relevance of digital platform business models: Apple, Amazon, Microsoft, and Google, four of the most valuable companies in the world incorporate digital platforms in their business model (Interbrand, 2020).

There are many reasons for the growing dominance of digital platform business models. For instance, they can be deployed quickly and are highly scalable due to the large number of accessible potential customers over the internet. Additionally, offers and content can be individualized (Parker et al., 2016). On the downside, there is a high risk for platforms to fail before reaching a relevant status (Alstyne et al., 2016). In this light, previous research suggested to investigate how digital platform business models can be designed and verified when no initial concepts exist – it is essential to generate and verify an initial concept first before investing money to validate and to scale the platform (Brecht et al., 2021). Practice has used frameworks like the Google Sprint by the venture capital firm Google Ventures to prototype, test
initial concepts, and verify them (Nashrulloh et al., 2019). The Google Sprint is
a structured framework that can assist the user in generating an initial idea for a
business model, including a first verification at the end of the five-day process
(Knapp et al., 2016).

To date, the Google Sprint has been used and investigated in scientific
literature for specific purposes such as designing software products in startups
(Nashrulloh et al., 2019), investigating innovation techniques in small and
medium-sized companies (Martins et al., 2020), and in educational settings to
enhance a user-centered design course for university students (Larusdottir et
al., 2019). However, to the authors’ knowledge no research has been conducted
to investigate the use of the Google Sprint for designing digital platform
business models. This research builds on the Google Design Sprint 2.0 to
create a new framework, which is set out to result in a verified digital platform
business model. Therefore, it focuses on the use case of designing a digital
platform business model from scratch. It incorporates the unique features and
characteristics of digital platform business models that differentiate in many
aspects from the logic of traditional pipeline business models (Brecht et al.,
2021). Consequently, this research is concerned with answering the following
research question:

**RQ: To what extend can the Google Sprint be adjusted and used to
discover and design digital platform business models?**

This exploratory research proposes the Smart Platform Design Sprint for
the specific use case of designing and verifying a digital platform business
model. More precisely, the Google Design Sprint 2.0 is used as a basis and
augmented with platform design tools. After designing a first iteration of the
Smart Platform Design Sprint, it was verified through a series of expert
interviews. With this feedback, the researchers created a new and improved
version of the Smart Platform Design Sprint.

The qualitative research design generates actionable insights for
practitioners to be more successful in designing a platform business model.
Results suggest extending the Sprint to a five-day process to incorporate the
activities more efficiently. Furthermore, it is suggested to include an
onboarding event, which aligns the team’s mindset. However, also the
moderator who leads the team through the Sprint must be knowledgeable and
should have the skills to transfer this knowledge to the team. Also, it is
recommended to add the MVP Canvas to improve the categorization of
platform assumption. Lastly, reordering the sequence of specific activities
improved the speed of the Smart Platform Design Sprint.

This paper is structured as follows. In the next section, relevant theoretical
concepts are explained to increase the understanding of the research context.
These are also used to derive the hypothesis of this research. In the third
section, the methodology is described, which elaborates on the research design
choices, the conducted expert interviews, and the qualitative content analysis.
Section four present the results by showing how the Smart Platform Design
Sprint is constructed and iteratively enriched with expert knowledge. In section five, a general discussion is given, followed by theoretical and practical implications. This section continues with insights into the limitations encountered during this research and suggestions for future research. Finally, this paper ends with concluding remarks.

**Literature Review**

**Business Model Exploration**

The notion of exploration in the (platform) business model setting is defined as the quest of transforming business ideas into value propositions relevant to customers, which are “embedded in scalable and profitable business models” (Osterwalder et al., 2020, p.9). In essence, exploration is finding and creating comparative advantages over the company’s competition (Thomke, 2014).

Exploration comprises the steps (1) discovery and (2) validation. The goal of discovery is to gain insights and gather data to determine whether the general direction of the business model is correct (Aulet et al., 2017). Meeting this goal involves a range of activities such as applying theory, creating tools, or conducting experimentation (Kulkarni and Simon, 1988). As discovery is done under the premise of ensuring that value is created for the customer (Bland and Osterwalder, 2020), discovery activities run under consideration of verification. Verification ensures that the conditions imposed at the beginning of the development process are satisfied at every development stage (IEEE, 1990). Therefore, verification occurs internally and determines whether the business model was created correctly. With the completion of the discovery step a verified business model would be extracted, which is investigated in the second step of exploration, validation.

Generally, validation assesses whether the specified requirements are satisfied, and the output of the development fulfills its purpose in the target environment (Engel, 2010; Albers et al., 2010). Thus, validation occurs externally and can be done during or at the end of the development process (Engel, 2010; IEEE, 1990). In business model exploration, the validation entails a more advanced and robust gathering of evidence and further evaluates the findings of the discovery stage. The focus lies on conducting authentic and real experimentation investigating customer behavior (Bland and Osterwalder, 2020). The findings will be used to confirm or redesign the business model and the value propositions (Osterwalder et al., 2020).

As an example, for the validation of a digital platform business model, Brecht et al. (2021) developed the Smart Platform Experiment Cycle (SPEC). It is a five-step process designed to validate digital platform business models through business experiments with customers. The SPEC aims to achieve the validation by spending limited time and money. Possible outcomes of the process are a validated or invalidated hypothesis about the platform business...
model that initiate either a new iteration of the SPEC, or a decision to pivot or stop the activities subjected in the hypotheses (Brecht et al., 2021). However, as a prerequisite to start the SPEC, a verified platform business model is required.

The Google Design Sprint 2.0

The Google Design Sprint 2.0 is a four-day process that enables a team to answer vital questions by using prototyping and testing initial ideas with customers (Knapp et al., 2016). The Google Design Sprint 2.0 is an advancement of the Google Sprint, which was created to tackle a wide variety of problems. The problems solved by the Sprint ranged from the development of an online shop to software specific problems (Knapp et al., 2016). As such, the original Google Sprint was used, for example, for the development of Google Hangouts.

The Google Design Sprint 2.0 requires several steps as preparation before the actual sprint: Sprints target primarily crucial problems to justify the resources the company invests into the sprint. Consequently, before running the Google Design Sprint 2.0, the problem should be well defined (Knapp et al., 2016). Up to eight people are selected to form the sprint team, thereby a moderator and at least one decider are chosen (Sutton, 2014; Knapp et al., 2016). The moderator leads the team through the planned exercises and is responsible for the organization of the sprint, including the location and materials necessary to complete the sprint (Knapp et al., 2016). The decider has the authority to make decisions during the sprint week (Knapp et al., 2016).

The participants of the sprint must understand the scope of decisions they make. It is especially important when deciding how to monetize the platform since monetization affects a platform’s network effects (Parker et al., 2016). Thus, one might consider the following hypothesis:

H1: Before the sprint, the sprint team should participate in a Massive Open Online Course (MOOC) or some event to gain a basic understanding of platform business models. Alternatively, a platform expert could be part of the team to provide the necessary platform specific knowledge in the team.

One of the sprint’s objectives is to be fast and efficient; time is limited during the sprint week. Therefore, the team should be familiar with the canvases before starting the sprint, resulting in saving time during the sprint week. This can be formulated as a second hypothesis:

H2: There should be a workshop before the sprint week in which the participants get to know the canvases used in the sprint.

On Monday, the sprint starts with an exercise called “Ask the Experts”. The moderator asks the team a series of questions regarding, for example, a
product description, the product users, and which problem the product is trying to solve. Answers are collected by all team members. The team categorizes all notes and votes on a prioritization for the categories. The decider’s opinion has additional weight (Courtney et al., 2021). After the interviews are completed, the long-term goals and sprint questions are targeted. For this purpose, every member of the team anticipates the best possible outcome for the problem at hand and writes it down. As in the previous exercise, the answers are collected and the team votes on a joint goal (Courtney et al., 2021). Next, the sprint questions are deduced from the long-term goal, with the team thinking about the most significant obstacles they must overcome to achieve the long-term goal determined previously; the collection and voting process from the previous exercises is applied again (Courtney et al., 2021). Afterwards, a map is created to support the activities of the following days. It visualizes a process, for example, a customer journey (Knapp et al., 2016). With the creation of the map, the basis for the sprint is completed. Now, the team shifts its focus to finding solutions, starting with an exercise called “Lightning Demos”. Team members receive time for researching and finding solutions, followed by a short presentation (Knapp et al., 2016). In the next step, all team members sketch eight variations of their best ideas in eight minutes (Knapp et al., 2016). In the last step of the solution sketching process, the team creates a solution sketch. Every team member keeps their sketch anonymous, gives it a title, and makes the sketch self-explanatory (Knapp et al., 2016).

On Tuesday, the team decides by voting which solution sketch to prototype in a User Test Flow. To create the User Test Flow, the team members work individually on the definition of six action steps. One action step could be, for instance, an individual click (Courtney et al., 2021). After the results are presented, the team votes on the preferred User Test Flow (Courtney et al., 2021). Next, the storyboard is created building on the User Test Flow.

On Wednesday, prototypes are built. The key is to build the prototype as lean as possible without wasting time but to a sufficient extent to test the idea (Knapp et al., 2016). For prototyping, team members take on the roles of an interviewer, makers, a writer, an asset collector, and a stitcher. The interviewer prepares a script for the interviews, while the makers create the components of the prototype. The asset collector collects or provides the makers with necessary materials, like photos, logos. The stitcher combines the parts building the prototype and presents it to the interviewer (Knapp et al., 2016). The interviewer is the target for the trial run as the interviewer did not participate in the prototype’s building process. Thus, it is most likely to spot any inconsistencies or flaws the team should fix before the user tests (Knapp et al., 2016).

On Thursday, the team conducts five user tests with customers, which are sufficient to identify 85% of usability problems (Nielsen, 2000; Knapp et al., 2016). For the interviews, the team occupies two rooms. In the first room, the interviewer conducts the interviews with the users. The interviewer gives the customer open-ended tasks and asks questions (Knapp et al., 2016). In the second room, the rest of the team watches a live stream of the interview and
takes notes about the customers’ reactions while handling the prototype (Knapp et al., 2016). The team tries to identify patterns in the customers’ reactions and determines whether these patterns are important (Knapp et al., 2016). At the end of the sprint, the team refers to the goals set on Monday and decides how to follow up (Knapp et al., 2016).

Platform Design Tools

Platform Design Tools have been created to support the development of digital platforms. To provide platform-specific expertise, specific exercises from the Platform Design Toolkit 2.2 by Boundaryless S.r.l. (2019) are implemented. In the following, a set of canvases and tools used in this research are presented.

The following tools are used on Monday in the Platform Design Sprint: In the Ecosystem Canvas, stakeholders such as external stakeholders, peer consumers, peer producers, partners, and platform owners are identified with a focus on the entities participating in the interactions (Boundaryless S.r.l., 2019). In connection with this canvas, the Ecosystem Entity-Role Portrait Canvas is used to analyze each entity’s assets, capabilities, performance pressures, current goals, and the gains the entity expects from its participation in the ecosystem (Boundaryless S.r.l., 2019). Since every platform starts with one core interaction between producers and consumers, this interaction forms the core relationship. Successful platforms scale by designing new interactions around a core interaction during the lifecycle of a platform, which is defined as the most essential activity (Parker et al., 2016). The main tool to consider for this decision is the Ecosystem’s Motivation Matrix. It displays the current and future potential of the identified entities to exchange value comprised in a matrix (Boundaryless S.r.l., 2019). Furthermore, the team determines a core entity, which is one entity of the core relationship. This core entity has priority when designing the platform (Boundaryless S.r.l., 2019). Based on these main tools, support the choice for these canvases as a tool for the team to understand the platform’s ecosystem, the following hypothesis is derived:

**H3:** The canvases implemented on Monday afternoon provide a good basis to understand the platform’s ecosystem, and this knowledge enables the team to find the fitting platform solution.

The Transaction Board is a tool to list transactions and interactions between the entities of the core relationship. The goal is to establish an understanding of existing transactions and channels, assess how they need to be improved, and what additional components must be created to facilitate their scaling potential (Boundaryless S.r.l., 2019). The Learning Engine Canvas allows the team to understand the challenges different entities face on the platform in different phases of their customer journey. It is done by stating these challenges and highlighting available tools to solve these challenges (Boundaryless S.r.l., 2019).
In the Platform Design Toolkit 2.2, the *Ecosystem Entity*-*Role Portrait* is done as the exercise following the identification of the entities in the ecosystem. According to this order, the *Ecosystem Entity*-*Role Portrait* is applied to every entity. However, since one of the main characteristics of the Google Sprints is speed and efficiency, doing the *Ecosystem Entity*-*Role Portrait* for every entity is not feasible in a sprint. To maintain the sprint’s efficiency, the order of the exercises is changed. The *Ecosystem Entity*-*Role Portrait* is the exercise done after the core relationship has been chosen. This reordering reduces the workload from creating one canvas for every entity to just one or two canvases. The final number of canvases depends on whether the team does the *Ecosystem Entity*-*Role Portrait* only for the core entity or both entities forming the core relationship. Therefore, *H4* states: The canvas portraying the *Ecosystem Entity*-*Role in detail should be postponed until the core relationship and core entity have been defined.

The *Minimal Viable Platform Canvas* (MVP Canvas) splits the designed platform business model into the three elements desirability, feasibility, and viability. Achieving an appropriate balance of these elements is highly important since only a balance of them create long-term sustainability (Brown and Katz, 2019; Digital Ahead UG, 2021). The three major sections for desirability, feasibility, and viability are further divided into key assumptions and hypotheses. They show how each is tested and what criteria is used to determine whether an assumption is proven or disproven (Digital Ahead UG, 2021). Thus,

*H5* claims: The MVP Canvas used on Wednesday shows a split into desirability, feasibility, and viability. Categorizing the assumptions about the platform into these three categories is advantageous for testing the prototype.

Figure 1 shows how the sprint process aims to cover the steps necessary for the discovery of a business model before its validation with the SPEC by Brecht et al. (2021). Furthermore, the tools used for the creation of the design sprint for platforms are displayed, namely the Google Design Sprint 2.0 and the chosen tools for digital platform design.
Figure 1. Overview of the Discovery Concepts and the Validation Process of Digital Platform Business Models

Source: Based on Brecht et al., 2020.

Methodology

The exploratory nature of this research focuses on the specific use case of digital platform business model design with the framework of a Google Sprint. Therefore, a qualitative research design was selected as mostly non-numeric data was collected (Creswell and Creswell, 2018). A qualitative research design can help to gain a deep understanding of the problem at hand and allowed the researchers to gather contextual data and understand decisions and actions (Myers 2019; Jamshed 2014). Additionally, this qualitative research design led to more flexibility in collecting data and providing an improved basis for conclusions grounded in the experience of practitioners (Lowder, 2009).

To create the sprint for platform business models, the researchers designed a first iteration of the process, combining the Google Design Sprint 2.0 with platform design tools. Based on assumptions made during the design phase of the sprint, the hypotheses were formulated. For a verification of the process and to corroborate or refute the formulated hypotheses, five semi-structured expert interviews were conducted. Each of the interviews included a set of nine questions every expert was asked. The expert interviews were followed by a qualitative content analysis which investigated the hypotheses. Furthermore, additional feedback from the experts was collected, categorized, and then prioritized. With the information gathered from the expert interviews, a new and improved iteration of the sprint was created.

The purpose of this research is to generate findings, which support practitioners in designing platform business models. Hence, experts with a deep understanding of their industry and rich experience in designing platform business models were selected for the interviews. Three out of five experts had a background in innovation coaching or worked in innovation labs of different
companies. A fourth expert was a consultant, specialized in digital transformation. The last expert worked in an innovation-focused research facility. The interviews were designed as semi-structured interviews to allow the experts to state their opinion on the presented hypotheses as freely as possible. The interviews were structured as follows: With the Covid-19 pandemic and contact restrictions in place, interviews could not be conducted in person. Therefore, the interviews were held through video calls with one expert at a time. The interviewer presented a series of PowerPoint slides to the expert explaining the designed process. At the corresponding time, the questions noted in the interview guideline were posed to the interviewee. The questions were both, open-ended and close-ended depending on the topic. While sometimes a quick “yes” or “no” was deemed sufficient, other questions were designed to spark discussion and extract more of the experts' knowledge. The interviews were conducted from December 16, 2020, to January 4, 2021, each lasting between 50 and 70 minutes.

For data analysis, the researcher conducted a qualitative content analysis according to Mayring (2014). The main characteristic of qualitative content analysis is that only characteristics relevant to answering the posed questions are considered (Mayring, 2014). In the first step, the interviews were transcribed using the transcription software MAXQDA to create a first written draft of the transcript for each interview. The transcription errors of the software were then corrected manually. The final transcriptions of the interviews were analyzed to extract the answers given to the questions from the interview guideline, aimed at answering the hypotheses formulated at the end of the literature review. This analysis was done by creating a code in line with the formulated hypotheses and extended by feedback repeatedly given by the experts. The knowledge extracted from the transcriptions of the interviews was prioritized according to how unanimous the experts’ answers were. Anecdotes from the experts were also categorized and prioritized according to how often the experts commented on this specific topic and whether the comments were positive or negative. Topics on which only one expert commented were discarded. The results are the basis for the changes made to the first iteration of the sprint for platform business models, resulting in the iteration described in this research paper.

**Results**

**Results regarding the Hypotheses**

Error! Reference source not found. displays the answers given by the experts concerning the stated hypotheses. Some experts signaled indifference towards some of the hypotheses. These indifferent answers were not tallied in the table, as they did not add any value to corroborate or refute a hypothesis.
Table 1. Overview of the formulated hypotheses and responses from the experts in the interviews

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Subparts of the Hypothesis</th>
<th>Responses</th>
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<tbody>
<tr>
<td>Before the sprint, the sprint team should participate in a MOOC or some event to gain a basic understanding of platform business models. Alternatively, a platform expert could be part of the team to provide the necessary platform specific knowledge in the team.</td>
<td>Necessity to teach&lt;br&gt;Teach in a workshop&lt;br&gt;Teach with a MOOC&lt;br&gt;Include a platform expert</td>
<td>Positive 1&lt;br&gt;Positive 3&lt;br&gt;Negative 1&lt;br&gt;Positive 4</td>
</tr>
<tr>
<td>There should be a workshop before the sprint week in which the participants get.</td>
<td>Positive 4</td>
<td></td>
</tr>
<tr>
<td>The canvases implemented on Monday afternoon provide a good basis to understand the platform’s ecosystem and this knowledge enables the team to find the fitting platform.</td>
<td>Positive 5</td>
<td></td>
</tr>
<tr>
<td>The canvases portraying the Ecosystem Entity-Role in detail should be postponed until the core relationship and core entity have been defined.</td>
<td>Positive 4</td>
<td></td>
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<tr>
<td>The MVP Canvas used on Friday shows a split into desirability, feasibility, and viability. Categorizing the assumptions made about the platform into these three categories is advantageous for testing the prototype.</td>
<td>Positive 5</td>
<td></td>
</tr>
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Source: Interviews.

H1 concerned whether it was necessary for the team participating in the workshop to be taught the basics of platform business models before the sprint. The hypothesis further stated different options of how this knowledge was taught to the team. As can be seen in Error! Reference source not found., the experts almost unanimously agreed on the necessity for the team to be taught the basics of platform business models. The options stated in the hypothesis for this knowledge transfer were to do a workshop, a MOOC, or include a platform expert into the sprint. Here, the MOOC and the inclusion of a platform expert received negative feedback, while the workshop format drew positive responses. The expert responding negatively to the inclusion of a platform expert argued a platform expert might destroy the team’s dynamic. In contrast, the experts supporting the knowledge transfer through a workshop stated this workshop offered an opportunity of onboarding the whole team before the sprint started.

H2 questioned whether the incorporated canvases should be introduced to the team beforehand. The experts refuted this hypothesis by stating it would be sufficient if the moderator introduced the canvases in the corresponding exercises. However, this decision required that the moderator could explain the canvases in an adequate time and has the knowledge to answer any questions the team may have regarding the activities.

H3 stated that the platform design tools chosen for the Smart Platform Design Sprint comply with the requirements to provide the team with a profound understanding of the platform’s ecosystem. Thus, it enables the team to find a fitting platform solution. The choice of platform design tools is an essential part of this research, and the interviewed experts unanimously support the choice of tools as fitting for the stated requirements.
H4 corroborated through the expert interviews aimed to change the order of the exercises. The idea behind this new order of the exercises stemmed from a time-saving aspect, which was supported by four out of the five experts.

H5 assessed the choice of using the MVP Canvas from a different platform design tool. The choice to use an MVP Canvas, which categorized assumptions made during the solution-finding process into desirability, feasibility, and viability was unanimously supported by the experts.

The Smart Platform Design Sprint

The Smart Platform Design Sprint (SPDS) is created to discover and verify platform business models. It implies that the team already knows that the result of the sprint is a platform. The premise of knowing that the solution the team works towards is a platform solution was stressed by some experts. The platform-specific activities of the SPDS are implemented on Monday afternoon and Wednesday morning. Monday afternoon’s exercises focus on understanding the platform’s ecosystem, using the Platform Ecosystem Canvas, Ecosystem Entity-Role Portrait, Motivation Matrix, Transaction Board, and Learning Engine. On Wednesday, the team uses the Platform Experience Canvas and Minimal Viable Platform Canvas to elaborate on the chosen solution(s) or solutions and make them more tangible in addition to the storyboarding exercises.

Figure 2. Activities throughout the Smart Platform Design Sprint

Source: Based on the Google Design Sprint 2.0.
Figure 2 shows an overview of the exercises and the order in which they are done in the SPDS. The orange borders highlighted bullet points show the added platform-specific activities. Since these exercises combined require one additional day, the SPDS was extended to a five-day process while the Google Design Sprint 2.0 is a four-day process.

Preparations

In addition to the preparations necessary for any design sprint, the SPDS also includes an onboarding workshop before the sprint week. The onboarding workshop is a result of the experts’ responses to H1. The goal of the onboarding workshop is to teach the team about the particularities of platform business models. Furthermore, the onboarding workshop provides room for any questions the team may have about the sprint week. According to the experts, enabling this interaction is essential if this is the first sprint run in a company. Adding this workshop might lower the resistances within the team to the SPDS.

Monday Afternoon: Understanding the platform’s ecosystem

After defining the goals for the sprint, the team then moves on to exercises, which revolve around understanding the platform’s ecosystem. Compared to the Google Design Sprint 2.0, it means the Lightning Demos and Solution Sketching are moved to Tuesday morning. Subsequent exercises are also done at a later point in time due to the insertion of exercises on Monday afternoon.

The exercises are specifically structured that the team first identifies entities present in the ecosystem and before becoming more detailed, focusing on only one or two entities by the end of Monday. This approach is consistent with the platform architecture by Parker et al. (2016), who suggested to focus on a single core interaction when building a platform, and then adding new interactions around this core interaction.

In the first step of understanding the platform’s ecosystem, the team identifies the entities present in the ecosystem using the Platform Ecosystem Canvas. After the identification of the entities present in the ecosystem, the team analyses how and what kind of value is exchanged between the entities or within the same entity. The tool the team uses for this analysis is the Motivation Matrix, which displays the value exchanges on a single page. Following this exercise, the Motivation Matrix provides the information the team needs to make an educated decision about the relationship for the platform’s core interaction. Because the following exercises mainly revolve around the entities forming the core relationship of the platform, the team evaluates the motivation of these entities to participate in the ecosystem. It fosters a better understanding of the essential roles to consider when designing a platform.

In the next step, the team lists the different transactions already happening or could happen in the core relationship in the Transaction Board. The last exercise with the purpose of understanding the platform’s ecosystem is the
creation of the **Learning Engine Canvas**. This exercise again includes all entities identified in the **Platform Ecosystem Canvas**.

With these exercises done, the team has a general understanding of the entities in the platform’s ecosystem and the entities forming the core relationship of the platform. This understanding allows the team to find a fitting platform solution on the following day.

**Tuesday**

Tuesday only experiences change due to the insertion of exercises on Monday afternoon. In the SPDS, the team does the **Lightning Demos** and **Solution Sketching** on Tuesday morning, followed by the selection process to choose the best solution in the afternoon.

**Wednesday**

From the previous days, the team now understands the platform’s ecosystem and a winning sketch(es) for the platform solution. The next step is to consolidate the information from all previous exercises in one comprehensive knowledge point. This consolidation is done through the creation of the platform experience for the core entity, using the **Platform Experience Canvas**.

With the knowledge collected and displayed in a single canvas, the team then shifts its mindset from finding a platform solution to prototyping and testing this solution. Thus, the team and the moderator have the choice to create a **User Test Flow** as a basis for the storyboard. The reason why the creation of the **User Test Flow** is optional is that the **Platform Experience Canvas** might already display the information needed for the creation of the storyboard.

From the final storyboard, the team should be able to deduct all the information it needs to efficiently build the prototype on Thursday. In the last exercise for Wednesday, the team also creates an **MVP Canvas**. While the storyboard shows how the prototype must be built, the **MVP Canvas** displays what elements of the prototype must be tested and how these parts are to be tested. The importance of defining measures before the user tests regarding the exact time to corroborate or refute assumptions comes from the team’s tendency of getting attached to their prototype. This attachment results in continuing with the development of the product, even though in some cases it should be stopped (Viki et al., 2019).

**Thursday**

The exercises on Thursday do not differ from the prototyping processes described in the original Google Sprint and Google Design Sprint 2.0. However, since there are new exercises added into the process, the prototyping is now done on Thursday instead of Wednesday. Since the team builds a platform, the team can make use of software to create mockups, simulating clickable areas such as buttons. In the expert interviews, one question was whether the experts have used similar software, what it was, and whether they
would recommend it. Four of the experts recommended the software Marvel for the creation of a mockup.

Friday

With the platform specific exercises added into the sprint, the sprint now has a duration of five days. The process of testing the platform prototype remains unchanged and does not differ from the execution described in the Google Design Sprint 2.0.

**Figure 3. Overview of the Discovery and the Validation Process of Digital Platform Business Models**

![Figure 3](image)

Source: Based on the Google Design Sprint 2.0 and Brecht et al. (2020).

Figure 3 shows how the Smart Platform Design Sprint (SPDS) and the Smart Platform Experiment Cycle (SPEC) combined can be used for the platform business model exploration. The SPDS shows the fast discovery of a verified platform business models while the SPEC is responsible for the validation of the discovered platform business model.

**Discussion**

This research was set out to design a process that advanced a rapid platform exploration with the goal to retrieve a verified platform business model. The solution was found in the Smart Platform Design Sprint. It is a process model that combines the steps of the Google Design Sprint 2.0 with the knowledge of platform design tools to discover and design a platform business model. The Google Design Sprint 2.0 is characterized as fast and efficient in the areas of ideation, designing, prototyping, and testing the solution to an identified problem. The platform design tools are useful components to consider in the creation of digital platform business models. Conclusively, the SPDS itself was verified with the results of expert interviews.
The interviewed experts unanimously described the developed Platform Design Sprint as a tool that can be valuable to anyone looking to discover and design a platform business model, verifying the process. Another important objective to fulfill when designing the sprint was the duration. Knapp et al. (2016) note that there is a loss of continuity when a sprint extends a duration of five days. One of a sprint’s main characteristics is its speed and efficiency, and with a loss on continuity comes a loss of efficiency. With the SPDS being a five-day process (including an onboarding workshop), this restraint has been fulfilled, and the SPDS is able to retain the efficiency of the original Google Sprint. Additionally, this research revealed that there are low costs and short commitment needed for the sprint. The costs focus on employees being kept from their day-to-day tasks and their salaries being paid. Salaries and opportunity costs are the main cost drivers of the SPDS. Additional costs only accrue for the required office supplies, catering, possibly the room for the sprint, and lastly the software used to create the platform prototype. Since the main cost drivers are salaries and opportunity costs for lost business, the SPDS is especially attractive for start-ups, as salaries are likely lower compared to employees in a corporate setup. Especially, when the start-up is recently founded and still searches for a profitable business model to scale (Blank and Dorf, 2012, p.20).

Regarding the mechanisms of the SPDS, the first set of platform-specific exercises on inserted Monday afternoon. Here, the team aims to understand the platform’s ecosystem using a variety of tools, which are displayed in Error! Reference source not found. and Error! Reference source not found.. This insertion moves the solution sketching process to Tuesday morning, and subsequently, selecting the best solution to Tuesday afternoon. After Tuesday, the exercises remaining from the Google Design Sprint 2.0 revolve around the storyboard, the blueprint for the prototype. Since the prototype needs a full day to be built, it must be moved to Thursday. It results in available time for additional exercises on Wednesday, which is used for the Platform Experience Canvas as the first exercise of the day and the MVP Canvas as the last exercise done on Wednesday.

Furthermore, some of the exercises are marked as optional, as displayed in Error! Reference source not found. and Error! Reference source not found.. The choice to define these exercises as optional is based on redundancy. Creating a map on Monday morning helps to align the team’s views and the goal it is working towards. However, the information displayed in the Map is likely to be displayed similarly as in the Platform Experience Canvas, which is scheduled for Wednesday morning. Doing the Map helps team to align their views but is still marked as optional. A team might already be aligned about the challenge and could save time by skipping the exercise.

Similarly, the User Test Flow does most likely not display any information that the Platform Experience Canvas does not already show. However, the User Test Flow has been developed specifically to prepare the team for the creation of the Storyboard. Along the same line explaining the Map, the team can choose to skip this exercise if it feels like all the information necessary for
the Storyboard is included in the Platform Experience Canvas. Alternatively, if the team would like to prepare the information more specifically for the Storyboard, the team can choose to do the User Test Flow before moving on to creating the Storyboard.

Moreover, the platform prototype is coherent with the platform architecture by Parker et al. (2016), who suggest establishing the platform for one core interaction and then add interactions around this core interaction over time. For new platforms, the exercises chosen for Monday afternoon guide the team from identifying the entities in the platform ecosystem to choosing a core relationship and a core entity within the core relationship to build the platform. However, if the team is looking to add a new interaction to an existing platform, the SPDS can be used in the same manner. When choosing a core relationship on Monday afternoon, the team could simply select the new interaction and add it to the existing platform.

As an alternative to teaching the team fundamentals of platform business models during the onboarding workshop, the team could also do a MOOC on this topic. There are free MOOCs available on different platforms like edx.org, where people can enroll in the offered courses. MOOCs offer the flexibility for the participants to choose when and where to study the material from the course (MOOC.org, 2021). One of the experts refuted the idea of using a MOOC to teach the team the basics of platform business models. However, due to the additional flexibility, the option of using a MOOC to teach the team is not ruled out for the SPDS. If the MOOC is chosen, there should be a time slot in the onboarding event for asking questions a Q&A concerning the MOOC learnings.

Additionally, two of the experts stressed the importance of a debriefing exercise at the end of each sprint day. Although debriefing is not specifically mentioned in the Google Sprint methodologies, the experts expressed debriefing as an essential component for the moderator to cater the sprint to the team’s needs.

As debriefing exercises, the retrospective in Scrum can be used as a fundamental, which is based on the Scrum retrospective. The experts stated that it is important in any sprint, that the team is aligned and working towards a common goal. As stated by the experts, the goals are to get feedback about the sprint day from the team, which allows the moderator to adapt to the team’s needs and wishes. The two Scrum retrospective exercises the moderator can use are, for example, the “KALM, Keep, Add, Less, More”-retrospective or “Liked, Learned, Lacked, Longed for”-retrospective (Caroli, 2021; Jens Richterich, 2021).

Limitations

Even though the design of the process overall is a success, as indicated by the positive feedback of the experts during the interviews, there are some aspects of the SPDS that cannot be controlled by process design. The SPDS relies on a competent moderator to guide the team throughout the week.
using various canvases throughout the sprint week, the team relies on the moderator to introduce and explain the canvases appropriately. If the moderator lacks the necessary competencies, there is a chance of the sprint turning into a failure. The significance of the moderator was also pointed out by the experts during the interviews.

Other limiting factors for the SPDS are cultural differences. The original Google Sprint was developed in the USA and naturally represent the local culture. However, business is conducted differently in other countries and company culture also varies across companies. One example of how cultural differences may limit the SPDS was brought up by one of the experts during the interview. While the original Google Sprint aims for a realistic prototype, one expert experienced that Germans tend to provide higher quality feedback on prototypes. This behavior is based on the tester not wanting to give negative feedback on a prototype someone has spent a lot of time and effort on.

Generally, it should be emphasized that the SPDS should only be run if the team knows that they are working towards a platform solution. If this is not known before the sprint, a possibly better fitting solution may be discarded. Furthermore, the SPDS has not been verified beyond the expert interviews. Multiple experts stated the importance of testing the Platform Design Sprint in practice. Include experience from the application of the process will elevate the SPDS’s status from being a verified theoretical concept to a validated process applicable by startups and companies in their business model exploration activities.

Outlook

The Smart Platform Design Sprint described in this paper applies the platform design tools. However, with new platform design tools being released in the future, there may be more suitable tools available to incorporate in the SPDS. An example for a new tool is the new iteration of the Platform Innovation Kit, the Platform Innovation Kit 5.0.

Other components to consider in future research are canvases featuring additional elements essential in the platform business model, such as filters. Filters can facilitate high value by enhancing the interaction between consumer and producers. Including an activity dedicated to a platform’s filters would add further value to the SPDS.

Lastly, the SPDS has not been tested in practice yet. Applying the sprint in a real-world scenario would provide more valuable insights into its applicability in the real-life setting. This experience is needed to see whether the crafted process works as intended. With the knowledge gained from applying the SPDS in practice, a new iteration of the SPDS can be developed with adjustments according to the learnings from the application.
Conclusion

The Smart Platform Design Sprint is an innovative tool enabling a start-up or established company to design and verify a platform business model within one week. By combining the Google Sprint 2.0 with platform design tools, the SPDS inherits the Google Sprint’s speed and efficiency, and the necessary platform-specific expertise for the design and verification of a platform business model. The new process was developed iteratively and further enriched with expert knowledge. It results in a tool applicable in the digital business model exploration focusing on extracting a verified business model with the completion of the discovery step, which is required to enter the second validation step.

References


