

# Executing Design Sprints for Digital Innovation with Incumbents

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The Design Sprint has proven highly effective in incumbent organizations for fostering digital innovation and collaboration in structured, time-limited settings. This article uses a single case study with a brewery and beverage company to show how a Design Sprint can achieve numerous added values for digital innovation in a traditional organizational structure. The key finding of the article is that participating in a Design Sprint enables incumbents to develop key innovation capabilities, navigate challenges, and foster a cultural shift toward digital innovation through structured, fast, and effective prototyping processes, ultimately aligning with the demands of a dynamic, technology-driven environment. The practical relevance of the article lies in actionable guidance on conducting Design Sprints, emphasizing their potential to accelerate digital innovation processes, foster collaboration, and overcome organizational barriers.

Keywords: digital innovation; design sprint; innovation method; incumbent firm

## Introduction

Incumbent firms face significant challenges in navigating transformative processes, particularly when driving digital transformation through digital innovation (Galliers et al., 2020; Oberländer et al., 2021). Hierarchical structures, as well as rigid and inefficient decision-making processes, make it difficult for incumbents to quickly adapt to demands for new digital solutions, mainly when their core business focuses on physical products (Haskamp et al., 2023; Kiefer et al., 2021). Traditional innovation processes in incumbents are often optimized for long-term efficiency and stability, which conflicts with the agile and experimental approaches required for digital innovation (Kohli & Melville, 2019; Oberländer et al., 2021). Further, organizational silos (i.e., a strict responsibility-driven separation between departments) hinder the interdisciplinary collaboration necessary for the success of digital initiatives (Galliers et al., 2020; Kreuzer et al., 2022). Last, the organizational culture of incumbents entails a rather risk-averse

mindset, which limits the willingness to make fast and bold investments in new digital technologies (Galliers et al., 2020; Haskamp et al., 2023).

In response, researchers and practitioners have advanced ideas on how incumbents can create, expand, and establish deliberate innovation actions that help them overcome their specific barriers. One idea suggests drawing on the notion of design by highlighting its potential to stimulate creativity and critical thinking through the structured framing of problems as well as modeling and testing of potential solutions (Klenner et al., 2022; Magistretti et al., 2021). In this context, a concrete approach refers to adopting Design Sprints. A Design Sprint is a structured, multi-day, and time-constrained process for rapidly validating ideas and solving critical business problems. Drawing on techniques from Design Thinking (e.g., human-centered design) (Magistretti et al., 2021) and agility (e.g., iterative and incremental processes) (Larman, 2004), Design Sprints bridge the gap between both by integrating iterative problem-solving, idea generation, prototyping and testing in a compressed timeframe (Magistretti et al., 2023; Wangsa et al., 2022). While Design Sprints have proven effective across various organizational types, they are particularly promising for digital innovation within incumbents, where overcoming legacy inefficiencies and fostering a cultural shift toward agility is paramount (Haskamp et al., 2023; Lindquist et al., 2023).

Despite the growing interest in Design Sprints, there is limited empirical research that explores their specific effects in the context of digital innovation in incumbents. This study addresses this gap by investigating the following research question: *How can Design Sprints be leveraged to accelerate digital innovation processes in incumbent firms, and what benefits do they generate?*

To answer this question, we empirically investigated a real-world project implementing a Design Sprint. As a mixed team of three researchers and one practitioner,

we applied a Design Sprint to a globally operating brewery and beverage company (henceforth BREW). BREW has over 7.000 employees and achieved an annual turnover of 2.0 billion euros in 2023. BREW places great value on its personal sales channels, which reach thousands of customers, and aims to digitally support its sales processes and staff. We conceptualized, prototyped, and evaluated a digital innovation for BREW's operations within the Design Sprint. More precisely, we developed a digital application for mobile devices to support BREW's sales staff before and during customer meetings to improve overall sales performance. The sales team's tasks, including retail and wholesale, primarily involve managing customer relationships, negotiating deals, and closing sales (e.g., new business, upselling, cross-selling). The situation is unique as we aim for digital innovation for internal stakeholders (i.e., sales staff) and describe far-reaching implications for incumbents. BREW works in traditional organizational structures and applies agile innovation methods to a small extent. The targeted solution refers to the reliance on internal cross-team and -department feedback and is therefore under critical scrutiny. The digitally affine employees have never participated in a Design Sprint. By systematically collecting and analyzing field notes, we explored how BREW leveraged a Design Sprint to develop a digital solution to enhance its sales processes.

This paper contributes to the theoretical and practical discourse on digital innovation by offering empirical insights into more effective innovation processes within incumbents. We provide actionable guidance for practitioners on how Design Sprints can support digital innovation in incumbents. Based on BREW's experiences, we deliver practical advice for successfully planning and executing Design Sprints, enabling incumbents to navigate the complexities of a rapidly changing digital landscape.

## **Design Sprints for Digital Innovation in Incumbents**

Unlike traditional innovation, which may focus on incremental changes within well-defined boundaries, digital innovation involves creating and applying new technologies that disrupt existing business models and processes (Kohli & Melville, 2019). These disruptions blur traditional boundaries between organizations, products, and industries and alter how value is created, delivered, and perceived (Hund et al., 2021). A critical barrier is that many departments and employees, especially in incumbents, do not recognize the value of digital innovations, mainly when the core business is performing well, and the workforce has limited digital expertise (Vial, 2019). This situation, compounded by high operational demands, low innovation competencies, and prioritization of digital transformation, can create a challenging cycle of stagnation.

To break this cycle, the success of digital innovation builds on three fundamental principles that have always been part of innovation but become much more relevant in the digital context (Lokuge et al., 2019; Nambisan et al., 2020). First, there is a need to continuously engage with and integrate the targeted users. In their most effective state, digital solutions are deeply intertwined with the activities of the users they are supporting (Franzò et al., 2023; Johansson et al., 2021). This makes it necessary to purposefully align the design of a digital solution with the requirements and problems of users (often referred to as human- or user-centricity). Second, the creation of ideas requires interdisciplinary expertise. In particular digital innovation processes benefit from people with diverse professional backgrounds that contribute technical, design, conceptual, and business experiences and skills (Guinan et al., 2019; Kohli & Melville, 2019). Last, ideas must be quickly prototyped and tested to analyze their potential and identify flaws. Compared to physical products, it is often much easier to build an early prototype for a digital solution that simulates its usage, e.g., through the mock-up of a front-end (Ciriello et al., 2018; L.

Przybilla et al., 2022). This allows one to continuously challenge whether the design of a digital solution aligns with user needs.

While the value of these principles has been demonstrated in practice (e.g., by BigTech companies like Amazon or Google), our knowledge of how they can be fully leveraged in any incumbent, particularly those with physical products, is still growing. In essence, we know that organizations must restructure their ways of driving innovation in their internal and external environment (Hund et al., 2021; Kohli & Melville, 2019) and that employees must develop specific skills for digital innovation (Buck et al., 2021). To do so, one approach suggests that design can help incumbents become more user-centric, agile, and innovative (Wangsa et al., 2022). As the most prominent representative of this idea, Design Thinking has emerged as a promising method to establish a (digital) innovation process that aligns with the three principles while equipping employees with many new techniques (Przybilla et al., 2018). However, Design Thinking is often criticized for its lack of concrete guidance for executing the overarching process, where a selection of techniques is largely left to its applicant (Wangsa et al., 2022).

Following a narrower scope than Design Thinking, the Design Sprint method has been discussed with interest since its development by Google employees in 2012 (Knapp et al., 2016). A Design Sprint is a multi-day, step-by-step, and time-constrained process for validating ideas and answering critical business questions to reduce the risk when bringing a new product, service, or feature to the market (external) or organization (internal) (Banfield et al., 2015; Knapp et al., 2016). During a Design Sprint, experts propose solutions for identified problems, build prototypes, and test these with users and other stakeholders. The Design Sprint combines innovation, behavioral science, and business strategy elements. It has been successfully applied in numerous contexts and can be used for various challenges and teams (Magistretti et al., 2020; Magistretti et al., 2023).

We show the rough sequence of a 4-day Design sprint as proposed by the design agency AJ&Smart (2021) and the goals and key steps of the four days in **Fehler! Verweisquelle konnte nicht gefunden werden.**

Monday	Tuesday	Wednesday	Thursday
<p><b>Understand the problem</b></p> <ul style="list-style-type: none"> <li>- Gather knowledge from experts</li> <li>- Characterize the problem</li> <li>- Pick a goal for the week</li> </ul> <p><b>Generate many solutions</b></p> <ul style="list-style-type: none"> <li>- Get inspired by existing solutions</li> <li>- Sketch ideas</li> <li>- Refine ideas</li> </ul>	<p><b>Decide on an idea</b></p> <ul style="list-style-type: none"> <li>- Understand all ideas</li> <li>- Vote for exciting features of the ideas</li> <li>- Decide on one idea</li> </ul> <p><b>Illustrate the user journey</b></p> <ul style="list-style-type: none"> <li>- Sketch the user journey</li> <li>- Refine the user journey</li> <li>- Integrate ideas from the whole process</li> </ul>	<p><b>Build a prototype</b></p> <ul style="list-style-type: none"> <li>- Decide on a prototyping tool</li> <li>- Focus on key features and the most important steps of the user journey</li> <li>- „Fake it till you make it“</li> <li>- Prepare the user tests</li> <li>- Pre-test</li> </ul>	<p><b>Test the solution</b></p> <ul style="list-style-type: none"> <li>- Conduct user tests</li> <li>- Document feedback and comments</li> <li>- Present the results of the user tests</li> <li>- Develop an action plan for the next steps</li> </ul>

Figure 1. The sequence of a 4-day Design Sprint (AJ&Smart, 2021)

Design Sprints have a unique purpose within innovation. They are more compact and focused than Design Thinking but also more holistic than a method like rapid prototyping, which targets a specific innovation step (Wangsa et al., 2022). While it has been discussed that Design Sprints are particularly helpful in the early stages of idea generation and validation (Magistretti et al., 2021), they can be applied multiple times throughout the innovation process (Knapp et al., 2016). Further, considering the sequence shown in Figure 1, a Design Sprint covers most innovation steps - from problematization and ideation to prototyping and testing - albeit in a highly reduced and time-constrained version with an interdisciplinary team. Design Sprints, therefore, blur the boundaries in and around traditional innovation processes in multiple ways.

On the one hand, they blur boundaries between innovation steps. They facilitate the creation of a prototype as early as possible so that well-founded decisions are made on the continuation of an idea. In subsequent innovation steps, they help to constantly challenge and revise the previously developed understanding of user problems, explore

alternative design options for the solution, (re-)build usable prototypes, and maintain user.

On the other hand, Design Sprints create an interactive boundary object that facilitates collaboration between departments and the users of the solution (Magistretti et al., 2021; Magistretti et al., 2020). The concept of boundary objects was originally introduced by Star and Griesemer (1989) and further elaborated by Leigh Star (2010). Boundary objects are artifacts, methods, or representations that are flexible enough to adapt to the specific needs and constraints of various stakeholders, yet robust enough to maintain a common identity across these groups. In organizational settings, they help translate knowledge across different domains and facilitate coordination without requiring consensus (Leigh Star, 2010). Carlile (2002) extended this concept to the field of innovation and product development, showing how boundary objects support the integration of diverse types of knowledge and help overcome cross-functional barriers. In this sense, the Design Sprint becomes not only a process for structured innovation but also a mediating object that enables productive collaboration among actors with different expertise, perspectives, and interests.

These characteristics make Design Sprints particularly useful for digital innovation in incumbents. Design Sprints are highly user-centric due to the iterative integration of user feedback in the process (Wangsa et al., 2022). They build on interdisciplinary teams, addressing the presence of rigid hierarchies and organizational silos in incumbents. Further, Design Sprints focus on creating prototypes as tangible artifacts for cross-functional discussions and benefit from the fact that digital solutions can be prototyped more easily.

In sum, despite valuable contributions to our knowledge of design sprints (Magistretti et al., 2021; Magistretti et al., 2020; Magistretti et al., 2023), there is still

room for further exploration. Most importantly, we need to better understand how Design Sprints contribute to digital innovation in incumbents. While the general relation between Design Sprints and digital innovation is clear – as outlined above – a more detailed and empirically backed analysis of how Design Sprints should be applied and what benefits they induce is missing. Filling this gap in our knowledge base is relevant to researchers and practitioners alike. In terms of research, the application of Design Sprints is an emerging phenomenon through which we can study and better understand the potential of design methods (Magistretti et al., 2021) and the role of boundary objects in driving successful digital innovation (Kohli & Melville, 2019). In terms of practice, the high failure rate of digital innovations of more than 90% shows that organizations in general and incumbents in particular still need help (Lokuge et al., 2019). Although Design Sprints do not represent a universal remedy, they can be an essential building block for transforming incumbents into agile and digital innovation-focused organizations.

### **Research Design**

In alignment with Phillippi and Lauderdale (2018), we followed a qualitative approach to systematically collect and analyze field notes around the application of a Design Sprint for digital innovation at BREW. We (three researchers and one BREW manager) created the field notes during our involvement in preparing and applying the Design Sprint method based on our observations and interactions with the participants of the Design Sprint. The focus of our field notes was to gather insights into the behaviors of Design Sprint participants, team dynamics, and decision-making to provide a rich understanding of the method's application, while ethical considerations, e.g. for data anonymization, were strictly adhered to. Besides, we collected data on the internal organizational context, including basic information (e.g., data collection dates, organizational demographics), technical environment (e.g., virtual meetings), and resources (e.g., budget, personnel).

We also took notes on the organizational culture, employees' perceptions of the Design Sprint, and existing workflows to assess factors influencing the method application.

After each meeting and during the execution of the Design Sprint, each author individually recorded field notes on whatever observations struck them as interesting and relevant. We continuously compared our notes to find similarities and differences and discussed whether subjective impressions aligned with the general understanding of the entire author team or related to existing knowledge on Design Sprint and digital innovation in the literature. This critical reflection encouraged us to assess our observations, subjective feelings, and reduce biases (Mauthner & Doucet, 2003; Watt, 2007). As a result, we were able to better understand the motivation for a Design Sprint at BREW and to identify those activities that we found particularly important and helpful during the (1) planning and training, (2) support and facilitation, and (3) documentation of the sprint. Further, we created a list and description of the benefits of the Design Sprint that we observed for the participants in particular and BREW in general.

## **Ingredients for a Digital Brewery**

### ***Motivation for a Design Sprint at BREW***

The Design Sprint at BREW aimed to improve the internal reporting structure. Using digital capabilities and resources, the outcome of the Design Sprint should be a validated concept (e.g., prototype) for an internal reporting tool that improves the activities of the sales staff. The sales coordination team entrusted with this task belongs to the sales department and is responsible for the sales processes (henceforth: COORD). COORD has to deal with extraordinary tension. On the one hand, it provides the required reports to the sales department and thus operates as an internal service provider addressing the needs of the sales staff. In a classic sales-driven company such as BREW, this is a challenge as the

sales staff have high – sometimes heterogeneous - expectations, which they communicate vocally. Further, non-digitally affine employees often need help formulating their needs regarding digital technologies used during sales. On the other hand, software development for reporting processes is done by the IT department and influenced by existing regulations and data structures. Here, COORD depends on the input of internal IT department, which perceive the existing services as functionally sufficient and classically provide only a few resources for further development and innovation. When creating reports, COORD is constantly caught between two stools and must coordinate the expectations of the (non-digitally affine) sales department and the IT department’s restrictions (with constraints in the IT service landscape). COORD, thus, faced a conflict of goals and interests that cannot be resolved in existing and traditionally grown structures. We illustrate the situation of COORD in Figure 2.

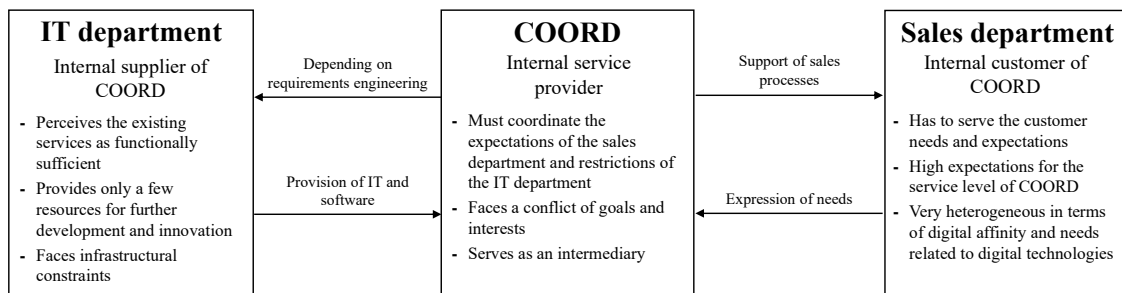


Figure 2. Situation of COORD

Considering the presented situation, a Design Sprint was the appropriate approach to overcome obstacles at BREW and to develop a user-oriented service for the sales staff. During a 4-day Design Sprint, an interdisciplinary team had to develop a concept for a user-optimized digital report and test it with real users, i.e., existing sales employees, as a requirements artifact for resource-saving. To do so, the Design Sprint was split in three phases (Table 1): *Planning and training*, *support and facilitation*, and *documentation*.

Table 1. Key activities and outcomes of the three phases of the Design Sprint project

Planning and training	Support and facilitation	Documentation
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Key activities	-	Defining and scoping the question and goal for the sprint	-	Setting expectations and allocating roles	-	Documenting the results and learnings from the sprint
	-	Orchestrating a sprint team	-	Fostering a just-do-it mentality	-	Communicating the outcome
	-	Conducting awareness sessions	-	Following the Design Sprint Approach while being open to flexible adaptations	-	Distributing outcomes throughout the organization
	-	Conducting method training sessions				
Key outcomes	-	Clearly defined sprint question	-	Engaged and value-assured sprint participants	-	Documented results and sprint steps
	-	Sprint team composition	-	Usable prototype	-	Communicated sprint results and mindset
	-	Basic understanding of the method in the sprint team	-	Evaluated concept for a digital innovation	-	Organization-wide awareness and openness

### ***Planning and training before the Design Sprint***

Due to the lack of experts and training programs in the field of Design Thinking at BREW, all participants in the Design Sprint had no experience and methodological knowledge of how to run a Design Sprint or other Design Thinking methods. This was a significant challenge in the planning and preparation of the Design Sprint. As a Design Sprint has a tight schedule and is conducted under time pressure, there is not enough time during the Design Sprint for detailed explanations and introductions of new tools and methods to the participants. This is particularly challenging as the participants had no prior experience in, for example, designing and building user stories or prototypes. Thus, many stakeholders were skeptical and suspicious of the new approaches and tools. The participants of the Design Sprint struggled with high levels of uncertainty when dealing with unknown approaches and tools.

Additionally, the adequate administrative preparation of the Design Sprint presented some challenges. First, a suitable and well-defined question for the Design Sprint had to be found. The question had to be neither too narrow nor too broad to be successfully addressed within the 4-day Design Sprint. Second, a proper heterogeneous and interdisciplinary Design Sprint team had to be assembled. Employees had to be available and bring the necessary expertise from different areas. The Design Sprint,

therefore, must be prioritized sufficiently high in BREW to ensure that the necessary resources are available for the execution of the Design Sprint. Besides the Design Sprint team, suitable interview partners who agreed to speak openly and give honest feedback had to be found.

To address the challenges appropriately, we invested much effort in preparing the Design Sprint and training the employees on the method. Thus, to create acceptance and understanding of the method, we held two half-day method training sessions on Design Sprints in advance. In addition to the Design Sprint Team, we invited employees from other teams who were interested in the method. By explaining the structure and process of a Design Sprint during the training sessions in detail, we were able to reduce uncertainty regarding the planned four days. Further, the training session facilitated excitement about the Design Sprint, trust in the method, and the overall motivation of the participants. For the training sessions, we chose interactive elements to convey the spirit of a Design Sprint in the best possible way. To do so, we used selected methods of the Design Sprint, e.g., the how-might-we method. In addition, the participants were already accustomed to voting mechanisms or timeboxing during the training, which are fundamental techniques used during a Design Sprint. We recorded all training sessions on video and made them available to BREW's employees via the internal e-learning platform. This allows employees to refresh their knowledge and build up long-term methodological knowledge. In addition, non-participating persons had the opportunity to obtain the same level of knowledge.

We asked the participants to familiarize themselves with the tools used during the Design Sprint to reduce explanation time. One week before the sprint, the participants received an introductory guide to a digital whiteboard tool, which we also used in the preparatory meetings. Additionally, the participants received an interactive one-hour

training session on prototyping using the prototyping tool we planned to apply during the Design Sprint. We noticed that it is essential for the participants to attend the training session on prototyping and work through the materials provided, as otherwise, participants had problems keeping up with the speed of the rest of the team.

Besides the training sessions, we held a workshop with the core team of the Design Sprint to establish the sprint's goal, determine its scope, jointly formulate a broad direction for the sprint question, and identify suitable interview partners. We then invited all interview partners to the Design Sprint in advance.

### ***Support and facilitation during the Design Sprint***

In addition to the planning and training, the support and facilitation of the Design Sprint in BREW also brought some challenges related to the participants and process.

During the Design Sprint, participants had to get used to a new way of working, i.e., independently developing new solutions with little room for discussion. All participants must think about new ideas, take responsibility, break free from the restrictions and limitations of their daily work, and, instead, trust the new method. Thus, participants were initially uncertain and reticent. They were reserved at the beginning and afraid to present their ideas to the rest of the participants or to make mistakes in developing the prototype. However, during the independent work slots, everyone was confident in participating actively. To reduce uncertainty, we communicated the various roles of those involved in the Design Sprint, e.g., the decision-maker, with all implications to all participants initially. Thus, we created a clear set of expectations and tasks for each participant. Experts responsible for individual parts of the solution were additionally appointed during the Design Sprint to create clear responsibilities. Thus, we distributed the tasks, i.e., during creating the storyboard or the prototype, to work more efficiently. Additionally, we provided the participants with clear work instructions, i.e., short written

task descriptions, for each step during the Design Sprint. Thus, the participants could reread the task description at any time in case of uncertainty, and queries could be reduced. We motivated them to contribute and try out their ideas and thoughts to foster the desired just-do-it mentality during the Design Sprint. Besides, great importance was attached to a suitable team composition and team management during the Design Sprint. Employees from interdisciplinary teams were included to avoid being trapped as little as possible in existing restrictions from daily business and to gain new perspectives. In case of doubt, they did not know the (perceived) restrictions. Moreover, we included stakeholders in the Design Sprint who would be involved in the later implementation of the results. Thus, stakeholders in the relevant teams could be won for the solution early.

Besides the participants, the Design Sprint process itself posed some challenges. Immediate accountability for own ideas and solutions, the high time pressure, and the tight time boxing during the Design Sprint caused high stress. Additionally, we used various (digital) tools to conduct the Design Sprint digitally and to create a prototype. Getting to know many new tools further increased the stress factor perceived by the participants. Besides the concrete task definition, a timer for the remaining time was visible to the participants. This allowed the participants to better allocate their working time independently, making time-keeping much easier. However, it is important not to view the Design Sprint as too rigidly scheduled. During the Design Sprint, minor adjustments were made whenever it seemed appropriate. However, when making such adjustments, the underlying goal of the Design Sprint must remain. Regular reflections on the sprint goal and the sprint questions were also helpful. Additionally, the established organization's clear responsibilities and sometimes steeply perceived hierarchies were challenging. Including an executive as a decision-maker in the Design Sprint posed the challenge that the remaining participants might be influenced by the ideas and opinions

of the executive during voting or make decisions too quickly without forming their own opinions based on complete information. Therefore, we tried to anonymize decisions or move the voting of the decision-maker to the end.

### ***Documentation after the Design Sprint***

The results and learnings from the Design Sprint were documented to provide a clear overview of the process and gained insights. Another critical step was to communicate the outcomes and disseminate the solution across the organization, with a particular focus on handing over the prototype to the IT department for further implementation.

Beyond the immediate prototype, long-term effects were achieved by promoting openness and awareness of innovation methods throughout the organization, such as the Design Sprint. To further establish the format in the organization, further Design Sprints were carried out afterward. Therefore, an employee was trained after the initial Design Sprint as a method expert to anchor the knowledge in the organization in the long-term. This initiative supported the development of a lasting innovation mindset and the sustainable integration of the Design Sprint methodology into the incumbent's innovation processes for digital solutions.

### **Moving a Brewery: Benefits of Design Sprints**

We summarize the identified benefits of Design Sprints in incumbents in Table 2 and describe them below in detail by elaborating on our observations during and after the sprint. It is important to note that we propose these benefits based on a single case and revert to related limitations in the last section.

Table 2. Benefits of Design Sprints in incumbents

<b>Benefit</b>	<b>Description</b>
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Interactable artifact	<ul style="list-style-type: none"> <li>- Rapid - much faster than usual - development of a prototype</li> <li>- Prototype can be used to discuss ideas and evaluate critical features</li> <li>- Robust analyses and results through user tests</li> <li>- Prototype and insights from the Design Sprint facilitate subsequent project phases</li> </ul>
Individual growth	<ul style="list-style-type: none"> <li>- Participants develop a deep understanding of the Design Sprint's subject, i.e., becoming experts</li> <li>- Participants learn from each other as everybody must contribute and present ideas</li> <li>- Increase motivation and confidence to present own ideas and to give feedback on other ideas</li> </ul>
Improved team synergy	<ul style="list-style-type: none"> <li>- By bringing in a facilitator, the team can entirely focus on the problem at hand</li> <li>- By placing the user and its needs at the center of all thinking and doing, the team can learn to free itself from restrictions</li> <li>- The team can focus their joint and organized efforts on one subject to rapidly generate many ideas and prototype one solution</li> </ul>
New capabilities	<ul style="list-style-type: none"> <li>- Design Sprint as a new capability by conducting training in advance</li> <li>- Low-barrier entry point to Design Thinking as the Design Sprint combines many of its techniques</li> <li>- Experiencing the effectiveness of innovation methods and increasing self-efficacy</li> </ul>
Improved cross-team collaboration	<ul style="list-style-type: none"> <li>- Integration of all related teams and departments in the sprint, e.g., in the sprint team or as experts for the interviews</li> <li>- Overcoming often existing internal barriers between organizational units</li> </ul>
Higher acceptance of the solution	<ul style="list-style-type: none"> <li>- Positive word-of-mouth effect</li> <li>- Participants (and test persons) as advocates (and demanders) for the developed solution</li> </ul>

Given the goal of improving the internal reporting structure, the Design Sprint at BREW succeeded. During the 4-day Design Sprint, we conceptualized the structure of a key report the sales employees use for preparing and conducting meetings with customers. As the central artifact of the Design Sprint, we transferred the concept into a functioning digital prototype for the report, successfully validated it with user interviews, and gained robust results for further solution development. In a traditional project setting at BREW, building such an initial prototype would have taken multiple weeks or months. In turn, the results of the Design Sprint go beyond a theoretical concept and yield an interactable artifact that COORD can use to discuss ideas with the sales and IT departments and to evaluate its key features. Consequently, COORD concluded the use of the prototype developed in the Design Sprint as a basis for their following actions for implementation. Besides, during the Design Sprint and follow-up sessions, we observed

that the Design Sprint approach also comprises benefits other than the interactable artifact.

First, we noticed that the Design Sprint led to the *individual growth* of the participants. Because the steps of a Design Sprint are structured so that everyone in the team must contribute, there is no way to opt out of the process. Instead, a Design Sprint continuously challenges everybody to dive deeper into the subject matter, suggest their own, and evaluate other ideas. As all ideas are presented on an equal footing, this approach leverages motivation and confidence during the Design Sprint and enables the participants to learn from each other. Finally, we ensured that every participant conducted at least one user test as a lead interviewer, increasing their confidence after receiving positive feedback from the salesperson.

Second, the Design Sprint allowed the team to *improve synergy* and *develop new capabilities*. Most importantly, the team could quickly observe what they can achieve if they concentrate their joint and organized efforts on one subject. Thus, participants could experience the evolution of a self-created innovation (including real-world feedback) and increase their self-efficacy of digital innovation. By bringing in a facilitator who guides and moderates the overall process, they can focus entirely on the problem during the four days of the Design Sprint. We continuously challenged the team to free itself from restrictions and place the user and its needs at the center of all their thinking and doing. As we had training on the Design Sprint approach before the actual implementation, all participants, particularly COORD, now hold the Design Sprint as a new capability that they can apply to any challenge in the future. Further, the Design Sprint represents a low-barrier entry point to Design Thinking and combines many corresponding methods into a coherent process. In the future, this will allow the team to select individual methods of

the Design Sprint to address challenges of lesser magnitude. For example, they can use group interviews to better understand other problems of the sales staff in the future.

Third, we noticed *improved cross-team relations* and a higher *acceptance of the solution* as Design Sprints facilitate overcoming often existing internal barriers between organizational units. To leverage this effect, the participants in the Design Sprint must come from several teams. As a result, the teams directly involved in the sprint must also deal with implementing the concept afterward. At BREW, the IT department sent one person to participate who knows all the background to the concept developed during the Design Sprint and can advocate for it with colleagues. Further, we included the sales department by inviting selected employees for the group interview and the user tests. The group interview participants were motivated to tell the sprint team about their problems and challenges regarding the sales report. They were even more pleased when presented with a prototype that addressed these problems and challenges during the user tests three days after the interviews. During ten user tests on the last day of the Design Sprint, we gave the participating sales employees the prototype to explore and test it themselves. The users overwhelmingly praised the overall concept and suggested additional ideas for improvements. Further, on a scale of 1 to 10, we asked them to rate the result (10 = very good) and how disappointed they would be if the final product did not build on the current concept (10 = very disappointed). On average, they answered both questions with 9 points. In doing so, we gained more advocates for the developed concept at BREW. In particular, the participants of the user tests were so satisfied with the prototype that they started to promote it with their colleagues after the interviews were done (as they assumed the prototype to be already an existing real-world solution). While this word-of-mouth effect naturally creates a high level of expectation, it also increases the acceptance of the solution, as the sales team is actively involved in the process.

In sum, we conclude that a Design Sprint leads to benefits far beyond the solution developed in the process. The Design Sprint is an adequate instrument for overcoming organizational hurdles and unlocking digital potential. It fosters the integration of multiple (internal) stakeholders and the application of unconventional methodologies and approaches, which have an inherent value for efficiently using scarce organizational resources. Incumbents often need to pay more attention to these benefits, making it even harder to succeed with digital innovations. The unconventional way of conducting a Design Sprint generates much attention from incumbents. Still, the quick production of results means that this attention can be met with something presentable of value.

Despite the numerous advantages, a Design Sprint should be chosen thoughtfully and deliberately, as not every challenge is suited. A Design Sprint reaches its limitations when the problem is either too vague or overly complex to be addressed effectively within the tight four-day timeframe. Problems that require extensive data collection, long-term analysis, or highly technical solutions may not be suitable, as the methodology is designed for rapid prototyping and fast validation. Similarly, a lack of stakeholder engagement, insufficient expertise within the team, or resistance to new approaches can hinder the effectiveness of the process. Additionally, situations where the outcome does not benefit from cross-disciplinary collaboration or where there is insufficient agreement to implement solutions may diminish the value of using a Design Sprint.

## **Conclusion**

Engaging in digital innovation is essential for incumbents to remain competitive in a changing, technology-driven environment (Bharadwaj 2000; Nambisan 2017). However, incumbents are especially prone to long-lasting innovation projects and often lack key digital innovation capabilities. Design Sprints offer an effective solution by enabling organizations to concentrate efforts, develop actionable prototypes, and gain rapid

insights through validation, aligning with the needs of user in a dynamic digital landscape. Our study reports on learnings and insights from a Design Sprint at the globally operating incumbent BREW. We show how prior planning and training improves sprint quality and facilitates capability development, how we tackled challenges during the sprint, and what benefits accrue to an organization beyond the prototype.

From a **theoretical perspective**, this study contributes to the theoretical debate surrounding digital innovation by offering an empirical investigation of this phenomenon. While prior research (e.g., Magistretti et al., 2021; Wangsa et al., 2022) has highlighted the potential of Design Sprints in abstract or generic terms, our case study concretely shows how prior planning and training improve sprint quality and facilitate capability development, offering empirical evidence on the specific mechanisms through which Design Sprints enable digital innovation in traditional firms. More specifically, our findings confirm prior assumptions that Design Sprints foster interdisciplinary collaboration and user-centricity (Franzò et al., 2023; e.g., Guinan et al., 2019) and illustrate how these abstract benefits manifest in real-world organizational practices. For example, including users and stakeholders throughout the sprint directly supports the claim that successful digital innovation requires deep user integration (Franzò et al., 2023). At the same time, our findings contribute new insights by showing how Design Sprints serve as a catalyst for capability development and cultural change within an incumbent. Participants not only created a validated prototype but also developed innovation confidence, method knowledge, and advocacy for future digital initiatives. By framing the Design Sprint as both an innovation process and an boundary object, we extend the theoretical understanding of how such methods can overcome typical barriers within digital innovation, such as rigid structures, silos, and insufficient user-centricity in incumbents (Galliers et al., 2020; Oberländer et al., 2021). Boundary objects are artifacts

or processes that enable collaboration across diverse social worlds by being flexible enough to adapt to individual needs while maintaining a common identity (Leigh Star, 2010; Star & Griesemer, 1989). In the context of innovation, Carlile (2002) emphasized their role in overcoming knowledge boundaries between functional domains. In our case, the Design Sprint provided such a shared frame of reference for heterogeneous departments (e.g., sales, coordination, and IT), thereby enabling joint problem-solving without requiring full consensus or prior alignment. This theoretical lens helps explain why the Design Sprint not only produced a validated prototype but also succeeded in aligning stakeholder perspectives, fostering collaboration, and triggering organizational learning in a siloed environment. Additionally, the paper analyzes why conventional innovation processes often struggle to adapt to the rapidly evolving demands of the digital era. By unpacking the possibilities of the Design Sprint, we highlight the need for new theoretical approaches and applicable methods for conducting digital innovation. This work, therefore, serves as a stepping stone for future research aimed at designing more effective innovation processes that can keep pace with the dynamic nature of digital technologies.

From a **managerial perspective**, the study contributes actionable insights for practitioners by emphasizing the role of innovation methods, such as the Design Sprint, in fostering digital innovation within incumbents. These methods enable organizations to streamline innovation processes, producing quicker and more tangible outcomes. This provides managers with a practical roadmap for effectively leveraging such approaches to support and implement their digital transformation strategies. Furthermore, the study contributes a detailed and practice-oriented guide to conducting Design Sprints grounded in real-world challenges and experiences. Outlining the key steps, necessary preparations, and ways to handle uncertainties supports practitioners in successfully planning and

executing Design Sprints. This comprehensive guidance not only makes the methodology more accessible within organizations but also encourages broader adoption by enhancing its credibility among internal stakeholders.

Considering our contributions, we want to shed light on the limitations of our study that stimulate further research opportunities based on our results. One key limitation of this study is its focus on a single use case, which restricts the generalizability of the findings and limits insights into the specific conditions under which the method is effective. Future research could address this by analyzing multiple use cases across different organizations, allowing for comparisons based on characteristics such as organizational structure, project type, and the type of digital innovation. Another limitation lies in the study's emphasis on short-term outcomes, leaving the long-term effects of implementing the Design Sprint unexplored. Longitudinal case studies could offer valuable insights into how such methods evolve within organizations over time and how they influence processes, cultural mindset, and sustained innovation. These avenues for further research provide a broader understanding of the method's applicability and contribute to its adaptation and optimization in varying contexts.

In sum, we noticed many positive effects of Design Sprints, which especially foster a much-needed cultural shift for digital innovation and have the potential to break down barriers towards novel innovation approaches in incumbents. Further, we found that the organization must be open to new (digital) ways, explore and understand the requirements arising from a rapidly changing environment, and use new tools and methods to navigate in a digital world. Such a cultural change must be communicated broadly from the leadership level into the organization to reduce mental barriers and provide sufficient resources (i.e., people and money). The new mindset must be exemplified by managers, who act as role models that motivate their employees and teams

to try new approaches. We hope our results motivate practitioners to try a Design Sprint in their organization and help them improve their results. Researchers are invited to use our report as an example of the positive impact of structured innovation methods and new forms of collaboration.

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