Foresight-Driven Service Design

Empowering Event Businesses with Proactive Resilience towards Futures

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Abstract

This thesis examines how strategic foresight can support service design processes to develop strategic, future-ready services, and ultimately achieve organisational resilience. This assessment is conducted through the Resilience Analysis Grid and a reflective approach, with the application of Research through Design methodology.

The research was carried out in the context of event management, more specifically, in event ticketing, through a collaboration with Ticketbutler. In the case study various strategic foresight tools were employed to explore their influence on traditional service design processes. The case study resulted in a regenerative service concept addressing Ticketbutler's vision and the future needs of their customers regarding waste management.

Ultimately, this thesis proposes a framework for a strategic foresight-driven service design process. This framework aims to integrate long-term thinking into service design, enabling organizations to anticipate changes and transform them into business opportunities.

This study reveals that by incorporating strategic foresight into service design, organisations can equip themselves with a strategic design process fostering long-term thinking. It also shows that through the proposed framework, organisations increase their abilities to anticipate and response to long-term adversity, therefore enabling them to foster strategic resilience, one of the distinct categories of organisational resilience.

Keywords

Service systems design, strategic foresight, foresight-driven service design, organisational resilience, strategic resilience, event industry, regenerative design

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We also want to express our gratitude to Ticketbutler, especially Mads Brøgger Kjer, along with other stakeholders within Ticketbutler. Their expertise and experience in the event management industry, combined with access to key clients, helped strengthen the project's foundation and provided valuable insights and opportunities for collaboration.

That brings us to expressing our thanks to all the key clients who took part in the interviews, contributing their valuable insights and time, as well as to all those who joined the user tests during the design process. Together, they helped us understand real user needs, develop realistic scenarios, and refine our concept to make it more defined.

Finally, we would like to extend a heartfelt thank you to our family and friends for their unlimited support throughout the project. Their love, patience, and encouragement contributed to making this thesis project much easier to execute.

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1 Introduction

In this chapter, an introduction to the thesis topic is provided. The chapter includes the outlining of learning objectives and proceeds to explore the project's context. The collaboration partner is introduced, and an initial problem statement is formulated.

The chapter is divided into the following sections:

1.1 Learning goals

1.2 Project Context

1.3 Focus Area

1.4 Reading Guide for This Thesis

This master's thesis, authored by Kinga Tóth and Rikke Juul Christensen, was undertaken as part of the Service Systems Design programme at Aalborg University Copenhagen, spanning from February 1st to May 24th, 2024. The project was supervised by Luca Simeone, an associate professor at Aalborg University.

The motivation behind this thesis project was to demonstrate our service design expertise in a context of a relevant challenge from the industry, ultimately aiming to successfully fulfil the requirements for graduation from the master's programme.

The thesis is centred around exploring the realm of the foresight mindset, along with the tools and methodologies associated with it, within the context of service design practices. Our goal is to find answers to what advantages foresight-driven service design could bring to businesses, in our case, in the event industry.

As Service Designers, our motivation to explore this topic arises from our prior experiences in designing services. During our internships at large corporations, we observed a growing interest in service design from the business perspective. However, we also identified a significant gap: service design often lacks strategic capabilities and long-term thinking. With our strong personal interest in corporate dynamics and business strategy, we believe that this thesis will enhance our strategic skills, enabling us to offer more comprehensive and forward-thinking solutions to companies as service designers.

1.1 Learning Goals

The learning goals of this thesis are based on both the official learning goals defined by Aalborg University (Aalborg University, 2023), and our personal learning objectives. These learning goals in the form of skills, knowledge and competences are expected to be met during the thesis project.

1.1.1 Official Learning Goals

Knowledge – The student(s) must acquire knowledge about:

- the appropriate methodological approaches to specific study areas.
- design theories and methods that focus on the design of advanced and complex product-service systems.
- the relevant literature in the Service Design field.

Skills – The student(s) must:

- work independently, to identify major problem areas and adequately address problems and opportunities.
- analyse, design, and represent innovative solutions.
- evaluate and address major organisational and business issues emerging in the design of a product-service system.

Competences – The student(s) must:

- master design and development work in situations that are complex, unpredictable and require new solutions.
- independently initiate and implement discipline-specific and interdisciplinary cooperation and assume professional responsibility.

1.1.2 Personal Learning Goals

The personal learning goals are outlined based on the project members personal and shared motivations.

- Take ownership of service design tools and methods to master and alter methods based on our project scope.
- Obtain knowledge, skills, and competences to effectively bring the disciplines of strategic foresight and service design together
- Collaborate with an external company in a co-creative environment.

1.2 Project Context

The focus of this project is to explore the foresight mindset and discipline, which includes associated tools and methodologies. The aim is to examine the advantages of integrating these elements into the service design process, advocating for a more long-term oriented approach. Service design is considered a future-oriented approach, aiming to shape and navigate towards outcomes that does not yet exist. However, it typically maintains a more focused and immediate perspective on how services can be designed and implemented in the near future (Løgager et al., 2021). Foresight, on the other hand, focuses on identifying and analysing long-term and future-gazing perspectives (European Foresight Platform, n.d.).

Additionally, resilience has become a popular buzzword since the pandemic (Grisley, 2020), reflecting its importance in adapting to change and crises. The event industry, in particular, experienced significant disruptions and transformations due to the pandemic. Therefore, the goal is also to explore whether integrating foresight into a design process could improve a company's resilience capabilities.

This complex challenge arose from the fact that we live in an era marked by rapid technological advancements, economic issues, geopolitical shifts, and environmental concerns (Arroyo, 2023). According to Accenture's Pulse of Change Index (2024, p. 3.), "the rate of change affecting businesses has risen steadily since 2019, by 183% over the past four years and by 33% in the past year alone. Most C-suite executives anticipate an even faster rate of change in 2024, but more than half say they are not fully prepared to respond". Consequently, organizations are confronted with exceptional challenges alongside promising opportunities (Hammoud and Nash, 2014), thus new ways of navigational approaches and methods are required to predict future needs.

As part of our exploration into the benefits of incorporating foresight into service design practices, we partnered with Ticketbutler, a scale-up business founded in 2017 by Mads Brøgger Kjer, Emil Brøgger Kjer, and Kyle Thomson in Copenhagen (Ticketbutler, n.d.). Ticketbutler is a young company dedicated to simplifying event management. They make handling name badges easy for event organizers and offer a seamless experience for attendees. The company specializes in on-site name badge printing for conferences and events, providing a stress-free check-in process.
Their on-demand printing solution eliminates the need for pre-printing name badges. With this technology, event staff can simply scan a guest's ticket, and a unique, personalized name badge is printed in seconds. This approach not only saves time but also reduces waste, making it both cost-effective and environmentally friendly. Combined with their premium event and ticketing platform, Ticketbutler gives customers full control over event management and ticketing processes.

1.3 Establishing a Focus Area

Through collaboration with Ticketbutler, there was a necessity to establish a focused area and formulate a clear problem statement. This alignment was crucial to ensure harmony with Ticketbutler's vision and future strategy, while also meeting our learning goals for the thesis.

In a series of exploratory meetings with the CEO of Ticketbutler, we pitched our research themes, requirements from the university, and personal interest to start the discussion on how it could align with their area of interests. The themes encompassed foresight, service design, resilience, and design thinking process with Ticketbutler. The CEO displayed considerable interest in these areas and acknowledging the importance of adopting a more long-term perspective, as well as exploring the potential of service design. Additionally, he expressed keen interest in sustainability, recognizing its current importance as a significant topic.
He proposed promising potential contexts in which to apply these themes. This included enhancement of the user experience of their physical product, the name-badge printer, optimizing their services and processes to prepare themselves for scaling and internationalization, and improvement of both internal and external processes.

During our meetings, one of challenges we identified is the risk of their physical product being easily copied. Therefore, it is crucial for them to distinguish themselves through the services they provide around it to keep their competitive advantages.

This led to a mutual interest in enhancing Ticketbutler's name-badge printing service to be future-ready with a focus on long-term thinking. Through ongoing refinement and iteration, we arrived at a shared understanding of the topic, resulting in a consensus on a problem statement that officially initiated our collaboration.

Initial problem statement:

How can we design a future-ready service for Ticketbutler around their name badge printer to enhance their competitive advantage and resilience?

Subsequently, throughout our collaboration, we aim to introduce an approach and mindset that could enable Ticketbutler to anticipate changes and turn them into business opportunities, thus maintaining their competitiveness and relevance in the event industry. The final deliverables should include a future-ready service concept delivered through service design tools, and a guideline for utilising exploratory foresight methods for continuous horizon scanning through scan cards.

1.4 Reading Guide

The following reading guide presents the overview of this report and its chapters.

Chapter 2: Literature Review

This chapter presents the theoretical foundation of the thesis, which leads towards the academic research question. In this chapter we give a thorough introduction to the *service design* discipline, describing its origins, evolution, values, and future directions. Furthermore, it includes the exploration of *foresight* and the domains of *resilience*. The chapter concludes with presenting a research question defined through a gap found in the literature around the joint exploration of the three topics, which will serve as the research focus for this master thesis.

Chapter 3: Methodology

This chapter describes how the design process will be tackled through the Double Diamond methodology to design a future-proof service for Ticketbutler based on the initial design brief. In addition, the chapter presents an overview of foresight tools that will be utilised throughout the project. Lastly, this chapter describes how the defined research question shall be answered.

Chapter 4: Design Case

This chapter documents the design process, which is used to explore the design brief and academic research question. The chapter is divided into sections defined by the four phases of the Double Diamond methodology (Discover, Define, Develop, Deliver). At the end of each section, an initial reflection is provided on the design process and the usage of the service design and foresight tools.

Chapter 5: Discussion

In this chapter, we discuss the academic research question of the thesis based on the key findings of the case study. It presents various reflections on the design process aiming answer how organisation resilience can be achieved through foresight-driven service design.

Chapter 6: Conclusion

This chapter provides a conclusion on the case study and the key learnings acquired through the project. It also provides an overview of the limitations faced and suggests potential future research for this project.

2 Literature Review

This chapter presents the theoretical foundation of the thesis, which leads towards the academic research question. In this chapter we give a thorough introduction to the *service design* discipline, describing its origins, evolution, values, and future directions. Furthermore, it includes the exploration of *foresight* and the domains of *resilience*. The chapter concludes with presenting a research question defined through a gap found in the literature around the joint exploration of the three topics, which will serve as the research focus for this master thesis.

This chapter will cover the following topics:

2.1 Service Design

2.2 Foresight

2.3 Resilience

2.1 Service Design

We use services every day. We take the bus to work, have our mails delivered by post, use internet services, make calls, and so on. But most of the time this usage is completely unrecognised unless something goes wrong during the service delivery process, thus we have a bad experience. This prompts us to consider understanding what service design is and its significance in the contemporary world. In this subchapter, we aim to understand through academic research most of all 1) the origin and definition of service design, 2) why service design is important and what values it can bring to organizations, 3) how we can interpret service design thinking and 4) the future of service design.

2.1.1 The Origins and Definition of Service Design

Services have been a fundamental part of human society for centuries, evolving in complexity as societies themselves developed. In ancient civilizations such as Egypt, Greece, and Rome, the employment of servants and the provision of compensated services were widespread practices (Beyer, W. C., 1959), demonstrating the integral role that services played in the daily life and economic systems of these societies.

However, this perception took a significant shift with industrialization. As the era prioritized the production of accessible, user-centred goods, the goods-dominant (G-D) logic emerged, reorienting economic and societal focus towards tangible products (Vargo, Lusch, 2004). The principle of this logic focuses on the transaction of goods, with services considered as a secondary or supporting factor and analyses services based on their differences from products. Here, services were described by the paradigm that characterizes them as intangible (cannot be touched or stored), heterogenic (variable and unique), inseparable (produced and consumed simultaneously), and perishable (cannot be stored for future use), commonly abbreviated as the IHIP paradigm (Zeithaml et al., 1985). However, in the 20th century another paradigm shift occurred as it was realised that value was not only embedded in tangible products but was co-created between the business and its consumers through services and experiences (Vargo & Lusch, 2004; Vargo & Lusch, 2008). This shift led to the formulation of the service-dominant (S-D) logic that considers services as an activity of value co-creating, thus the foundational unit of economic exchange (Penin, 2018, p. 21). According to Stickdorn et al. (2018, p. 29), based on the values of this logic, services can be described through 5 axioms:

1. Service is the fundamental basis of exchange.
2. Value is co-created by multiple actors, always including the beneficiary.
3. All social and economic actors are resource integrators.
4. Value is always uniquely and phenomenologically determined by the beneficiary.
5. Value co-creation is coordinated through actor-generated institutions and institutional arrangements.

Alongside the development of service-dominant logic, the concept of product service systems (PSS) also emerged, introducing a new perspective on integrating goods and services (Penin, 2018, p.25). In general, PSS can be described as “tangible products and intangible services designed and combined so that they jointly are capable of fulfilling specific customer needs” (Tukker, 2004).

PSS became an emerging model for businesses in response to addressing the challenges faced by corporations in aligning their production with increasingly complex demands in the global and information technology-driven market landscape. According to Morelli (2002), this shift from traditional product-centric strategies to systems that integrate products and services reflects the need for more sustainable and knowledge-intensive solutions. These systems, which include a combination of tangible products and intangible services, are designed to fulfil users' needs more comprehensively and sustainably. With globalisation and higher competition, PSS gained a lot of attention due to its reformation of value creation. Mont, O.K. (2002) argues that PSS provides competitive advantage through “the ability for ongoing innovation, enhanced design and quality, and personalized goods“.

Another significant moment in service history was marked by Shostack (1984) when she first mentioned the term “service design” in a publication for the European Journal of Marketing, marking the birth of service design. In the article, Shostack discusses the critical need for applying rational management techniques and systemic analysis to the development of new services and improvement of existing ones within the service industry [ibid], and thus proposing the concept of service blueprint to analyse service performance with a systemic approach. Service design, thus, in its early stages became a bridge in optimising customer experiences through touchpoints (Mager, as mentioned in Penin, 2018, p. 30; Zomerdijk and Voss, 2010) and was mainly associated as a discipline that arose from marketing and business development (Stickdorn and Schneider, 2015, p. 50). Finally, in 1991, Michael Erlhoff and Brigit Mager established service design as an individual design discipline at Köln International School of Design (KISD), that inherently brought the need for a unified definition of what service design is. However, the field of service design draws from multiple disciplines, including business, marketing, design, engineering, philosophy, among others (Catalanotto, 2018; Moritz, 2005, p. 48-49). As each discipline brings their own toolbox of methods, perspectives and terminology to the field, service design can be used and understood from multiple perspectives. On one hand, this complexity enriches this design discipline, on the other hand, it also complicates to specify a single, universal definition. Subsequently, a list of various definitions proposed by industry experts is provided to gain an overview and understanding of the discipline’s scope and objectives.

“Service design is the activity of choreographing people, infrastructure, communication, and material components of a service in order to create value for the multiple stakeholders involved.” (Mager, as quoted in Penin, 2018, p. 30)

“Service design helps to innovate (create new) or improve (existing) services to make them more useful, usable, desirable for clients and efficient as well as effective for organizations. It is a new holistic, multidisciplinary, integrative field.” (Moritz, 2005, p. 6)

“Service design helps organizations see their services from a customer perspective. It is an approach to designing services that balances the needs of the customer with the needs of the - business, aiming to create seamless and quality service experiences. Service design is rooted in design thinking, and brings a creative, human-centred process to service improvement and designing new services. Through collaborative methods that engage both customers and service delivery teams, service design helps organizations gain true, end-to-end understanding of their services, - enabling holistic and meaningful improvements.” (Miller, 2015)

"It is a human-centred, collaborative, interdisciplinary, iterative approach which uses research, prototyping, and a set of easily understood activities and visualization tools to create and orchestrate experiences that meet the needs of the business, the user, and other stakeholders" (Stickdorn et al., 2018, p. 27).

2.1.2 Service Design Thinking

Considering that there is no universally accepted definition of service design, another way of understanding what service design is through analysing service design thinking (SDT). According to Stickdorn (2015, p. 34), SDT is a way of thinking required to design services consisting of five core principles: it is user-centred, co-creative, sequencing, evidencing and holistic.

Firstly, as it has been specified through the S-D logic that service value is something that is being co-created between the users/customers and the service provider, SDT is described as a user-centred approach, meaning that services should be experienced through the customer's eye as services would not be able to operate without the involvement of the user. This indicates that SDT should be co-creative, where all stakeholders must be included to some degree in the service design thinking process. However, through the evolution of design, it has been decided by the designer to what level of degree users can and should be included in the design process, defining different roles for user.

According to Sanders and Stappers (2008) as described in Figure 1, initially, design was dominated by expert designers who viewed users as passive recipients of finished products, meaning that all decisions were made by the designers. This evolved into user-centred design, where designers began to consider user needs and feedback, but still maintained control over the creative process. Participatory design further shifted the paradigm by actively involving users in the design process, recognizing their contributions as equally valuable. The most inclusive approach, co-design, merges these philosophies into a collaborative effort where designers and users work together throughout the entire design process, leveraging collective creativity and blurring the lines between designer and user roles. This progression reflects a broader move towards democratizing design, emphasizing the importance of user involvement in creating more responsive and innovative outcomes which is reflected in SDT.

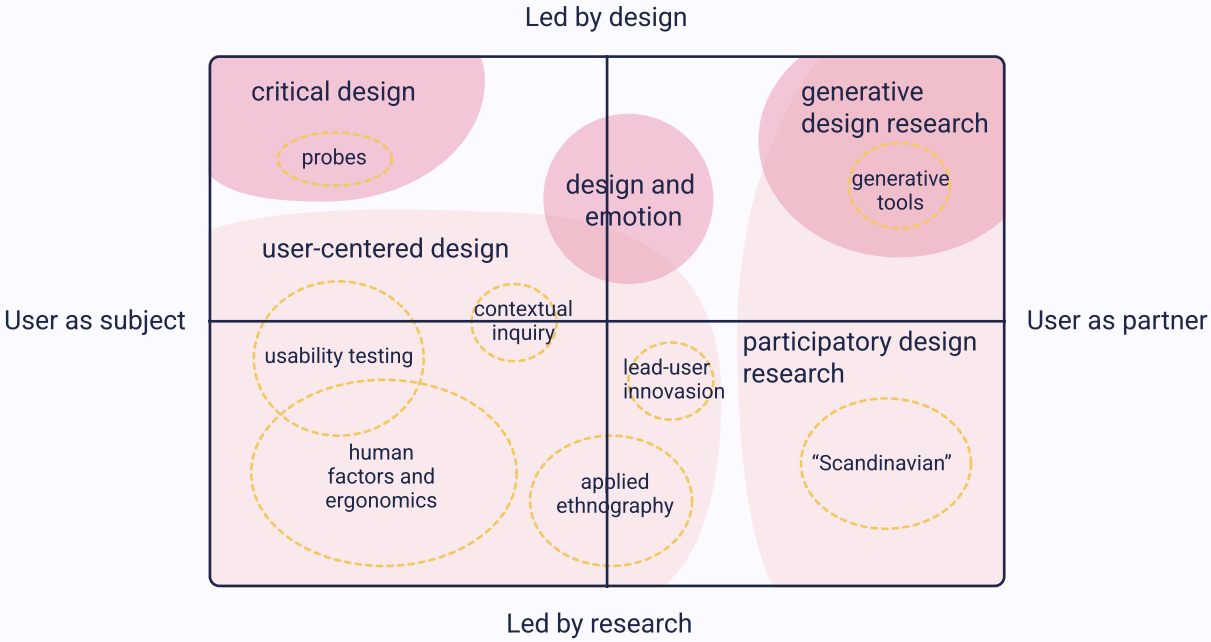

Figure 1: The spectrum of design methodologies focused on user involvement

The third principle of SDT is that services should be visualised as a sequence of interrelated actions distributed in time. This is crucial due to the dynamic nature of services. As services are developed in time, service quality is highly dependent on time management, and thus the orchestration of touchpoints in all stages of a service (Stickdorn, 2015, p. 40-41). This taps into the 4th guiding concept that service designers must adopt a holistic thinking and consider the entire environment of services. However, due to the intangible nature of service the latter would be challenging to achieve without the last principle which advocates for the importance of evidencing and translating the intangible into tangible through physical artifacts. This process should not be limited to designers visualizing services with tools like blueprints and systems maps but should also involve the users' perspective. Since service design advocates for providing seamless experiences, this often leads to services being unnoticed. To make experiences memorable and to generate appreciation and empathic engagement (Ibid, p. 42-43), utilising physical evidence or artifacts (such folded towels in a hotel indicating cleaning services) can prolong the service experience.

Considering the five principles of SDT, service design deals with a wide range of complexity and systemic thinking. This requires a creative and iterative approach to effectively identify and tackle problems. As Stickdorn, et al. (2018, p. 86.) highlight, one of the fundamental principles of design is to first identify the right problem before allocating resources to solve the problem right. Design thinking has been a widely adopted process for tackling undefined, so-called wicked problems, and has taken shape in various framework such as the British Design Council's Double Diamon Model (2005) or IDEO's 3-step process (IDEO, 2023). Even though these models often indicate a linear process, they should be used as a guiding force and trajectory to keep an overview of the processes while iterating between the various stages (Stickdorn & Schneider, 2015, p. 122). A set of tools are suggested to be used across the different phases, however, Stickdorn & Schneider (2015) highlight that these tools are meant to be used in any combination based on the objectives of the design phase and emphasise that the success of a project lies within finding a workable combination of tools and methods that can conceptualise, develop, and prototype ideas through an iterative process of gradual

improvement. Though, the most recognized and frequently utilized tools in service design encompass stakeholder/ecosystem maps, user journey maps, observation methods such as service safari, personas, service prototypes, service blueprints, etc.

2.1.3 The Values of Service Design

Reflecting on the insights provided by Service Design Thinking (SDT), its principles and inherited toolset, it becomes evident that service design offers multifaceted benefits and values to businesses that are strategic and transformative in nature. The adoption of the user-centric design thinking approach not only equips businesses to engage with a constellation of actors or stakeholder (be it users, customers, cross-functional team, or organisations) in the design process in a co-creative manner, but also transfers the focus from output to the entire process. According to Dilnot (1982), the concept of design frequently transcends the mere act of designing. Instead, it often refers to the outcomes of the design process (the products created) or the issues that instigate the design activity, or both. However, in contemporary literature (eg. Stickdorn & Schneider, 2015; Stickdorn, et al. 2018; Moritz, 2005; Penin, 2018) it has been highlighted that the real value that design brings lies within the ways of thinking, communication, and practices. These values ultimately can help cross-functional teams, users, and various stakeholders to acquire a common language through design, enabling organizations to not only design but also deliver services that are more cohesive, customer-centric, and aligned with the strategic objectives of the company, thus enhancing a company's competitive advantage through unique value propositions. This reflection underscores the transformative potential of service design in redefining how businesses conceive, design, and deliver services, emphasizing the value of a strategic, user-focused, and iterative approach to service innovation.

2.1.4 The Future of Service Design

With the shift towards the service-dominant logic, the values of service design have been reached capabilities not only in business development, but in the public sector as well. As designers, we constantly thrive to drive innovation and with that, make the world a better place, improving not only the life of people, but whole ecosystems. Mager and Heinemann (2020) emphasise that the driver for service design is our ability and courage to think critically and emphatically about social issues and to drive positive change in the world - especially in these times of turbulence. This expansion suggest that service design is growing not only on the operational but also on the strategic level (Ibid). However, this expansion brings further complexity and new challenges to the future of service design. According to Mager (2020), the field of service design is at a critical juncture, facing challenges that span the technological, ethical, sustainability, and organizational domains. Addressing these challenges head-on will require a coordinated effort from service designers to adapt, innovate, and embrace a holistic approach to designing the services of the future. While service design has been considered a future-oriented approach, aiming to shape and navigate towards outcomes that does not yet exist, it typically maintains a more focused and immediate perspective on how services can be designed and implemented in the near future (Løgager et al., 2021). This entails, that the adoption of forward-thinking methodologies is inevitable to achieve service innovation as a key component for business growth. Nevertheless, addressing the constantly changing, unpredictable, and intricate market trends, crises, conflicts, and significant shifts require innovative approaches to processes, roles, and systems, as Sebastiani and Paiola (2010)

suggest, to nurture value creation and endorse a mindset geared toward longevity and sustainability.

"The future lies in well-designed services".

(Moritz, 2005, p. 27)

2.2 Foresight

Contemplating what the future holds, whether it's tomorrow or beyond, has always been a source of uncertainty for those pondering such questions. Speculating about future events is a fundamental aspect of human nature, which naturally extends to the expectation that organizations and businesses engage in similar contemplation.

In this subchapter, we aim to delve into academic research to understand several key aspects: 1) why futures, why today 2) Why organisation should care about exploring the future 3) The origin and definition of foresight, 4) Design driven foresight.

2.2.1 Why Futures, Why Today

From a physics perspective, the future is defined as the period of time that is yet to come (Cambridge Dictionary, n.d.).

In this context, when discussing the future, we are essentially addressing the concept of change. The future is not solely a distant time ahead; rather, it encompasses the present moment. It is about examining what is currently evolving, deteriorating, flourishing, morphing, or mutating - essentially, what is actively shaping today's path toward future outcomes.

As early as the 1960s and 1970s, Peter F. Drucker was discussing the concept that we live in the age of this discontinuity, where change and uncertainty are the only constants (Drucker, 1992). This theory holds more relevance now than ever before, as we find ourselves in a multi-crisis era, marked by the simultaneous occurrence of multiple crises (United Nations, n.d.) or as Nicholas Arroyo, Partner & Head of Strategic Foresight at Manyone argues that we are living more in something like a Perma-crisis, suggesting a continuous state of crisis rather than occasional occurrences (Arroyo, 2023).

So, in terms of perma-crisis and global instability but also rapid technological shifts, we must accept the reality that we are now living in a world that is more interconnected and complex than ever before. We must learn to navigate this uncertainty and feel comfortable in it. Embracing the unknown is essential to embracing change and how fast it is changing.

2.2.2 Why Organisation Should Care about Exploring the Future

The next 3-5 years will bring 10 years' worth of change, because the speed of change has never been greater, more complex, or complicated, as argued by Mads Gustafson the Co-CEO of Manyone – a global strategy design company. He further emphasizes the relevance of this concept for organizations, highlighting how one could argue that "The future is already here, it's just not evenly distributed." This quote, often attributed to science fiction writer William Gibson, suggests that technological advancements and societal changes are already underway, but they are not uniformly experienced or adopted by everyone (Gustafson, 2024).

Research has consistently shown that companies encounter difficulties in adapting swiftly to discontinuous changes, often resulting in high mortality rates (Rohrbeck and Gemünden, 2011). This difficulty stems from the fundamental challenge of adjusting promptly to evolving environments. A study has highlighted the average lifespan of Fortune 500 companies (Geus, 1997) as less than 40 years, indicating their struggle to adapt and maintain competitiveness

and relevance over time (Rohrbeck and Gemünden, 2011). Consequently, there is a critical imperative for businesses to continuously renew their resources and adapt to the rapid pace of change in the global landscape.

Building upon this, organisations need to expand their awareness about the main forces shaping the world beyond their domain, because neglecting to consider changes and new developments outside one's domain can leave an organisation vulnerable to significant disruptions that could profoundly affect the business, particularly with a shift in customer needs, the emergence of new competitors, and the potential loss of identifying and seizing new opportunities. Arroyo (2024) supports this argument with a story of how a group of futurists in the 1860s, predicted that New York City would cease to exist within a century due to the overwhelming population growth and the resulting problem of horse manure in the streets. However, their prediction was proven wrong when the automobile replaced horses as the primary mode of transportation, solving the issue within decades. The story demonstrates the significance of expanding awareness and considering technological advancements outside one's domain as well as paradigm shifts.

After looking outside their domain, organisations should also narrow down to comprehending the dynamics shaping their own industry and domain of action, for much of the same reasons as outlined above. Understanding the technologies and changes shaping this landscape is crucial before delving into future customer values, needs, pains, and behaviours. This provides a solid groundwork for speculating on potential future value propositions that may not yet exist. With a broader perspective, organizations can make more informed decisions, as Arroyo continues to argue (Arroyo, 2023).

Highlighting another significant selling point for why organization should care about exploring the future is that future-prepared and vigilant firms have a 33% higher profitability and experience a 200% higher market capitalization growth compared to the sample average, as demonstrated by an analysis conducted by René Rohrbecka and Menes Etingue Kum in their study "Corporate Foresight and its Impact on Firm Performance: A Longitudinal Analysis" (Rohrbeck and Kum, 2018).

Exploring change can indeed be challenging for organizations. However, the next sections will delve into how foresight enables organizations to anticipate changes and navigate uncertainty effectively.

2.2.3 The Origins and Definition of Foresight

Within the literature, various terms are utilized to describe the 'art of looking at the future' activity, including futurology, technology forecasting, foresight, strategic foresight, and futures research, futures studies, technology assessment. Each term emphasizes different aspects of futures research (Berkhout et al., 2007).

The literature suggests a consensus that the field of foresight originated around the end of World War II (Hines, 2019). Additionally, an analysis by Bell (2003, p. 60-61) synthesizes the perspectives of various futurists on the origins of the field, summarizes it as follows:

"The collective activities of modern futurists, though reaching back to earlier times, became clearly visible in the second half of the 1940s and 1950s. By the mid-1960s, they took on many of the features of a social movement, began growing rapidly, and encouraged the self-identification of participants as futurists" (Ibid).

The modern use of foresight is often attributed to Japan's success in the 1970s, driven by research and technology. Beginning in the late 1960s, Japan initiated comprehensive technological foresight projects, leading to its economic development (Kuwahara, 1999). This approach inspired interest in national foresight initiatives among OECD countries in the 1980s and 1990s, with technologically advanced nations like Japan, Germany, South Korea, France, and Great Britain leading the way. Since 2000, smaller countries, new EU members in Central and Eastern Europe, and emerging economies in Asia and Latin America have also embraced national foresight projects (Miles et al., 2008a+b).

The idea of foresight is based upon several key assumptions: Firstly, multiple futures are possible, because future developments are uncertain and unpredictable. Secondly, change can be identified and the factors that drive change can be studied. Lasty, the future can be influenced (Rohrbeck, Battistella and Huizingh, 2015). However, the ongoing debate about the very nature and definition of foresight (Miles et al, 2008a) complicates the task of specifying a single, universal definition of foresight. Consequently, we provide a list of various definitions proposed by industry experts to enhance our understanding of the scope and objectives of this discipline.

"Futures research is the ability, the skill and art of describing, explaining, exploring, predicting and/or interpreting future developments, as well as assessing their consequences for decisions and other actions in the present" (Berkhout et al., 2007, p. 74)

"Foresight is a purposeful process of developing knowledge about the future of a given unit of analysis or a system of actors, which is aimed at action in the form of public or private policy making, strategizing and planning, and that foresight is frequently a participatory, involved and collaborative process" (Piirainen and Gonzalez, 2015)

"A systematic, future-oriented, analytical and interactive process that partly contributes to shared visions concerning long-term developments within science, technology, business and society and partly facilitates the alignment of relevant stakeholder groupings around desirable developments through relevant strategies, decisions and actions" (Andersen et al, 2014)

"Foresight is a systematic, participatory, future-intelligence-gathering and medium-to-long-term vision-building process aimed at enabling present-day decisions and mobilizing joint actions" (European Foresight Platform, n.d.)

"The process involved in systematically attempting to look into the longer-term future of science, technology, the economy and society with the aim of identifying the areas of strategic research and the emerging generic technologies likely to yield the greatest economic and social benefits" (Martin, p. 140, 1995)

2.2.4 Strategic Foresight

Foresight in an organisational context is often referred to as strategic foresight or cooperate foresight (Rohrbeck and Kum, 2018), though with nuanced differences. Van der Laan (2021) illustrates how strategic foresight integrates foresight capabilities, processes, and activities, aimed at informing strategic decisions. Figure 2 provides an adapted version of Voros' generic foresight framework (Voros, 2003) to support this understanding.

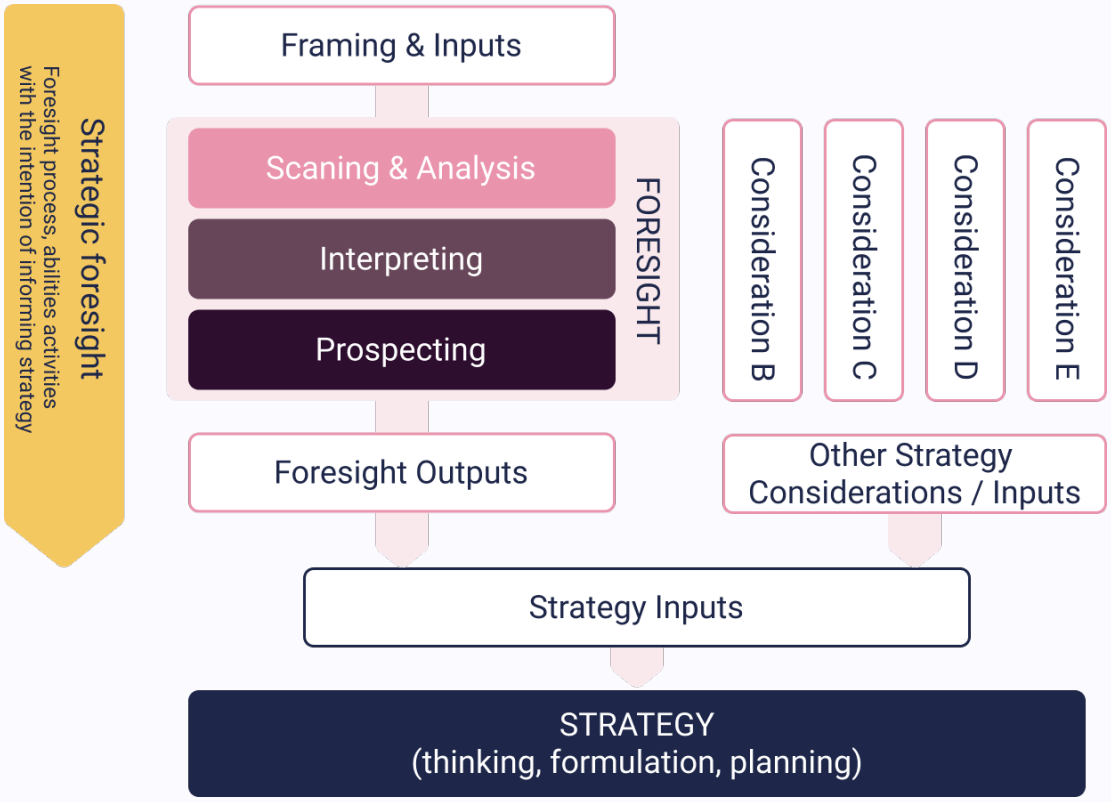

Figure 2: Adapted version of Voros' generic foresight framework to illustrate strategic foresight and the relationship between foresight and strategy (van der Laan, 2021)

As we aim to integrate foresight tools into our service design practices in an organisational context, moving forward, we will adopt the term "strategic foresight" and we find resonance with the following definition of strategic foresight:

"Corporate foresight permits an organization to lay the foundation for future competitive advantage. Corporate Foresight is identifying, observing, and interpreting factors that induce change, determining possible organization-specific implications, and triggering appropriate organizational responses. Corporate foresight involves multiple stakeholders and creates value through providing access to critical resources ahead of competition, preparing the organization for change, and permitting the organization to steer proactively towards a desired future" (Rohrbeck, et al., 2015)

It can also be very simplified as: "Strategic foresight is the art of understanding change and use that change to envision a better future" (Arroyo, 2024).

The most recognized and commonly used tools in strategic foresight include Technology forecasting: quantitative trend extrapolation, Technology assessment, Trend analysis, Scenarios, Delphi method, Backcasting, Roadmapping (Van der Duin, 2016).

2.2.5 Design Driven Foresight

In the realm of strategic foresight approaches, recent research has emphasized the evolution of design-driven foresight. This approach involves crafting immersive, multi-sensory, experiential, and engaging representations of the future, aimed at supporting strategic planning efforts (Buehring and Liedtka, 2018). Buehring and Bishop (2020) argues that integrating design with foresight empowers decision makers to effectively address both incoming changes from the external environment (inbound change) and changes the organization creates to have impact on the world (outbound change; strategy).

An approach called "foresight by design" (Figure. 3) integrates foresight and design methodologies. It utilizes design tools and capabilities within strategic planning to gain deep insights into the current reality and facilitate discussions among stakeholders to shape preferable futures. This approach targets the 5-15 year planning horizon and effectively bridges the traditional gap between organizational planning and foresight strategies (Buehring & Liedtka, 2018). Proponents argue that this integration can assist decision-makers in addressing uncertainty effectively as part of the strategic planning process. By exploring different possibilities, decision-makers can argue for selecting and integrating the most preferable or desirable futures (Buehring & Liedtka, 2018).

Figure 3: "Foresight by Design" (Buehring & Liedtka, 2018)

When discussing preferable or desirable futures, it refers to the recognition that multiple potential futures exist. The Futures Cone (Figure. 4) serves as a visual tool to illustrate the spectrum of potential futures. The alternative futures can be classified into potential (Everyting beyond the present moment), preposterous (Won't happen), possible (might happen), plausible (could happen), probable (likely to happen), preferable (should happen, or we want to happen), and projected (business as usual) (Voros, 2019).

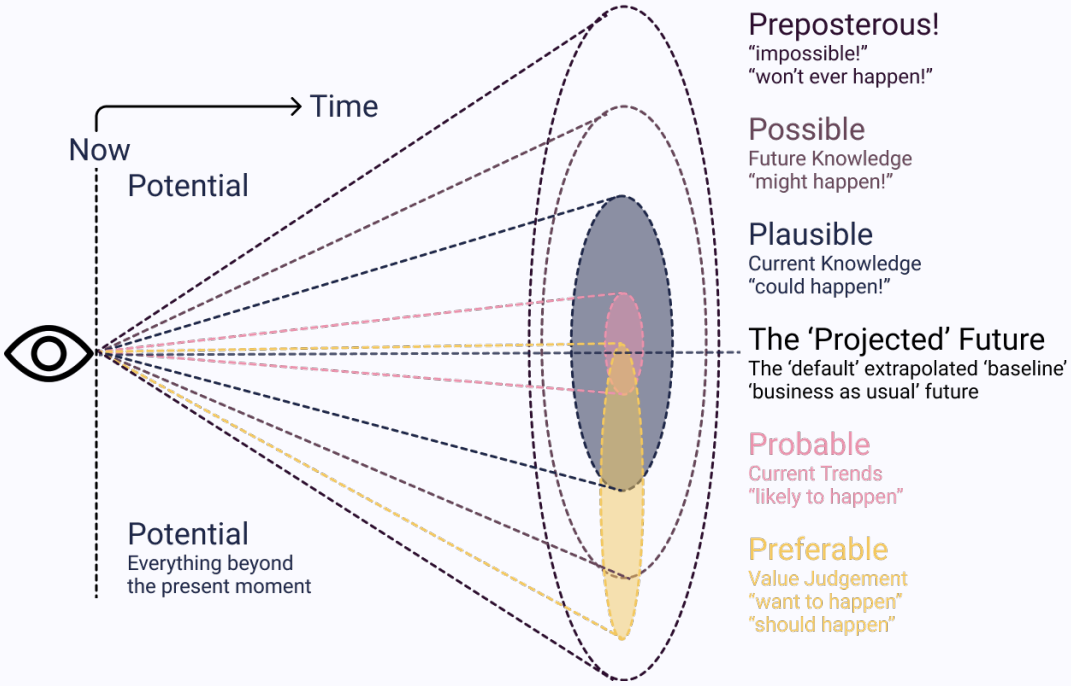

Figure 4: The 'futures cone'. Adapted and extended from Voros (2003)

The structured design driven foresight process (Figure. 5) that is being employed at Manyone aids in exploring future possibilities (Arroyo, 2024). The process consists of 6 steps that ends up answering 3 larger questions: first: "What is changing in our landscape?", second: "What could be our potential place in the future?", and third: "How do we get there?" The initial two steps involve scanning of trends and signals of change, followed by articulating which future insights are relevant for the specific context. Subsequently, the next two steps entail exploring potential scenarios and unfolding opportunities and risks. Finally, the last two steps involve articulating springboards and building and innovation pipeline before progressing to define strategies to act upon.

This design-driven approach has the potential to render strategic foresight more participatory, tangible, and hopeful (Arroyo, 2024). "Participatory" underscores the importance of activating employees across the organisation and promote cross collaboration to get a richer triangulation of views. "Tangible" pertains to the exploration of multiple futures and making them more tangible by building immersive experiences or speculative artefacts. This provides an opportunity to better anticipate the unintended consequences of new business opportunity, thereby cultivating resilience and relevance over time. Lastly, "hopeful" refers to using the power of a strong vision and exposing oneself to new ideas, recognizing that our experience influences our future (Arroyo, 2024).

Figure 5: A Design-Driven Foresight Process by Manyone (Arroyo, 2024)

Additionally, an academic paper titled "Escaping the 'Faster Horses' Trap: Bridging Strategic Foresight and Design-Based innovation" (Gordon et al, 2019) introduces a table (Figure 6) that describes the parallel processes of design thinking, as exemplified by The Stanford D-School model (Hasso Plattner Institute of Design, n.d), and strategic foresight, represented by the 3P's framework (Rohrbeck and Kum, 2018). This tables illustrates their potential integration to cultivate a forward-looking, future-informed design thinking process. The proposed framework (Gordon et al, 2019) integrates academically and practically validated strategic foresight processes into design thinking, while preserving the integrity of the existing design thinking model. This approach adds to the framework without attempting to overhaul or revise it. The authors argue that the benefits of strategic foresight takes design thinking beyond reliance on user observation, thereby mitigating its vulnerability to significant or unforeseen contextual changes (ibid).

Design Thinking process. Representative model: Stanford D-School	Strategic Foresight process Representative model: Three P's Framework	An Integrated, Foresight-informed Design Thinking process
1. Empathize Observe users' preferences and discover their needs, both overt and latent. This is also described as need-finding or deep "listening", or as undertaking a learning journey to tune into users' behaviours, preferences, and needs.	1. Perceive: Scanning Look for signals that indicate changes occurring in the external environment. Address the full force-field of change that will influence future outcomes within the relevant domain. This activity includes giving attention to and mitigating perceptual frames that degrade observation.	1. Empathize and Perceive Attend to user observation and empathy, but also expand observation to include scanning the full force-field of change factors in the external environment (while addressing the limits of perceptual frames in both activities)
2. Define Consolidate insight into what the core problem is to seeks a solution. or opportunity to be pursued.	2 Prospect (a) Sensemaking Interpret the evidence from the perceiving phase, understand its patterns, and build an informed understanding of the present, including implications for change. This involves sorting and evaluating change forces, looking at the strength of trends and to systemic, cultural or political forces that facilitate or block change. Prospect (b) Futuring Cast forward to create non-predictive narratives investigating alternative plausible future outcomes. This step involves fleshing out or otherwise reifying the different ways that important external forces may change the contextual environment. Key assumptions and development paths are varied, to create alternative future narratives to alternatives outcomes, each of which has different and important implications for design decision-making in the present.	2. Prospect then Define Interpret the evidence from the Empathise and Perceive phases, to build an informed understanding of the present, both from the user point of view and with reference to macro-externalities and potential leap solutions. Advance this understanding into alternative views of the future non-predictively, within which to consider the design problem. Therein develop a robust view of plausible future contexts that the design thinking process is addressing. Once this basis is achieved, define the design problem to be addressed or opportunity pursued.
3. Ideate Develop a wide range of solution ideas to the problem or opportunity defined.		3. Ideate Develop a wide range of solution ideas to the problem or opportunity defined. In addition to standard design ideation, use non- predictive alternative views of the future, containing alternative users and different needs, to stimulate and enhance ideation.
4. Prototvpe Narrow the product or service ideation toward an early solution, rendered as a sketch or early working model, allowing it to be appraised and improved.		4. Prototype As before, narrow the product or service ideation toward one or a small number of prototypes.
5. Test Follow an iterative process with users to learn what works, modifying the prototype until it is ready to move to final phase and scaled-up.	3. Probe Select from and test new courses of action via a process of experimental searching that looks for tangible proof of the potential success of new ideas and iteratively refines the emerging solution.	5. Probe and Test The iterative probing, testing, and refining step proceeds as before.

Figure 6: A table detailing the parallel processes of design thinking and an integrated, foresight-informed design process (Gordon et al. 2019)

A foresight-oriented service design approach has been proposed to foster longer-term thinking and sustainable practices (Løgager et al., 2021). However, the authors highlighted the necessity for further evaluation to validate the framework across various contexts of use. The framework (Figure 7) consists of two main phases: the scoping phase, during which the service designer conducts research, and the co-creative phase, wherein the service designer

and the client collaborate to explore various future service possibilities and assess their long-term impact.

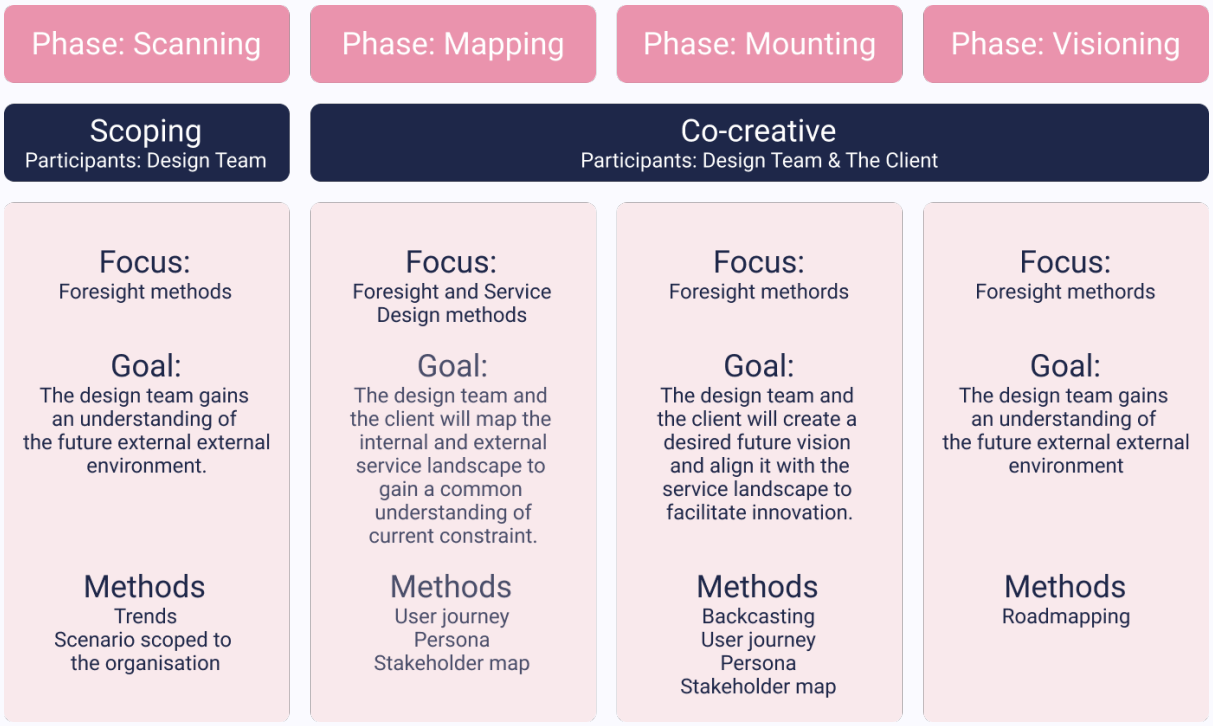

Figure 7: A foresight-oriented service design framework (Løgager et al., 2021)

The framework serves as a structured, step-by-step guide for integrating foresight methods into the design process, offering valuable insights into when and how to incorporate these techniques. Additionally, it functions as a learning tool, providing an understanding of how foresight methods influence both service design methodologies and the key phases of the design process. Through their research, the authors identified new ways of utilizing service design methods to facilitate change and anticipate the needs of future stakeholders (Figure 8).

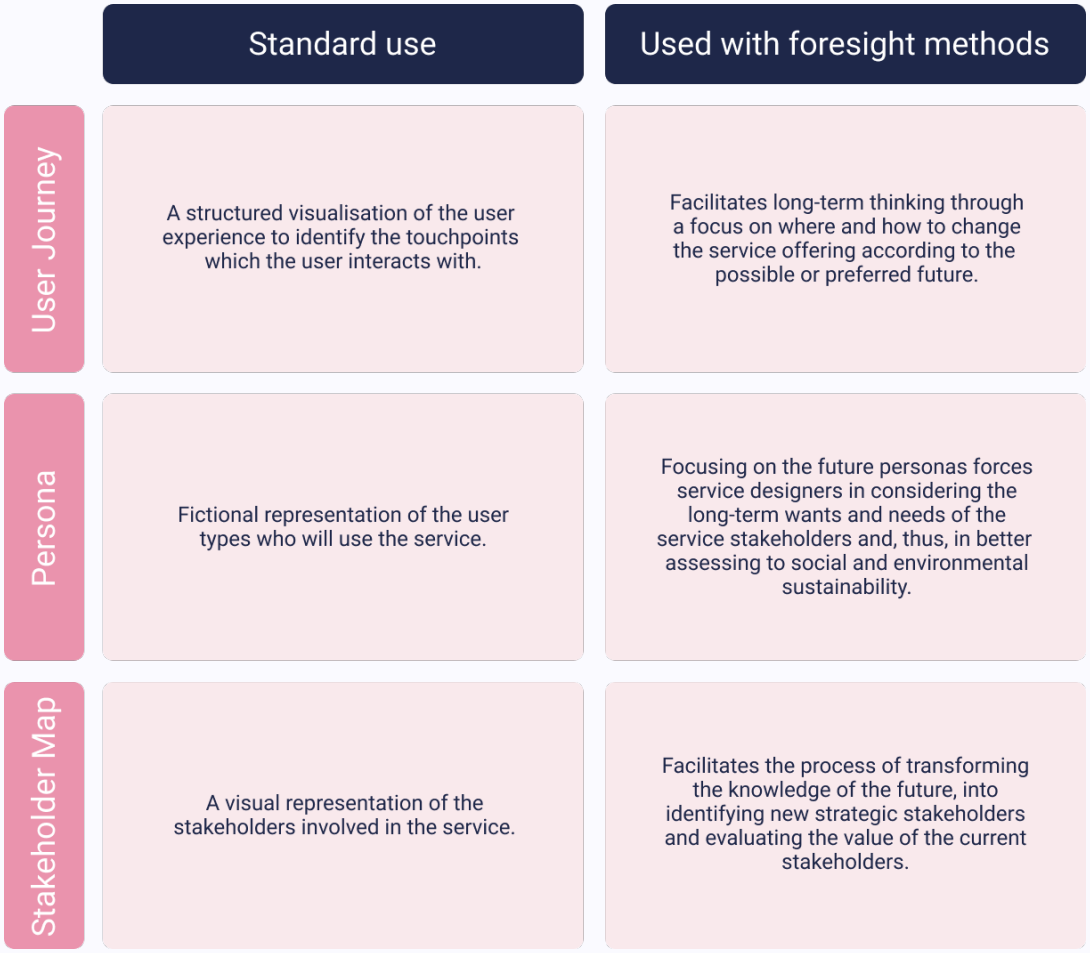

Figure 8: How service design methods can change when used with foresight (Løgager et al., 2021)

The final framework discussed in this literature review is the future-oriented service innovation process (Figure 9). This framework has evolved from an analysis of over 20 diverse processes associated with service innovation, new service development, and service design. Its development is shaped by insights from literature on foresight and service design methods (Ojasalo et al., 2015) The authors outline the phases of the future-oriented service innovation process as mapping and understanding, forecasting, and ideating, modelling, and evaluating, and conceptualizing and influencing. However, they note that this process is rarely linear; instead, it may be highly iterative. The authors also emphasize that many of the methods associated with individual phases are valuable for other purposes within the process (ibid).

The authors argue that combining the methods and tools of foresight and service design, and creatively integrating them, organizations can achieve the most forward-looking, open-minded, and distinctive outcomes (ibid). The authors conclude that since futures thinking and design thinking enhance the dynamic capabilities of sensing and seizing opportunities for service innovation, they should be integrated into organizational processes, structures, and everyday practices. Additionally, they advocate that instead of treating futures thinking and design thinking as one-time activities, organizations should view their application as continuous endeavours.

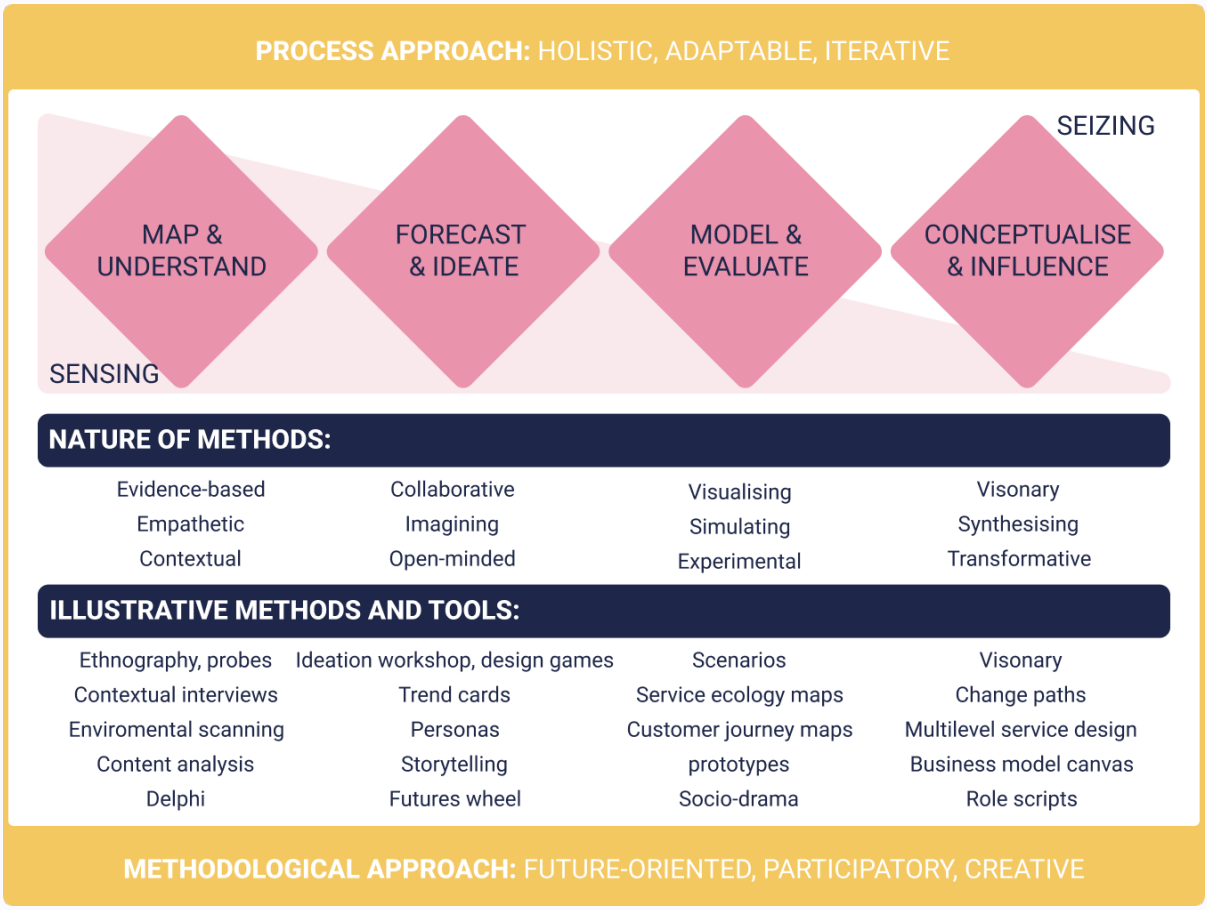

Figure 9: The future-oriented service innovation process (Ojasalo et al., 2015)

2.3 Resilience

"The greatest danger in times of turbulence is not the turbulence — it is to act with yesterday's logic."

(Drucker, 2008)

The term "turbulence" paints a vivid picture of constant motion, like a river filled with waves, both large and small, slow, and fast. This imagery effectively captures the essence of today's ever-changing business landscape. Navigating an organization through this tumultuous environment requires acute awareness and swift adaptation, like navigating white-water rafting. The waves of change are intensifying, arriving faster and with greater force. It is a challenge that can keep any company executive awake at night (Fiksel, 2015). The author argues that to effectively navigate the waves of change; companies must enhance their resilience. They should be equipped to handle unforeseen events and recover swiftly, or even better, advance by strengthening their competitive position.

Additional research also indicates adopting resilience is a crucial feature for organization to tackle change and thrive in uncertainty (eg. Näswall et al., 2015; Britt et al., 2016). However, there is a blur as to what resilience is, how it can be measured, maintained, and improved especially in an organisational context (Fathi et al., 2021; Duchek, 2020). Thus, in this section we aim to gain a profound comprehension about 1) the origins of resilience, 2) organisational resilience, and 3) Measuring resilience.

2.3.1 The Origins of Resilience

The word resilience originates from the Latin word *resilio*, meaning 'to jump back' (Klein et al., 2003). The concept of this phenomenon originally emerged from disciplines, such individual psychology, ecology, and management and organizational research. Although there are contextual discrepancies in the term's usage, resilience is closely associated with an element's capacity to return to a stable state following a disruption (Fathi et al., 2021).

2.3.1.1 Individual Resilience

The foundation of resilience research traces back to the 1960s and 1970s when scholars began studying individual resilience, which challenged prevailing views on psychological disorders (Murphy & Moriarty, 1976; Luthar et al., 2000). This early research emphasized the potential for resilience even in adverse circumstances, showcasing the remarkable capacity for change in human cognitive growth (Kagan, 1976). Additionally, it expanded the concept of resilience beyond individuals to encompass families, highlighting the critical role of relational dynamics in navigating challenges within familial units (Patterson, 2002; Focht-Birkerts & Beardslee, 2000).

These foundational studies provided crucial insights into resilience not only at the individual level but also within broader social contexts, including organizations. By demonstrating that resilience is not just an exceptional trait but rather a common phenomenon rooted in ordinary adaptive processes, researchers laid the groundwork for understanding how individuals and social units can withstand and rebound from adversity (Masten, 2001). Thus, the early

exploration of resilience has had a lasting impact on various fields, offering valuable insights into human adaptability and organizational resilience.

2.3.1.2 Ecological Resilience

The concept of ecological resilience emerged in the 1970s, describing the ability of ecological systems to adapt to change (Holling, 1973). Holling's foundational work explored how ecological systems persist despite external changes, distinguishing between stability and resilience. Stability refers to predictable performance under specific conditions, while resilience denotes the ability to persist despite external disturbances (Ibid).
Stability and resilience are not necessarily aligned and can even be in tension with each other. Holling highlighted that stability aims for equilibrium and predictability, while resilience emphasizes flexibility and the ability to keep options open. Attempting to engineer stability in ecological systems can diminish resilience, making them susceptible to sudden breakdowns in the face of disturbances (Ibid).

The concept of ecological resilience has evolved to incorporate social systems, recognizing the interdependence between social and ecological resilience (Adger, 2000). Social resilience involves communities' ability to cope with external stresses resulting from social, political, and environmental changes (Ibid). This resilience is influenced by the degree of specialization in economic activities, which can increase risks for individuals and communities (Ibid).

Further research underscores the importance of robust action (actions that preserve future possibilities) in addressing grand challenges, which require flexible responses to deep uncertainty (Padgett and Powell, 2012; Ferraro et al., 2015). Robust action mobilizes diverse actors and generates innovative solutions, aligning with the principles of resilience (Ferraro et al., 2015).

2.3.1.3 Early Management and Organizational Resilience

Early management research on organizational resilience stems from two seminal papers from the early 1980s. Staw, Sandelands, and Dutton (1981) proposed the concept of "threat-rigidity," suggesting that environmental threats can lead to restricted cognitive processing and power shifts within organizations, resulting in less varied or flexible responses. They argued that such rigidity could be maladaptive, especially in unknown situations involving radical environmental changes. In contrast, Meyer (1982) examined hospitals' adaptation to a doctors' strike and found that unexpected shocks could lead to positive outcomes through heterogeneous responses driven by antecedent strategies, structures, ideologies, and slack resources.

Although the study of resilience in management research remained dormant until the late 1990s, the crash of a stock market bubble, the dot-com bubble reignited interest in the topic, leading to a resurgence of literature on organizational resilience across various contexts and disciplines. Today, the concept of organizational resilience is widely used and studied (Hepfer and Lawrence, 2022).

2.3.2 Organizational Resilience

As highlighted, research on organizational resilience has experienced significant growth in the past three decades, driven by rapid changes in the business environment due to emerging technologies, changing customer needs, shift in socio-cultural, political, and legislative environment (Fathi et al., 2021). However, this academic interest has unfolded in an increasingly disorganized manner, with a lack of integrated structure regarding the definition, conceptualization, and operationalization of resilience. Previous research has approached these aspects in diverse ways, contributing to the current fragmentation in understanding the topic (Hepfer and Lawrence, 2022).

In the table (Figure 10), an overview is created of how scholars define the concept. Upon analysing these existing definitions, Hepfer and Lawrence (2022) argue that three primary of organisational resilience approaches were identified: "absorbing and recovering," "anticipating, coping with, and adapting to adversity," and "bouncing back and bouncing forward." "Absorbing shocks while maintaining functioning" describes organizations' ability to continue operating while absorbing shocks, without necessarily reverting to a previous state or transitioning to a future state. "Coping with adversity" emphasizes adaptive activities and processes aimed at dealing with challenges as they arise. "Bouncing back" describes organizations' capacity to return to a previous state following adversity. "Bouncing forward" entails organizations' ability to learn from adversity, surpassing previous states and emerging stronger from the experience.

	Author(s)	Definition
Absorbing and recovering	Chrisman et al., 2011	"the ability of organizations to absorb, respond to, and recover from situations that could threaten their existence", p. 1107
	DesJardine et al., 2019	"both the ability of a system to persist despite disruptions and the ability to regenerate and maintain existing organization", p. 1436
	Gao et al., 2017	"beliefs about a firm's ability to withstand shocks", p. 2148
	Kahn et al., 2018	"an organization's ability to absorb strain and preserve or improve functioning, despite the presence of adversity" p. 509
	Kahn et al., 2013	"the collective capacity to absorb strain, withstand setbacks, and recover from untoward events", p. 393
	Lengnick-Hall et al., 2011	"a firm's ability to effectively absorb, develop situation-specific responses to, and ultimately engage in transformative activities to capitalize on disruptive surprises that potentially threaten organization survival.", p. 244
	Park et al., 2015	"the ability of systems to recover quickly from negative experiences of management crisis, adversity, or disaster", p. 321
	Rao & Greve, 2018	"the capability of a community to withstand and recover from a disaster", p. 5
	Sutcliffe & Vogus, 2003	"the ability to absorb strain and preserve (or improve) functioning despite the presence of adversity", p. 96
	van der Vegt et al., 2015	"the ability of systems to absorb and recover from shocks, while transforming their structures and means for functioning", p. 972
	Williams et al., 2017	"the process by which an actor . . . builds and uses its capability endowments to interact with the environment in a way that positively adjusts and maintains functioning prior to, during, and following adversity", p. 742

Anticipating, coping with, and adapting to adversity	Reinmoeller & Van Baardwijk, 2005	"the capability to self-renew over time through innovation", p. 61
	Wildavsky, 2017	"learning from adversity how to do better", p. 2
	Gittell et al., 2006	"(a) the maintenance of positive adjustment under challenging conditions, (b) the ability to bounce back from untoward events, and (c) the capacity to maintain desirable functions and outcomes in the midst of strain", p. 303
	Demirel et al., 2019	"the ability of a system to return to its original state or move to a new, more desirable state after being disturbed", p. 138 (taken from Christopher & Peck, 2004)
	Ortiz-de-Mandojana & Bansal, 2016	"the ability of organizations to anticipate, avoid, and adjust to shocks in their environment", p. 161
	Williams & Shepherd, 2016	"qualities a community possesses prior to a hazard that enhance its ability to mitigate threats and function positively in the aftermath of a natural disaster", p. 2070
	Carmeli & Markman, 2011	"the capacity of organizations to sustain and bounce back from a setback", p. 323 (adapted from Sutcliffe & Vogus, 2003)
	Dewald & Bowen, 2010	"a capacity to adopt new organizational routines and processes to address the threats and opportunities arising from disruptive business model innovation", p. 199
	Ortas et al., 2014	"Inherent resilience: 'immediate short-term reaction to a crisis', p. 298. Adaptive resilience: 'the speed of recovery from a disaster to a desired state", p. 298
Bouncing back or bouncing forward	Dai et al., 2017	"the ability of entities to cope with external stressors and disturbances", p. 1482
	Lengnick-Hall & Beck, 2005	"an organization's ability to interpret unfamiliar situations; to devise new ways of confronting these events; and to mobilize people, resources, and processes to transform these choices into reality", p. 752
	Hamel & Välikangas, 2003	"the ability to dynamically reinvent business models and strategies as circumstances change", p. 53
	Fiksel et al., 2015	"the capacity of an enterprise to survive, adapt and grow in the face of turbulent change", p. 82
	Wildavsky, 2017	"the ability to cope with unanticipated dangers after they have become manifest, learning to bounce back", p. 77

Figure 10: Definitions of Organisational Resilience (as cited in Hepfer and Lawrence, 2022, p. 7)

Building on these established definitions, Hepfer and Lawrence (2022) define organizational resilience as "the ability of an organization to anticipate, respond to, recover from, and learn from adversity" (p. 8).

Elaborating on this, organizational resilience is closely tied to adversity. Without facing challenges, an organization cannot be considered resilient (Darkow, 2019). However, resilience does not mean invincibility; even resilient organizations can fail under certain conditions. Assessing resilience depends on how well an organization performs in the face of adversity, similar to the assessment of individual resilience (Masten, 2001). Moreover, the impact of adversity varies across organizations, offering unique opportunities for some, like Zoom (Zoom, 2023) during the pandemic.

Furthermore, the definition of organizational resilience incorporates anticipating and learning from adversity, in addition to responding to it. Anticipation aids proactive preparation and response (Wildavsky, 2017), while learning enables organizations to emerge stronger, rather than simply bouncing back (Manyena et al., 2011; Ruiz-Martin et al., 2018). Thus, resilient organizations can transform, becoming more resilient (Clément & Rivera, 2017; Kantur & Işeri-Say, 2012; Tasic et al., 2019).

The literature review on organizational resilience also suggests three distinct categories: functional, operational, and strategic resilience. Each category represents the organization's capacity to positively respond to particular challenges and is characterized by unique foundations, dynamics, and outcomes (Hepfer and Lawrence, 2022). These distinctions, along with their definitions and characteristics, are outlined in the table below (Figure 11).

	Functional resilience	Operational resilience	Strategic resilience
Definition	The ability of a specific organizational function or system to respond positively to adversity	The ability of an organization to respond positively to adversity that affects the organization as a whole, threatening the ability of the organization to continue operating	An organization's ability to anticipate and respond to threats to its strategy and long-term goals
Foundations	**Functional knowledge:** • Understanding of function-specific • vulnerabilities and risks • Situated functional mindfulness • Prior experience with disruptions in function **Functional design and infrastructure:** • Functional infrastructure and architecture • Intra-functional relationships • Flexibility	**Operational awareness:** • Recognition of potential threat • Shared situational awareness • Situated functional mindfulness • Attentional foci of organizational members **Organizational resources:** • Tangible (financial slack, organizational structure) • Intangible (relationships, experience)	**Strategic attention:** • Perception of environmental threats and opportunities • Attitude towards strategic risks • Ability to recognize need for change **Endowments:** • Resources • Business model
Dynamics	**Flexibility in responding:** • Restructuring and deployment of functional resources • Efficient execution of functional routines • Improvisation	**Organizational understanding:** • Intra-organizational discussions and interpretations **Organizational responses:** • Organizational coordination and communication • Innovative behaviour in the face of adversity • Managing intra- and inter-organizational relationships	**Top management exploration/ understanding:** • Discussions within strategic decision-making team • Interpretation of strategic threats **Strategic adaptation:** • Positive adaptation to strategic threats • Innovation and exploration of business model
Outcomes	**Efficiency:** • Functional cost efficiency • Functional reliability and stability • Time to recover	**Short-/medium-term performance:** • Recovery in terms of ROA, cash flows, volatility, sales growth	**Long-term performance:** • Organizational longevity • Profitability and market value • Survival

Figure 11: Three Forms of Organizational Resilience (adapted from Hepfer and Lawrence, 2022, pp. 10, 18)

2.3.3 Measuring Organisational Resilience

The age-old saying, "you can't manage what you can't measure," certainly applies to organisational resilience.

Organisational resilience is not about what an organization has; it is about what it does. It is more about how well it functions rather than its structure or capacity. To be resilient, an organization needs to be able to do certain things, which can be broken down into four essential abilities: the ability to respond, to monitor, to anticipate, and to learn (Hollnagel, 2011), as depicted in Figure 12.

The ability to respond	The ability to respond invovles addressing the *actual*. Resilient organizations is able to respond to various forms of change, whether regular fluctuations, disruptions, or opportunities. This involves not only knowing what actions to take but also when to take them, ensuring timely and effective responses. It's crucial for organizations to detect and recognize events promptly, evaluating their significance and deploying resources as needed to address them
The ability to monitor	The ability to monitor involves addressing the *critical*. Resilient organizations possesses a keen monitoring capability, enabling them to observe events and recognize shifts that could impact their operations. Effective monitoring involves flexibility, allowing organizations to track both internal performance and external developments, anticipating, and addressing potential threats or opportunities before they materialize. This requires relying on reliable leading indicators to interpret changes accurately
The ability to anticipate	The ability to anticipate involves addressing the *potential*. Resilient organizations excel in anticipating future developments beyond immediate operations. They consider potential shifts in technology, customer needs, and regulatory environments, preparing for both positive and negative impacts. Anticipating these changes goes beyond conventional risk assessment, requiring a holistic understanding of the organization's environment and a willingness to embrace uncertainty and new perspectives
The ability to learn	The ability to learn involves addressing the *factual*. Resilient organizations prioritize learning from experience, leveraging insights to improve future performance. This entails understanding past events, extracting meaningful lessons, and adapting behaviors accordingly. Effective learning fosters a culture of continuous improvement, ensuring that organizations evolve and adapt in response to changing circumstances, ultimately enhancing their resilience

Figure 12: The Four Essential Abilities of Resilience (adapted from Hollnagel, 2011)

Resilience cannot be captured by a single measurement. Instead, Hollnagel (2011) proposes evaluating its four defining abilities through a Resilience Analysis Grid, as shown in Figure 13.

This grid comprises four sets of questions, with their answers constructing a comprehensive resilience profile. The author acknowledges the need to customize these questions to fit the specific characteristics of the target organization. Furthermore, resilience does not prescribe a fixed balance among its four qualities. For instance, while a fire brigade prioritizes immediate response over anticipation, a sales organization values both equally. However, every organization must incorporate each of these qualities to some degree to foster organizational resilience (Ibid).

Resilience Analysis Grid					
The ability to respond: How ready is the organisation to respond and how able (quickly and efficiently) is it to respond when something unexpected happens?					
Excellent	**Satisfactory**	**Acceptable**	**Unacceptable**	**Deficient**	**Missing**
The ability to monitor: How well is the organisation able to detect smaller or larger changes to work conditions (internal and/or external) that may affect the organisation's ability to carry out current or intended operations?					
Excellent	**Satisfactory**	**Acceptable**	**Unacceptable**	**Deficient**	**Missing**
The ability to anticipate: How large an effort does the organisation put into what may happen in the near future? Is anticipation a strategic concern?					
Excellent	**Satisfactory**	**Acceptable**	**Unacceptable**	**Deficient**	**Missing**
The ability to learn: How well does the organisation make use of formal and informal opportunities to learn from what happened in the past?					
Excellent	**Satisfactory**	**Acceptable**	**Unacceptable**	**Deficient**	**Missing**

Figure 13: Resilience analysis Grid (adapted from Hollnagel, 2011)

While the Resilience Analysis Grid does not directly measure the ability to *recover*, an attribute mentioned in the previous sections' definition of resilience, we treat the ability to recover is the outcome of effectively complying to the abilities outlined above. For instance, if a company can quickly and efficiently respond to adversity, this responsiveness can lead to faster recovery times.

2.3.4 Research Question

As the literature indicates, Service Systems Design, Foresight, and resilience have all been widely studied. However, there has not been much research exploring the intersection of these three themes. The absence of studies examining how strategic foresight and service design interact to create organizational resilience represents an opportunity for further investigation.

Therefore, we formulated our research question to guide our inquiry into this gap:

Research Question:

How can strategic foresight tools support the service design process to cultivate organisational resilience to change?

This research question is relevant because it explores the potential to enhance resilience in an organizational context, an increasingly critical goal for businesses facing uncertain and rapidly changing environments. By examining the role of strategic foresight in service design, the research aims to uncover new approaches and best practices that can help organizations adapt and thrive in the face of evolving challenges. This is highly applicable and relevant to our case study and collaboration with Ticketbutler, whose industry is significantly impacted by rapid technological advancements and market changes. A future-oriented approach is essential for Ticketbutler to maintain its competitive advantage and prepare for potential disruptions.

3 Methodology

This chapter describes how the design process will be tackled through the Double Diamond methodology to design a future-proof service for Ticketbutler based on the initial design brief. In addition, the chapter presents an overview of foresight tools in combination with service design methods that will be utilised throughout the project. Lastly, this chapter describes how the defined research question shall be answered.

The following sections will be discussed in this chapter:

3.1 Design Process

In our design approach for Ticketbutler, we utilized the Double Diamond model to structure our design process. Developed by the Design Council, a leading British design organization in 2004, this model offers a structured framework for managing design projects (Design Council, n.d.). The two diamonds symbolize the process of extensively exploring an issue (divergent thinking) and subsequently taking focused action (convergent thinking). The phases, outlined as Discover, Define, Develop, and Deliver, guide the progression of our design journey, as depicted in Figure 14.

Anna White, one of the authors of the Double Diamond, further elaborates on its concept: "For me, the first part of the diamond is about questioning the brief and defining the problem statement. I explain it as 'designing the right thing'. The second part of the diamond is about exploring possibility, iteration, testing, and developing, so 'designing the thing right'." (Design Council, n.d.).

We chose the Double Diamond model primarily for its simple, visual, and structured method of organizing the entire design process. Its simplicity aids in planning design activities for each phase right from the project's outset. Moreover, the model's widespread recognition across the design field, not solely confined to Service Design, facilitates smoother communication with stakeholders and colleagues at Ticketbutler, regardless of their backgrounds. However, it is important to highlight that it is not *the* framework; it is *a* framework, and we will utilize it in a way that best serves our objectives. It is also crucial to acknowledge the iterative nature of design while employing this methodology. Returning to a previous phase following a discovery should be perceived as iterative progression rather than regression.

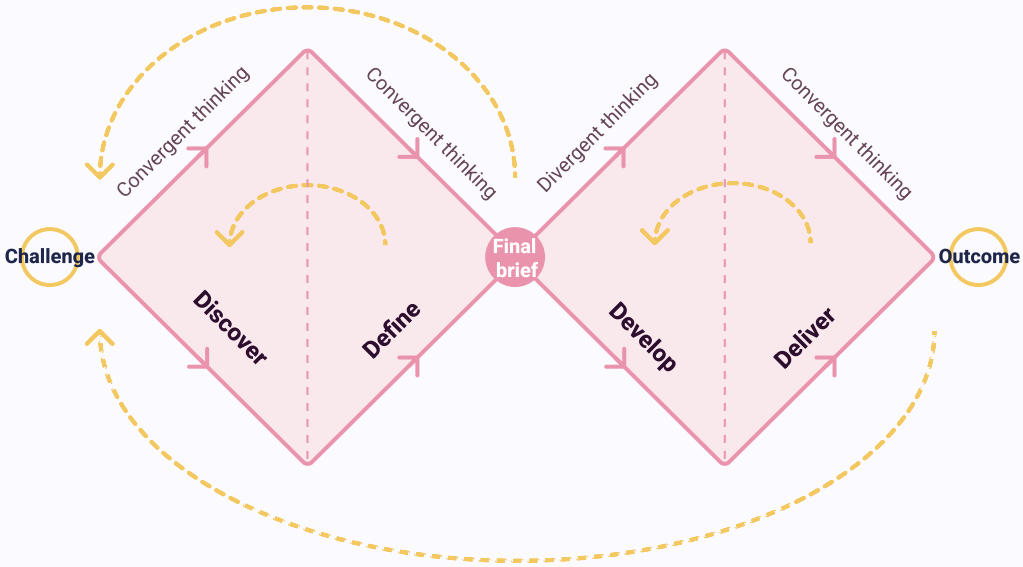

Figure 14: The Double Diamond (Design Council, n.d.)

For the Discover phase, represented by the first diamond, we seek to understand the problem by desk research and engaging with internal and external stakeholders affected by the issues

rather than making assumptions. In the Define phase, insights gathered from the discovery phase will help us define the challenge or final brief in a novel manner. Entering the Develop phase, symbolized by the second diamond, we aim to develop, test, and refine multiple potential solutions that distinctly address the defined problem from the previous phase. Finally, in the Deliver phase, the objectives are selecting a single solution that effectively addresses the identified problem or challenge and preparing it for presentation to the client for internal evaluation.

In this project, we treat every phase with equal significance, committing ourselves to a thorough immersion. Therefore, we have allocated two weeks for each phase, allowing us to effectively apply service design tools alongside foresight methods. To ensure a structured approach to the various stages of design thinking, we have developed a detailed daily tentative schedule for each week, which can be found in Figure 15.

We also considered Manyone's Strategic Foresight Framework as a guide to selecting strategic foresight tools for our design thinking process. During the Discover phase we will explore "what is changing in Ticketbutler's landscape". In the Define and Develop phase, we will investigate "what could be Ticketbutler's potential place in the future". And for the Deliver phase we present the new service that will help demonstrate "how Ticketbutler gets there"

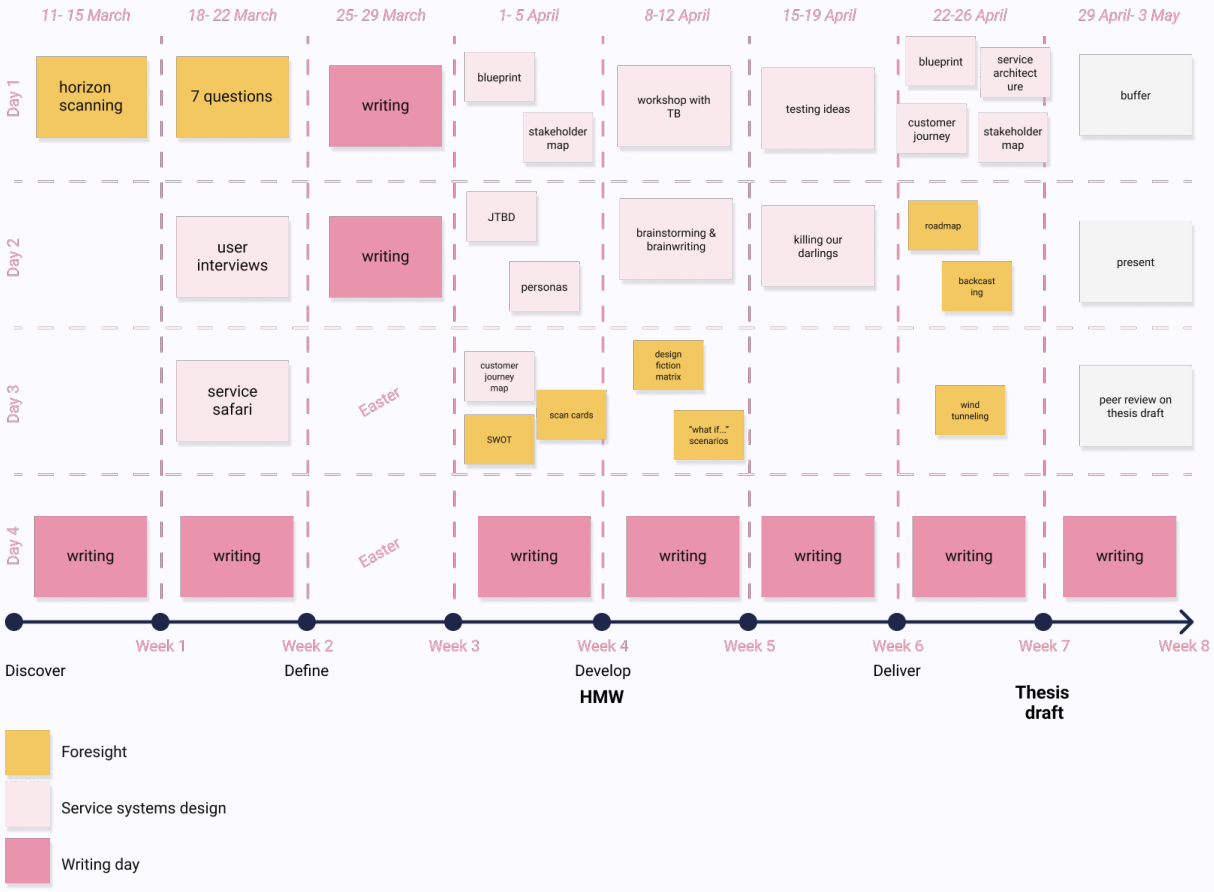

Figure 15: Detailed breakdown of design and foresight activities

3.2 Academic Research Process

To address our academic research question regarding the role of foresight tools in supporting the service design process, we will utilize the methodology of Research through Design (RtD). RTD is an established research approach that utilizes methods and processes rooted in design practice as a valid form of inquiry (Zimmerman, et al., 2010). RtD not only facilitates practical design outcomes but also has the potential to generate theoretical insights. It contributes to the creation of new artifacts, encompassing products, environments, services, and systems, thereby enriching both the design and research landscapes. In our case, it is particularly done through the integration of strategic foresight tools.

Additionally, we will adopt a reflective approach to evaluate the achievement of resilience through two workshops. The first workshop, occurring during the define phase, will initiate discussions on Ticketbutler's current resilience status. Following this, the second workshop will assess whether the introduction of the new service has not only enhanced resilience but also fostered a resilient and forward-thinking mindset within the company.

Throughout the research process, our objective is to develop two project outcomes: one tailored for Ticketbutler and another intended for the Service Design academia. These are depicted in the timeline presented below.

The primary outcome stems from our academic research exploration, offering a contribution to the academic field. The secondary outcome focuses on developing a service concept, to be delivered to Ticketbutler upon the completion of the design process.

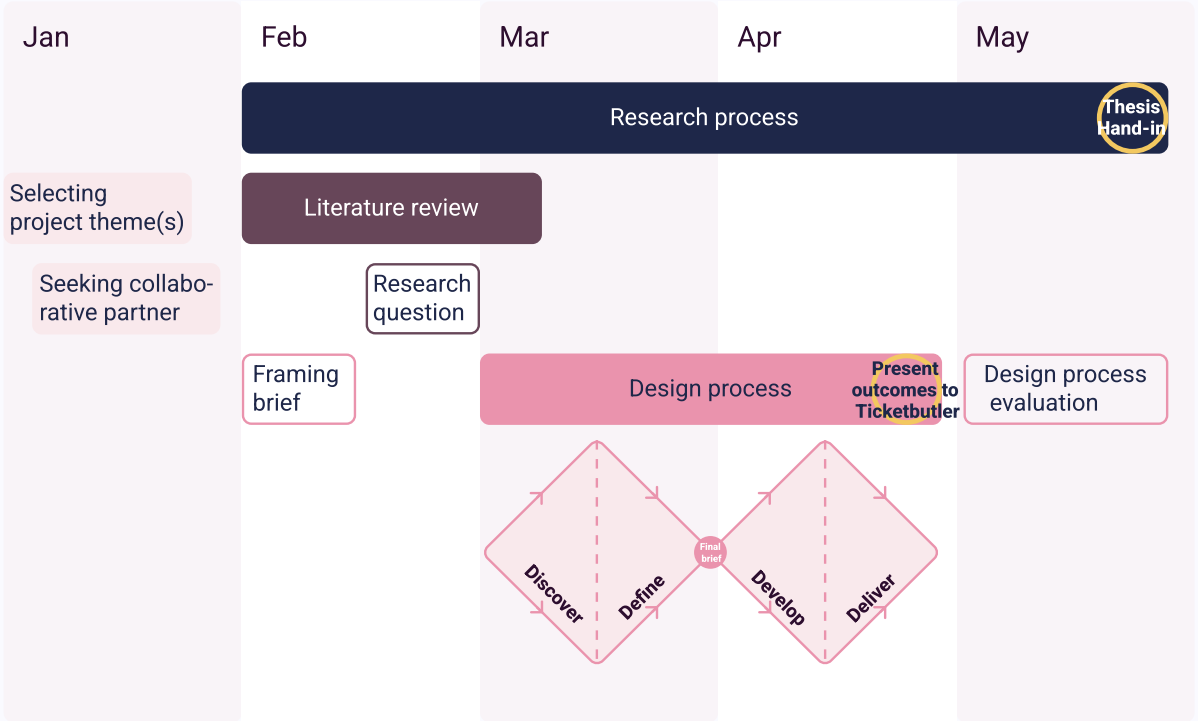

Figure 16: Research process and design process timeline

4 Initial Limitations

This project operates within a specific timeframe, which constrains the depth and breadth of research and implementation activities. This limited timeframe impacts the ability to conduct extensive and detailed investigations, potentially leaving some areas underexplored. Resource constraints and limited access to users also affect the scope of research and the ability to gather comprehensive user insights. The inability to engage with a wider user base may result in less robust findings and insights.

Additionally, the project does not encompass the financial aspects of the service, feasibility studies, or detailed logistics planning. These critical factors are beyond the current scope and thus are not addressed in the project. As a result, elements such as cost analysis, financial viability, and logistical considerations remain unexplored. Consequently, the project does not include a business model canvas or a business plan, and detailed financial or logistical frameworks should not expect to be part of the deliverables.

5 Design Case

This chapter documents the design process, which is used to explore the design brief and academic research question. The chapter is divided into sections defined by the four phases of the Double Diamond methodology (Discover, Define, Develop, Deliver). At the end of each section, an initial reflection is provided on the design process and the usage of the service design and foresight tools.

This chapter will cover the following phases of the Double Diamond:

5.1 Discover

5.2 Define

5.3 Develop

5.4 Deliver

5.1 Discover

In the first phase of the Double Diamond, the emphasis was on understanding the problem and engage with stakeholders. As motioned in the introduction chapter, one of Ticketbutler's long-term goals is to scale their business and expand internationally, next to streamlining ticketing processes and improving event experiences for both organisers and attendees. Consequently, the aim of the Discover phase was to investigate how we can identify opportunities through foresight-driven service design to contribute to this goal. As mentioned in the Methodology chapter, we followed Manyone's design-driven foresight framework to assess "what is changing in Ticketbutler's landscape". Therefore, in this phase we focus on exploring trends in their domain, the state-of-art service built around Ticketbutler's name badge printer and understand the current experiences of customers to identify potential areas for developing a user-centred, resilient, and future-proof service. This phase was dedicated most of all to gain an in-depth understanding the organisational structure and operations of Ticketbutler, identifying customer segments, and establishing the foundation for foresight driven service design process. To do so, we centred a deep focus on ethnographic research, and foresight methods such as horizon scanning and trend analysis that would serve as a baseline for the next phases of the design process.

This explorative phase sought to accumulate insights from the perspectives of various stakeholders to gain a nuanced understanding of the existing name badge printing service and exploring its future potentials. The Discovery phase is thus structured around answering a set of critical research questions, which include:

- What is the current service of the name badge printer?
- What do we have to know about event management and ticketing?
- Who are the customers of Ticketbutler?
- What emerging trends can we observe in this field?

Through these inquiries, the aim was to uncover vital information that would guide the development of a service that not only meets the current needs of users but is also adaptable to future changes and advancements in the event industry.

5.1.1 Service Blueprinting

To kickstart the design process, we focused on thoroughly understanding Ticketbutler's primary service, including the experiences it offers, the processes it entails, and the various actors involved. Given Ticketbutler's objectives, this was an important step to understand the territory of the project and opportunities for service innovation by defining the state-of-art, end-to-end service offering. Therefore, to be able to take full ownership of the design process, we aimed to understand the current customer experience through identifying internal processes, outline potential limitations, and understand the nuances & responsibilities of each actor in the system. To achieve these insights, we utilized service blueprinting.

Service blueprinting is one of the foundational tools in service design. It can be utilised either to assess an existing service to seek for redundancies, pain points and opportunities, to prototype new services, or as a facilitation tool for communication with cross-functional teams (Bitner, Ostrom and Morgan, 2008). In our case, the blueprint was used as a visual tool to explore state-of-art service offering of Ticketbutler (Figure 17).

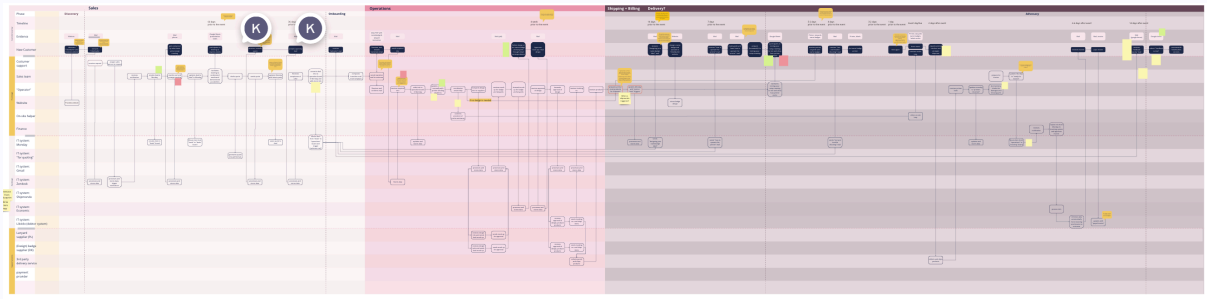

Figure 17: End-to-end service blueprint of the current service offering (view in Miro)

Using the tool proved valuable to synthesise the information gathered through the interviews with the main representatives of the two departments that define TB's operational structure: operations and sales. Firstly, it enabled us to synchronically gain insights into the current customer journey and the operational processes from the company's perspective. We could define the general customer journey that consists of 5 stages: *discovery (new users), order, onboarding and usage, payment, feedback.* Next to this, we could define the front- and back-stage actions that helped us to generate assumptions of the current experience of the user journey. In addition, we could gain a clear overview about the actors involved in the service delivery, providing insights into their key activities and responsibilities. It became apparent from the exercise that Ticketbutler already provides a holistic end-to-end service supporting the customers from identifying needs for events to providing feedback after delivering the event. Furthermore, we could identify some redundancies such as spending too many resources on supporting the customers. However, it was also important for us to keep in mind, that our focus is not on optimising the existing service, but to identify opportunities for a new service supplementing the offerings around the name badge printer.

Overall, the exercise helped us to enforce a holistic thinking as early as possible. Although, a lot of details can be understood fast and parallelly, the tool has its own limitations as well when applied in the discovery phase. Even though it helped to understand the holistic service delivery in detail from a business perspective, it still does not provide a detailed understanding of the customer experiences. We can use assumptions derived from the tool; however, it

might also limit the designer in focusing on optimisation of the service. Thus, further in the discovery phase we will focus on identifying the customer journey from the customer's perspective as well through interviews. Nevertheless, we aim to use the blueprint as a reference for communicating with the team and as a comparative asset to the new service.

5.1.2 Service Safari

To further broaden our understanding of the holistic customer journey, we employed a service safari as an additional research method. Service safari is an approach where the researcher experiences the service first-hand from the customer's perspective that helps understanding the user journey through an empathetic lens (Stickdorn et al., 2018). By utilising this method, we aimed to understand and expand the customer journey of the name badge printing service, identify the pain points and gains throughout the various touchpoints.

The service safari involved the creation of an account and event, registration of an attendee, and finally printing of a name badge. The precondition for these actions was receiving the onboarding emails from Ticketbutler that customers would get upon agreeing on a deal. During the immersive process, we encountered several UX pain points, predominantly related to the clarity of guidelines provided and the usability of the website. As visible in Figure 18, the journey includes a lot of steps and touchpoints, often requiring jumping in between different platform, such as the website, the guidelines, email, app, etc. Thus, the biggest pain point for us was that the journey simply takes a lot of time and that it feels overcomplicated. However, it has to be taken into consideration that user might not complete the entire journey (from registering to printing) in one go and would distribute the tasks over time.

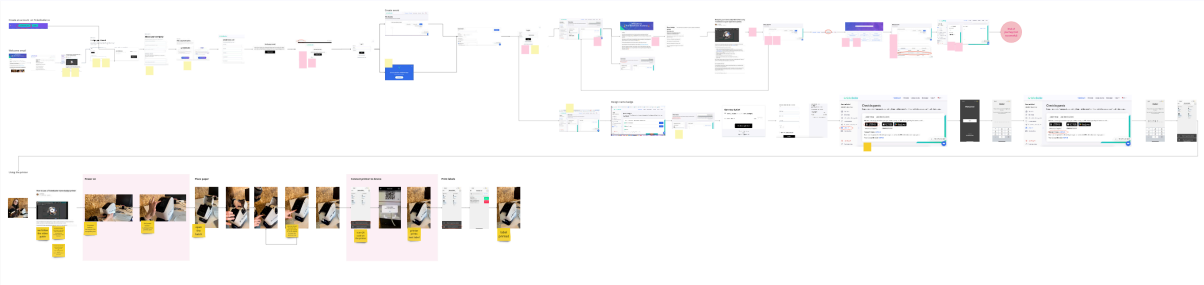

Figure 18: Journey of service safari (view in Miro)

Next to this, we concluded that the flow and informational guidelines provided to users is not intuitive, complicating the registration process. We discovered that users could start their registration journey from two different starting points leading to differing outcomes. This is because the welcome email does not clearly communicate that creating a new account and event when using the name badge printer service requires a special link, which can be easily overlooked. The lack of clarity in guiding new users through their initial interaction with the service underscores a critical area for improvement to streamline the customer journey. Despite recognizing these issues as significant barriers for new and potentially returning users, we determined that focusing on designing each touchpoint for the registration process falls outside our project's scope. Our focus is centred on designing a holistic service experience rather than refining specific web design elements and guidelines.

On the other hand, by testing the name badge printer, we came across another interesting finding. During our initial discussions when defining the project scope with Ticketbutler, the

company's aim for sustainability stood out by having reusable packaging, lanyards from recycled materials, and plantable name badges. But throughout the service safari, we discovered that the name badge printer prints on a sticker made of plastic contradicting Ticketbutler's aim for sustainable practices. This discovery highlights potential opportunities for developing more sustainable service solutions.

Along this process, we also recognise the limitations of conducting a service safari. Although it enabled us to gain a general, user-centric understanding of the service, it has to be taken into account that the experiences and insights we gained were specific to the context in which they were gathered. For instance, we approached the service safari as new customers to the service, however, knowing that real customer would have initial meetings with TB where they would receive additional information about the onboarding processes, we have to ensure an unbiased usage of our insights.

5.1.3 Observation at Optimeet Conference

Having the opportunity to attend an event, we continued the empirical data collection process by observing users in the form of *user shadowing* at the Optimeet Conference held in Copenhagen, which is Scandinavia's largest meeting and event expo (Optimeet Messen, 2024). User shadowing is a research method where designers follow and observe how the users interact with a product or service in real-time to gain a deep understanding of the user's behaviour, actions, and challenges (Stickdorn et al., 2018). We chose to conduct a "non-participatory" observation (ibid), where the users did not know that they were being observed to avoid influencing the true experience of the users, and thus the outcome of the research. During the observation our goal was to understand the touchpoints of the name badge printer, how it is used, and how the end users – in our case, the volunteers – would evaluate the experience of the check-in flow. To assess the latter, we also conducted unstructured interviews with 2 volunteers. Additionally, we explored the expo itself to identify current trends in the event industry and learn about some of Ticketbutler's competitors.

We documented the observation with images and notes (see Appendix 9.2), which allowed us to capture the essence of the event's dynamic environment. By going to a live event, we could assess the overall set-up, the amount of people responsible for the check-in flow and using the printers, and a general time estimate for how long it takes to prepare the name-badge for a guest as described in a use case in the figure below (figure 19).

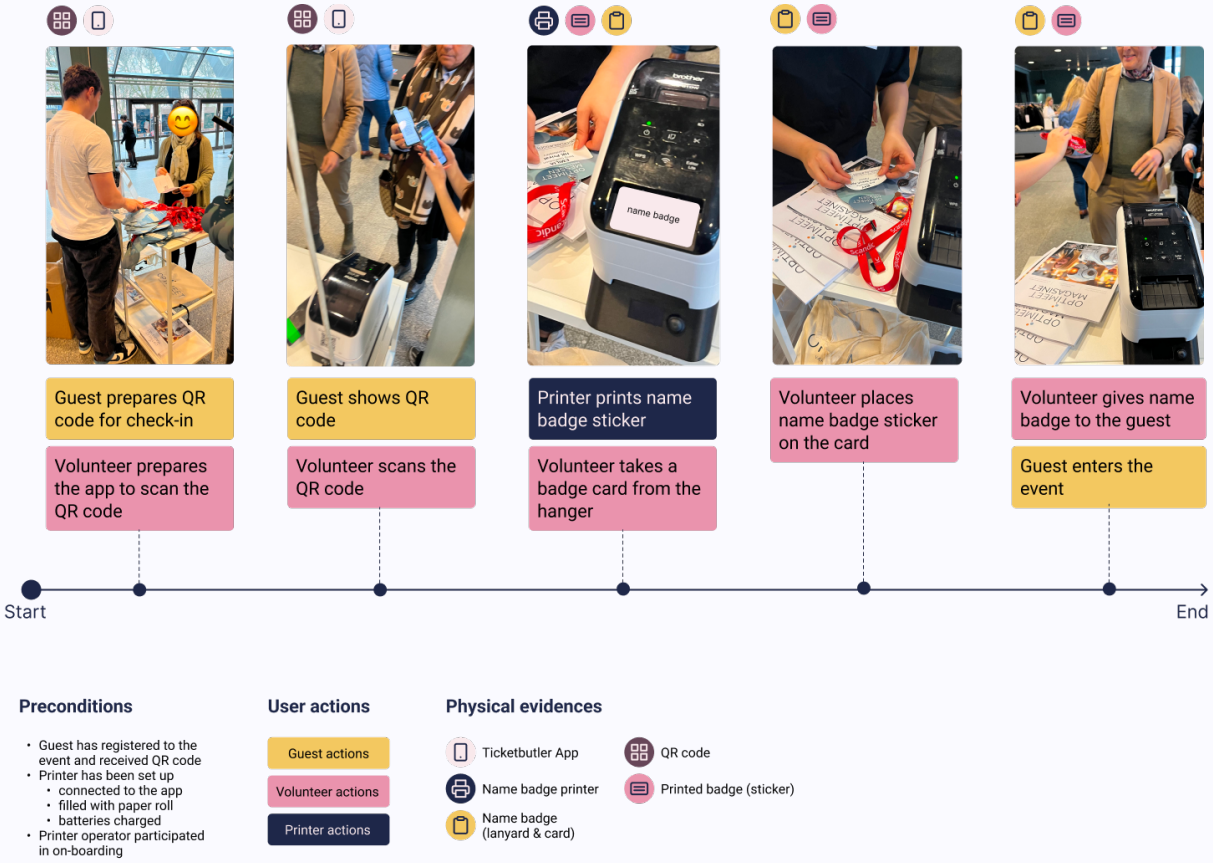

Figure 19: Use case of check-in flow at Optimeet Conference

The synthesis of our observational and interview data led to several key insights. Apart from understanding the general usage of the printer, we could conclude that the device is very easy to use and makes the check-in flow fast and convenient. During events, the traditional practice is that organisers develop, print, and organise the name badges for guests prior to the event, and during the day of the event, manually hand those out. This not only takes a lot of preparatory time but can easily involve errors such as losing or not having a guest's name badge prepared, leading to inconvenient experiences. However, the case appears to be different while using TB's printer. Participants emphasized the significant advantage provided by the printer, particularly during high-traffic periods when numerous guests arrive simultaneously. The efficiency of the printer became evident, as it facilitated the check-in of guests in less than a minute, streamlining the process and enhancing the overall event flow. It is though important to highlight that on larger scale events the processes and the overall user journey might differ.

Another significant finding was that the printer is usually not operated by the customers, but volunteers and event personnel. This addition necessitates a broader understanding and accommodation of the different needs, capabilities, and roles within the service process. Therefore, it is necessary that during the design process, we must acknowledge and address the requirements of multiple distinct user groups (if relevant), ensuring that the service is tailored to meet the specific needs and preferences of each.

Lastly, during our observation at the Optimeet Expo, we noted two prominent trends: sustainability and digitalization. Many companies showcased sustainable offerings, such as digital name badges and products crafted from recycled materials. Additionally, the event

featured numerous discussions on ESG strategies and artificial intelligence. Reflecting on these observations, it is clear that the industry is currently aiming to put sustainability and technological integration in the forefront. This suggests an assumption that customers demand environmentally friendly practices next to leveraging technology to enhance efficiency and engagement.

5.1.4 Interviews with Customers

In the previous exercises our focus mainly lied within understanding the current experiences regarding Ticketbutler's name badge printer services. However, to open up to a broader context and gain insight into the world of event management, we needed to talk to experts in the field. Therefore, we initiated 4 in-depth interviews with some of the main customers of Ticketbutler. In-depth interviewing is a qualitative research method commonly used in service design to gather detailed information about users. It helps to generate nuanced and rich insights through data collection (Bjorner, 2016). Our goal for conducting interviews with customers was to identify their needs, motivations, and pain points regarding event organisation that could help us define our potential target group whom we could design a service for.

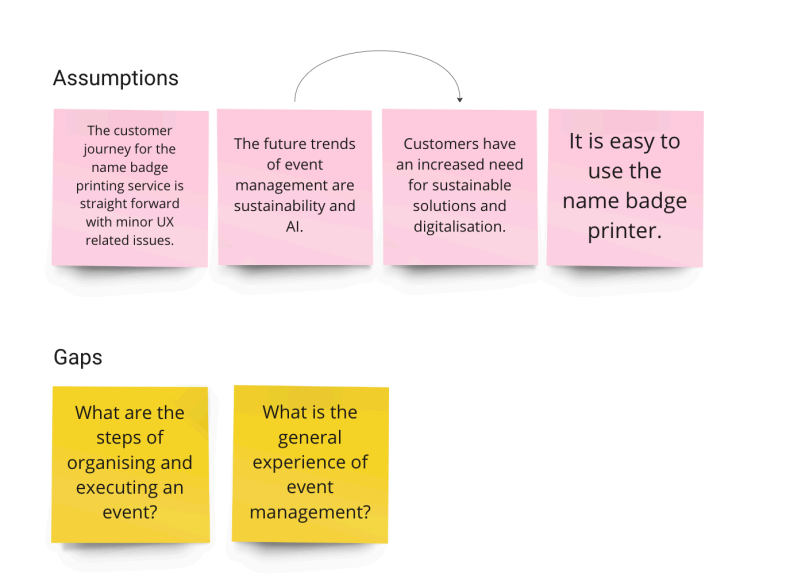

Figure 20: Current assumptions and knowledge gaps

In preparation for the interviews, we curated questions based on our assumptions gathered from the previous exercises and the gaps in our knowledge regarding event management as shown in Figure 20. Thus, we structured our interview guide focused on 3 topics: experience of event management, experience with Ticketbutler, and the future of events (Appendix 9.1.3).

To transcribe, code, cluster the collected data, we used Dovetail (dovetail.com, n.d.) to avoid spending too much time on manual work. This helped us streamline our analysis process and structure our insights efficiently (Appendix 9.1.4). Overall, the interviews proved to be effective to understand more about what businesses are interested in Ticketbutler. The method was essential to evaluate our assumptions, gain new knowledge, empathise with customers, and provide detailed information to define our target group.

However, our initial analysis suggested that we were only beginning to explore the depth of the topics we aimed to understand. Ideally, we would have conducted additional rounds of interviews with more customers to deepen our insight into these areas. Unfortunately, due to resource constraints such as time and access to interview participants, we have decided to proceed with the data currently available to us to develop a customer profile and create an experience map (refer to section 4.2.).

5.1.5 Horizon Scanning

As part of our research, our objective was to incorporate foresight methods in our design thinking process. Considering that we have gained a satisfactory amount of data about the present and past through the previous exercises, our next goal was to explore the future. Horizon scanning is a widely used foresight methodology. It has primarily taken role in the public sector and policy making for systematic examination of potential threats, opportunities, and development (UNDP, 2022). According to Konnola et al. (2012), horizon scanning is described as a "creative process of collective sense-making" by gathering and combining observations that could help predict future trends and make informed decisions. Today, there are various forms and frameworks for exploring what changes the landscape and more particularly for horizon scanning, but in this project, we are following a framework proposed by the UNDP (2022) as presented in Figure 21 that consists of 3 steps.

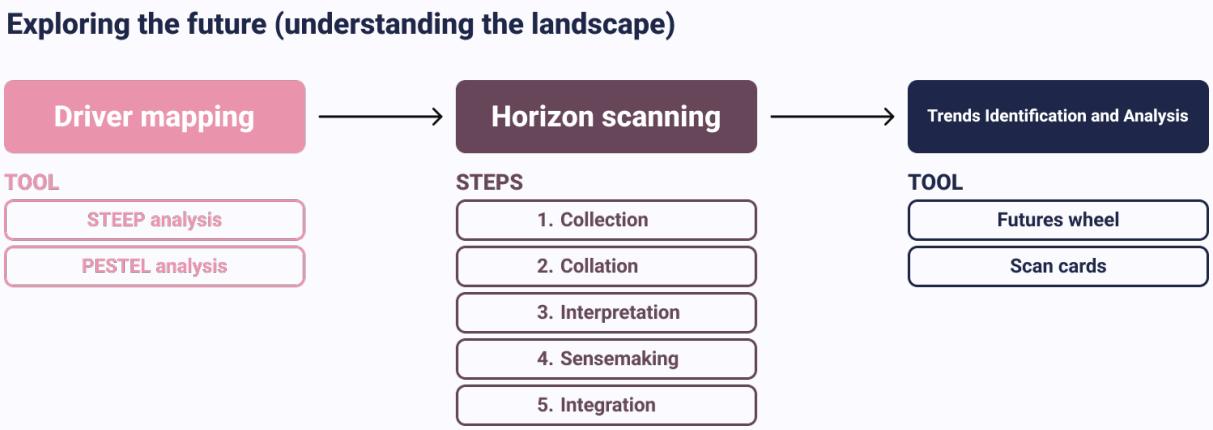

Figure 21: UNDP's framework for exploring the future

The first step for effective horizon scanning is Driver Mapping. Driver mapping is used for identifying the most influential forces of change in a system on a macro-level (ibid). Researchers like van Rij (2010) and Rowe et al. (2017) indicate that environmental scanning, or driver mapping, is instrumental in identifying current and known trends. This process lays the groundwork for horizon scanning, which extends the scope of analysis by continually monitoring and evaluating trends to anticipate and assess potential future changes and their implications. This dual approach provides a comprehensive framework for understanding both immediate and long-term environmental dynamics guiding the development of actionable insights and strategic solutions. Therefore, we began driver mapping using environmental scanning in the form of STEEP+E analysis—examining Social, Technological, Economic, Environmental, Political, and Ethical factors, and used desktop research to find the

appropriate drivers. This was a crucial step to structure and give a trajectory to our research for emerging trends. In Figure 22, you can see a breakdown of drivers identified. It is important to mention that we took several rounds to select the appropriate drivers that we find relevant in our project. Also, to avoid complexity for researching trends, we aimed to select one driver of each domain as shown in the figure.

Focal issue:

What is the future of Ticketbutler's event industry services

Drivers mapping

Social	Technological	Economic	Enviromental	Political	Ethical
Urbanising World	Hyper digitalisation	Micro-globalisation	Climate change	Geopolitical power shift	Human displacement
Evolving Demographics	Ubiquitous computing	De-globalisation	Resource scarcity	Political unrest	Ethical consumptions
Fragmenting Societies					Sustainability
Social polarisation					Privacy
Identity fluidity					

Figure 22: Drivers Map

The next step was to conduct the horizon scanning process. To collect relevant trends, we used desktop research. By reviewing several reports and articles, we could define numerous trends both from the perspective of event industry but also from a broad, generic viewpoint that we believe could impact the event industry in the future. For collating the identified trends, we organized them into a radar diagram to offer a clear depiction of the various domains and the anticipated timelines for these trends to emerge, as illustrated in Figure 23. As part of the sense making, we had intriguing discussions about the trends, critically reflecting on their relevance for Ticketbutler and the event industry, as well as their potential application in our design process. We found this stage extremely useful to broaden our perspectives by expanding our knowledge base on social, technological, economic, environmental, political, and ethical factors. This has certainly enabled us to have a clear overview of the opportunities and various directions for our project.

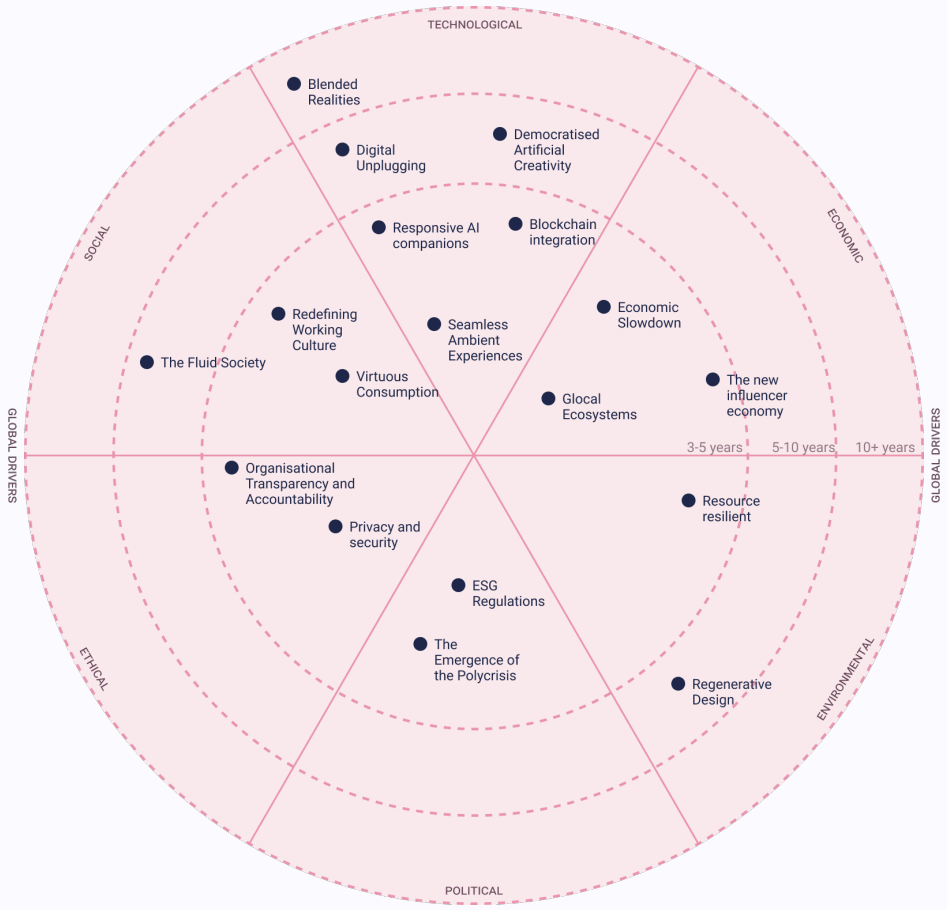

Figure 23: Radar representing relevant trends

The last step of this exercise was to synthesise the gathered data about the collected trends. As it was also important for us to involve Ticketbutler into out design processes and have a close collaboration with them, we concluded that it is important for us to present the trends to them and have reflective discussions about which direction we should explore. Hence, we visualised the trends on scan cards presented in chapter 5.2.1

Overall, the driver mapping exercise helped us to define the main domains and trend drivers accordingly. It provided a solid foundation for the horizon scanning and helped us to expand our perspectives and look beyond the obvious, giving us and Ticketbutler the opportunity to explore future states that are driven and proven by data. Considering that service design mainly anticipates and design for the near future, horizon scanning really helped us to look further in the future but still keep us grounded and tackle real problems and not problems that we invent ourselves. Reflecting on horizon scanning, it is evident that the tool's open-ended nature, which does not have strict rules set in advance about evaluating the importance of information or signals, presents both a freedom and a challenge. This flexibility required us to diligently select which drivers, trends, and signals might be relevant to the event industry. As newcomers to this method, we encountered a steep learning curve, which made the process quite time-consuming initially. It became clear that horizon scanning should be an ongoing process that could easily extend over weeks, devoted solely to defining these trends. Nevertheless, it enabled us to gather rich data about emerging trends and signals defining strategic opportunities for Ticketbutler. The data gather in this phase was used to generate scan cards that could summarise our findings and insights in an easily digestible format.

5.1.6 Initial Reflection

In the Discover phase, various service design methods were applied in combination with exploratory foresight tools. With the goal of assessing what is changing in Ticketbulter's landscape, we gained an initial understanding of the existing name badge printing service of Ticketbutler, the experience of event management and gather a portfolio of changing drivers and trends that have a strong potential to influence and shape the event industry's landscape.

Overall, we managed to do investigation from a user-centric and business-oriented perspective, expanding on the design capabilities with a strategic layer through implementing foresight methods. The blueprint helped us to visualise the current service offering of Ticketbutler. At this phase, it was mainly used as a communicational tool between us designers, and the team of Ticketbutler to help us align on the state-of-art service delivery from a user-centric point of view. One downside we observed utilising the blueprint in the Discover phase was that it was too detail oriented that enforced a very product focused, service-encounter level perspective.

Thus, when conducting the service safari and user shadowing, we noticed we focused a lot on the experience on the product and we zoomed in too much to understand the experience around the it. Even though it helped us understand the benefits of the printer and what gains it brings to customer and events in general, our perspective became very limited. Based on these reflections, we needed to take a different approach, and use the materials and collected data to understand the broader perspective. Thus, in the define phase we will analyse the data and findings with a more holistic, zoomed out lens, focusing on unveiling the general customer experiences.

Ultimately, we believe that utilising horizon scanning enabled us with an extended perspective and guided us to focus on a bigger picture. Although it was time-consuming to acquire the tools, it showed a big potential to complement service design processes encouraging strategic thinking.

5.2 Define

For the second phase of the Double Diamond, the focus shifted to defining the right problem that needed to be solved based on insights from the earlier discovery phase. This step was crucial for setting the project's direction by examining and synthesizing the collected data in depth to identify patterns, understand the main issues, and pinpoint pain points.

This process contained a series of methods, including a workshop with Ticketbutler to collaborate and align on the direction of the project. The define phase was thus structured around formulating a set of critical research insights, which include visualizing and/or defining:

- The Identified trends, prioritize them, and select key trends to define the direction for the service we attend to design.
- The target group for whom we are designing.
- Pain points of the target group
- Ticketbutler’s vision for the future.
- The right problem to address.

The outcome of the process resulted in a refined problem statement, which served as the foundation for the design brief. The design brief is intended to serve us as guide through the upcoming Develop phase by outlining the project's goals, target group, and expected outcomes. It aims to ensure a coherent approach to design and development, providing a clear path forward.

5.2.1 Scan Cards

In our horizon scanning, we identified several signals of change and emerging trends. To synthesize all the data collected, we drew inspiration from a tool called Scan Cards that has been broadly used by many future and foresight practitioners (Dyrman et al.). Scan cards are used to capture signals of change and emerging trends by documenting them on cards that include various elements: an evocative image, a tag indicating the trend's driving force, a title, a subtitle, a brief description, a reflection on the trends/ signal's potential or relevance, and the sources from which the signal was identified (ibid).

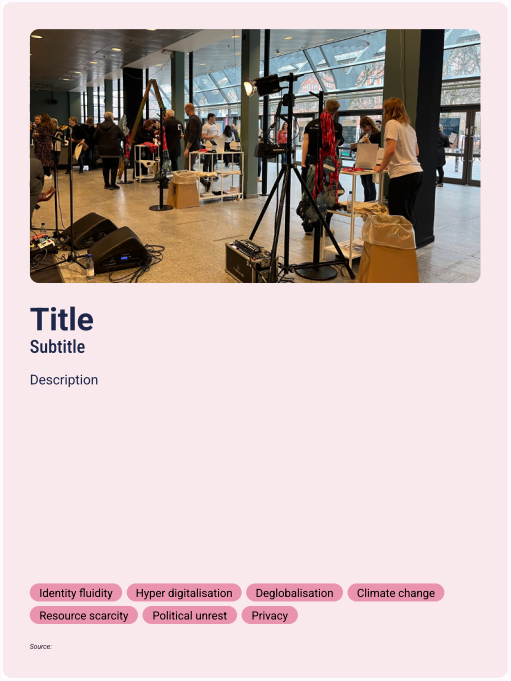

Figure 24: Anatomy of Scan Card

Figure 24 shows the anatomy of our Scan Card, and we did not include a reflection of the trends/signal, as we precisely intended to use the Scan Cards for an initial round of interpretation to assess the relevance of each signal in the context of the Ticketbutler domain and business landscape. Figure 25 shows an example of the finalized Scan Cards that mainly consisted for trends and a few signals of change.

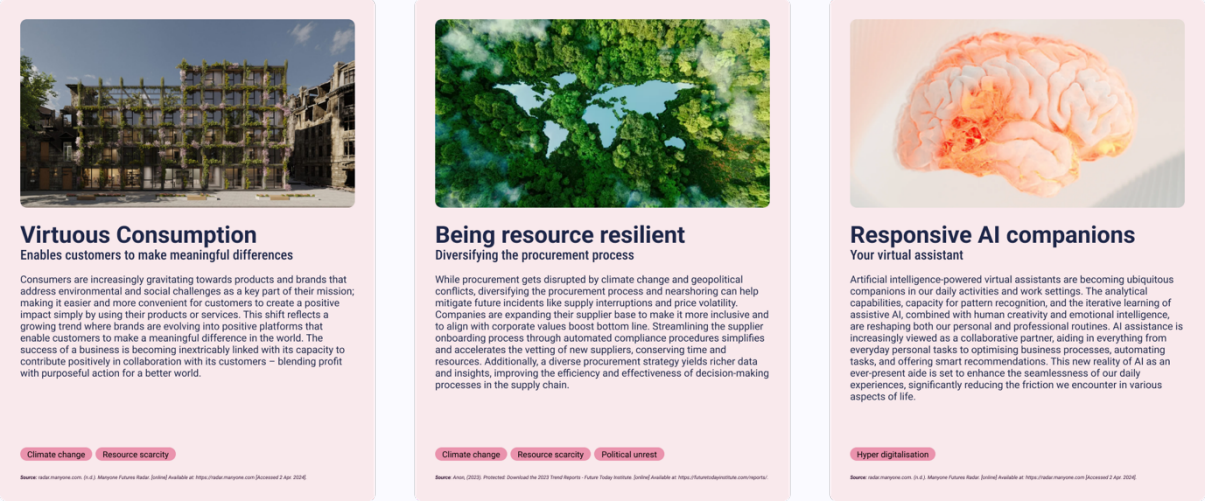

Figure 25: Example of the finalized Scan Cards (view all in Miro)

After the initial round, we pre-prioritized the Scan Cards to prepare for a workshop with Ticketbutler later in the design process, as we knew we wouldn't be able to assess the relevance of all the Scan Cards within the limited time available during the planned workshop.

5.2.2 Customer Profiles

Through in-depth interviews with Ticketbutler's key customers and referencing Ticketbutler's existing but limited Ideal Customer Profiles (ICPs), we defined the target group for whom we are designing. To communicate our target group effectively, we decided to create a detailed Customer Profile.

Customer profiles, or personas, are commonly used artifacts in human-centred design as archetypical representations of real or potential users for defining a shared understanding of users' needs, experiences, behaviours, and goals (Dam and Siang, 2022; Blomkvist, 2002). They are used to synthesise collected empirical data about users in a concise and structured way. Even though, there is a debate about the values of using them as they often describe fictional characters, considering the design maturity of Ticketbutler, we want to provide them tools that are simple enough to utilise and maintain. However, it is essential for us to curate the most essential information about the customers that are derived from empirical data. Thus, our main target is to develop goal-driven personas to gain deep understanding about the preferred processes and actions of the main user groups to reach their goals while interacting with the current service. This also means that we are not focusing on demographical data such as age range, gender, marital status, etc, as such data would not provide additional value of the targeted B2B customers.

Figure 26: Customer Profile (view in Miro)

The customer profile (Figure 26) combines key information about the types of companies where event managers typically work, along with the kinds of events these companies organize. It also addresses the common challenges that event managers face, especially those related to event execution and name badge printing. Additionally, we identified the motivations and needs of event organizers, helping us understand what drives their decisions and what solutions they seek. Lastly, we explored future needs based on interviews and assumptions derived from the trend cards.

We recognize that the customer profile would benefit from conducting follow-up interviews with the original interviewees and extending the interviews to other customers, as it was challenging to identify patterns from the four interviews we conducted. But as previously mentioned, this was not feasible within constraints of resources and the project timeline.

5.2.3 Experience Map (Current Pain Points and Opportunities)

From the in-depth interviews with customers, we also collected data that allowed us to define the current end-to-end event management experience from a holistic and zoomed out view. To visualize this data, we used a simplified Experience Map (Figure 27), which helped us represent user actions and identify key pain points, backed by supporting quotes.

Figure 27: Experience Map (view in Miro)

An experience map (Gibbons, 2017) is a visual representation of the complete end-to-end journey that a "generic" person undertakes to accomplish a goal. Unlike a customer journey map, which is specific to a particular service or product, an experience map is more universal, focusing on understanding general human behaviour.

This broad perspective enabling us to look beyond the insights we gather through our onboarding with Ticketbutler. It helped us understand the behaviour of an event manager as they organized and executed an event, allowing us to define the main pain points and identify opportunities for improvement.

Again, it would have been ideal to conduct further interviews to uncover additional insights into the behaviour of event managers. However, we began to see clear synergies between the highlighted pain points and the trends we had identified and visualized with scan cards. This alignment suggested potential pathways for addressing the issues faced by event managers in innovative ways. We also wanted to involve Ticketbutler in this discussion, so the next step was to facilitate a workshop with them. This collaborative approach aimed to share our findings and gather additional insights from Ticketbutler's perspective to help choose the right problem and trend(s) to address.

5.2.4 1st Workshop with TB

For the workshop with Ticketbutler, we prepared three exercises to be completed within a 1.5-hour session. These exercises were designed to encourage engagement and facilitate productive discussions. We gave a short introduction to our thesis topic before starting the exercises as not everyone was familiar with context of our project.

The workshop participants included the CEO and co-founder of Ticketbutler, a Sustainability Business Development Specialist - Onsite Supervisor Lead, a Logistics and Operations Coordinator, and a Product Owner and UX Designer. This diverse group brought a range of perspectives and expertise to the discussion.

The intended outcomes of the workshop were to:

1. Define Ticketbutler's vision for the future to ensure we select trends that align with it and the service we aimed to design.
2. Explore potential futures by utilizing the trend cards and the futures cone, then select three trends that seemed interesting to design for to future-proof their services.
3. Transition into the Develop phase by conducting an initial "what if" ideation exercise.
4. Assess Ticketbutler's current level of resilience in the context of being able to address our research question.

5.2.4.1 Exercise 1: The four Questions about the Future

The first exercise was inspired by The Seven Questions method, developed by Pierre Wack—the godfather of scenario planning—for the Royal Dutch Shell Group in the 1960s and 1970s to assist with scenario planning (Sanders, n.d.).

It is a powerful tool for gathering opinions from diverse stakeholders on the strategic issues that need to be addressed in a given domain, while also highlighting areas of agreement or conflict regarding the way forward (The Futures Toolkit Tools for Futures Thinking and Foresight Across UK Government Edition 1.0, 2017).

Due to time constraints and the fact that not all seven questions were relevant for defining Ticketbutler's vision, we adapted the method to suit our needs. We modified the questions and technique, narrowing them down to just four questions, aiming to help Ticketbutler to define their long-term vision. According to Molla (2023), defining a business's long-term vision is important as "it provides direction, encourages innovation, attracts investors, motivates employees, facilitates planning, and builds brand reputation". The first three questions were exploratory and designed to be answered individually, prompting the participants to think long-term considering both good and bad futures. Afterward, the group collaborated to answer the fourth question, which was to formulate Ticketbutler's vision. Figure 28 displays the Miro board for the exercise. Ultimately, the exercise helped us define Ticketbutler's vision for the future, which is presented in the design brief (refer to section 4.2.6).

Figure 28: The four questions about the future (view in Miro)

5.2.4.2 Exercise 2: Trend Analysis

With a shared understanding of Ticketbutler's vision for the future, the next step was to determine how to potential fulfil the vision. Therefore, the objective of the second exercise was to explore the pre-prioritized Scan Cards and identify which trends the participants considered relevant from Ticketbutler's perspective to help achieve the goal.

Before presenting the Scan Cards, we introduced the concept of The Futures Cone (refer to Figure 4) to establish a common understanding of how to navigate the present with an eye toward future possibilities for Ticketbutler.

As shown in Figure 29, the exercise consisted of three smaller tasks. The first task was to discuss which of the trends the participants found relevant and interesting to explore, and why. Additionally, they had to consider where these trends might fit on the Futures Cone and why, as well as how far into the future they wanted to focus.

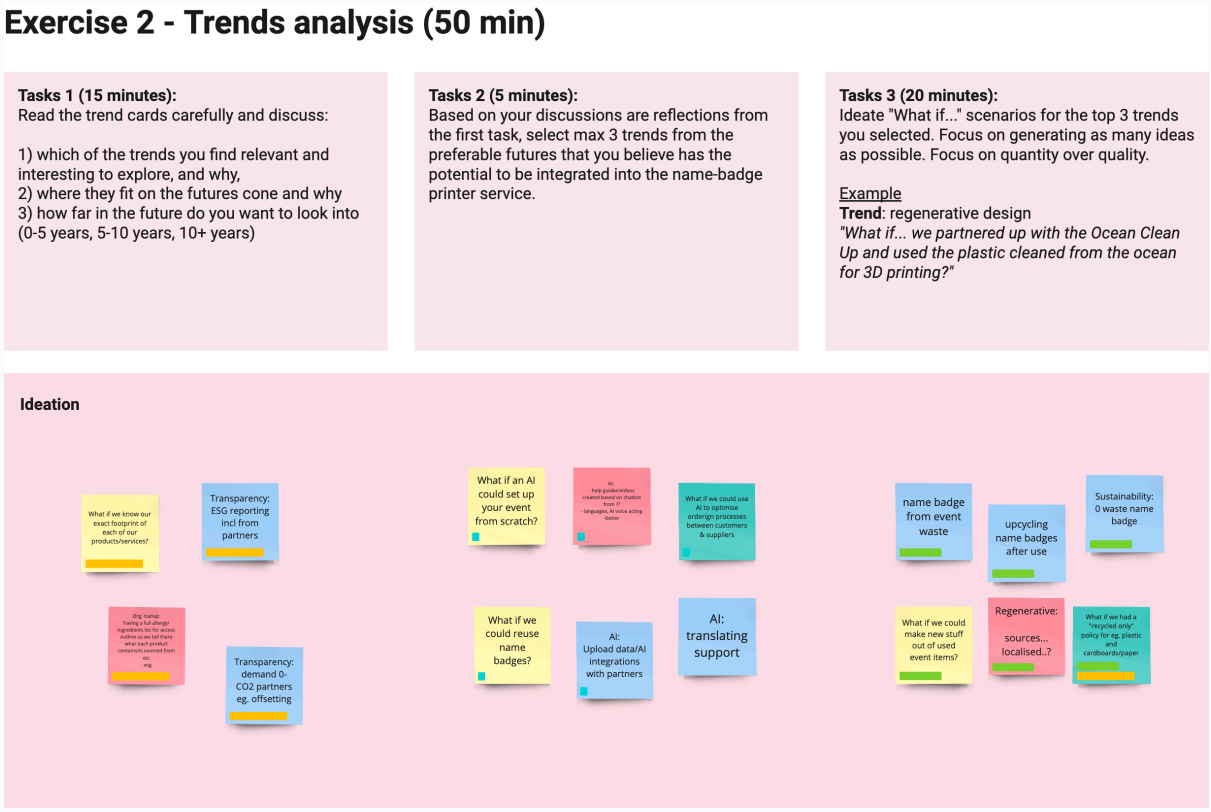

Figure 29: Trends Analysis (view in Miro)

This discussion led to the next task of selecting three Scan Cards from the preferable futures that the participants believed could be integrated into Ticketbutler's services to future-proof them. Figure 30 shows images taken during the execution of the task, capturing moments from the ideation session and illustrating the participants' engagement in the process.

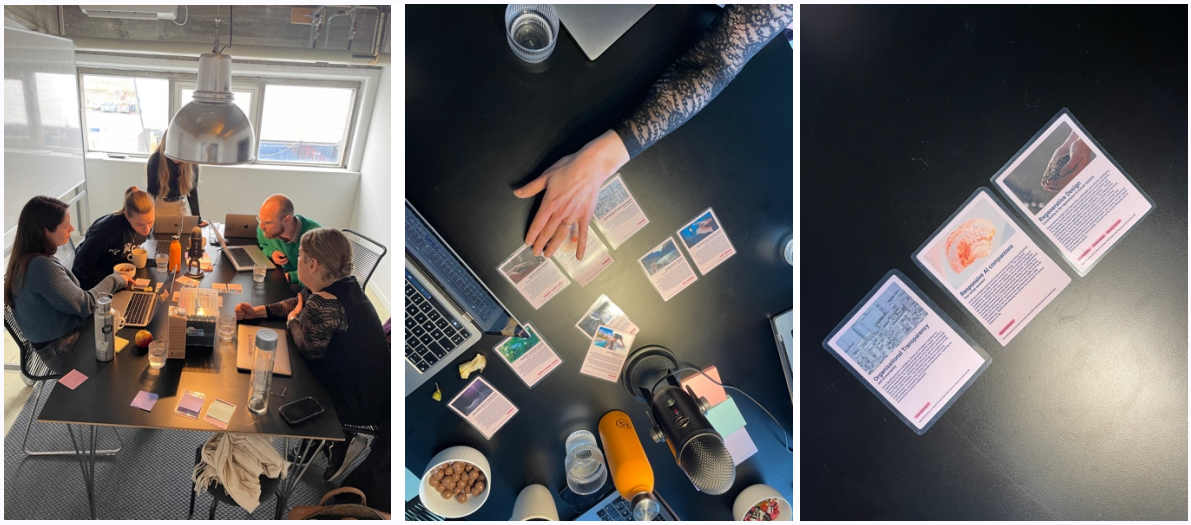

Figure 30: Photos form the trend analysis exercise

After the selection, the third task involved a brief “What If” ideation session. The 'What If' method is a simple ideation tool that involves asking open-ended questions within a limited timeframe. It helps a small team quickly generate many ideas, which can then be grouped and prioritized for follow-up (miro.com, n.d). It is a suitable method to prompt future’s thinking as it helps exploring how a service could be affected by wide-ranging changes. This enables us to envision potential threats and opportunities and prepare for problems that are about to encounter (Stickdorn and Schneider, 2015).

The outcome of the second exercise was the selection of three Scan Cards that Ticketbutler found relevant and interesting to pursue to help achieve Ticketbutler's vision. The 'What If' method provided us with inspiration for ideas related to each trend, allowing us to see the potential of one trend over another and serving as a guide for the trend and problem we might choose to solve. This outcome marked a transition, wrapping up the Define phase and moving forward to define our How Might We (HMW) question.

5.2.4.3 Exercise 3: How Resilient Is Your Organisation?

We ended up running over time with the first two exercises and concluded that we did not have time to facilitate the final exercise during the workshop. Instead, we planned to collect feedback on Ticketbutler's organizational resilience by providing a questioner-like exercise (Figure 31) to the participants, which they could complete at their convenience.

The survey-like form is inspired by the proposed Resilience Analysis Grid outlined in the literature review (refer to section 2.3.3: Measuring Organizational Resilience). The purpose of this form is to gain insights into how resilient Ticketbutler currently is, or at least gauge the perception of its resilience. This will enable future comparisons and assessments to determine whether integrating strategic foresight tools into a service design process can foster greater organizational resilience.

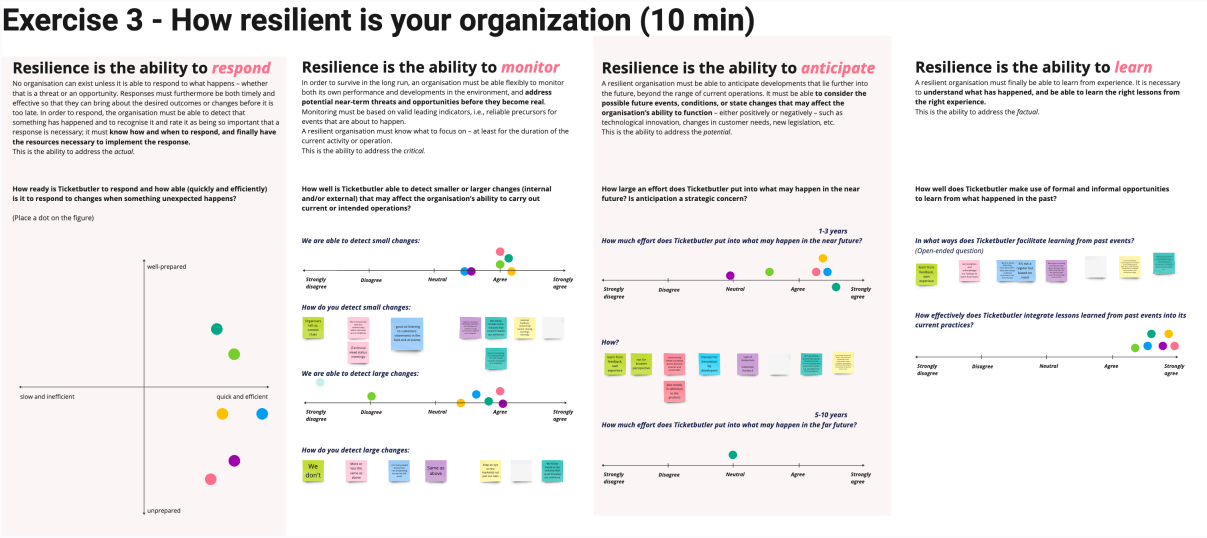

Figure 31: Assessment of Ticketbutler's current organisational resilience (view in Miro)

5.2.5 Refined Problem Statement

After the workshop with Ticketbutler, we initiated a group session to reflect on which of the three trends we found interesting on a personal level, as the workshop had already identified the three trends relevant for Ticketbutler. Combined with the patterns and challenges we observed, by analysing and going through all our materials again we decided upon tackling the trend: Regenerative design.

Regenerative design contributes to the regeneration of natural systems: *"It goes beyond the sustainable and net-zero paradigms, embracing circular practices that actively give back to local ecosystems. The approach focuses on creating built environments, products, and systems that do more than just minimise negative impacts – instead contributing to the regeneration of natural systems. The regenerative approach is set to reshape the next generation of products and services, influencing how we design, build, and measure impact. It involves rethinking materials, processes, and end-of-life cycles to ensure that everything we produce not only has a minimal environmental footprint but also positively contributes to ecological health. As a result, we can expect future designs to be more holistic, considering the entire lifecycle and its effects on the planet"* (radar.manyone.com, n.d.).

This trend aligned with several pain points we had highlighted on the Experience Map. It also matched the present and future pains, barriers, needs, and motivations identified in the customer profile we created. Additionally, it resonated with insights gained from the observation outing and the conducted service safari.

The session continued with an individual brainstorming on HMW questions, followed by a dot voting process to determine which problem statement to proceed with and refine further (Figure 32). This process led to the final problem statement, our HMW question.

Figure 32: Group session: Brainstorming on HMW questions

Initial problem statement:

How can we design a future-ready service for Ticketbutler around their name badge printer to enhance their competitive advantage and resilience?

Refined problem statement:

HMW design a service that helps event organisers connect people nationally and internationally in a more sustainable way by leveraging regenerative design?

5.2.6 Design Brief

A design brief was used to summarize the relevant findings from our research, providing a clear overview and setting the stage for the development phase, where we'll create the service concept. It also includes the problem and our HMW question we're addressing, the goal we're aiming to achieve, the target group we're designing for, and the key considerations as well as what will be avoided in the concept.

Additionally, the design brief acted as a summary for a checkpoint with Ticketbutler, helping to ensure alignment and allowing us to get confirmation and feedback on our approach.

What we know (key insights)

From interviews:

- In person events is a priority from the customers
- In person events produce a lot of waste – contradicts with sustainability
- Sustainability is an emerging priority and demand
- Event mangers motivation for using Ticketbutler
- Potential future needs related to executing events

From trend analysis:

- In person gatherings is a trend that is expected to persist
- Regenerative design is an emerging trend

- Potential future customer needs
- Poly-crisis and resource scarcity

From workshop:

- Ticketbutler's vision is to be the trusted and leading sustainable partner for event organisers, both locally and internationally. Our mission is to help event organisers create memorable experiences with minimal environmental impact. We aim to transform the way people gather, ensuring that every event we are a part off is a step towards a more connected and sustainable future.

The problem we want to address

The current solutions used by event managers to organize and execute in-person events lead to significant waste. This contradicts with the global push for sustainability, which has now impacted the event industry as well, driven in part by client demands and the demands of the companies the Event Managers represent. As the climate crisis intensifies and resource scarcity becomes more pronounced, along with a growing world population, the focus on sustainability will only grow stronger. Consequently, Event Managers are seeking sustainable practices that minimize waste to integrate into their events.

The refined problem statement

HMW design a service that helps event organisers connect people nationally and internationally in a more sustainable way by leveraging regenerative design?

The goal

The overall goal is to deliver a service concept that considers customers current and future needs and enables Ticketbutler to future-proof their current name badge services by responding to trends, specifically regenerative design. This approach aims to help Ticketbutler maintain a competitive advantage and relevance in the event industry, while also working toward their long-term vision.

Whom we are designing for

- Corporate organisations and event companies targeting corporate clients and companies (B2B)
- Host one large annual event with up to 1000 attendees, alongside 10-30 smaller events annually accommodating 50-400 attendees
- National (DK) and international customers who organize local and international events
- Ticketing pricing ranges from free to 10,000 kr.

What we want to include

Incorporating regenerative design principles into Ticketbutler's name badge services to create a new service that aligns with Ticketbutler's strategic vision.

What we want to exclude

We intent to exclude specific financial or logistical consideration in relation to the solution's feasibility, as this is not within the scope of our service design project.

5.2.7 Initial Reflections

In the Define phase, various design methods were again applied in combination with foresight tools. The goal was to narrow down the project's scope, clarify the problem, define the target group, and engage with stakeholders to ensure alignment.

The Customer Profiles played a crucial role in helping us identify and articulate the characteristics of our target group in a clear and accessible way. Typically, these profiles address needs expected in the near future. However, we went a step further and used the emerging trends to anticipate long-term needs. We acknowledge, these far future needs are based on assumptions. Ideally, we would have benefited from creating specific scenarios, sharing them with Ticketbutler's customers, and gathering their feedback to validate our assumptions or uncover additional insights into their potential future needs. However, due to our limited access to customers, this was not possible.

The Experience Map allowed us to visualize the current and holistic end-to-end event management experience. This broader view, encompassing the before, during, and after phases of an event, highlighted potential areas for Ticketbutler to improve or expand its services. Both the Customer Profiles and the Experience Map will be invaluable resources as we move into the next stages of the design process, providing a solid foundation for user-centred ideation.

During the workshop, we were able to engage a diverse group of stakeholders within Tikcetbulter. This workshop was a crucial moment in assessing “what could be Ticketbutler’s potential place in the future”, as raised in Manyone’s design-driven foresight framework. The Scan Cards helped us visualise and communicate the trends and signals of change we discovered in the previous phase with stakeholders. They played a key element for the workshop with Ticketbutler and the direction of the project. The workshop allowed us to involve stakeholders in our design process, guiding the project in a direction that aligned with Ticketbutler's interests and fostering their investment in the project's success.

The Resilience Analysis Grid provided insights into Ticketbutler's current resilience, but we were surprised by the high scores’ stakeholders assigned to the company's organizational resilience. This unexpected result might stem from the grid being better suited to measure resilience in large organizations rather than in smaller, scale-up companies like Ticketbutler, even though we tried to customize the questions to fit Ticketbutler's characteristics. We are curious to explore later in the process whether Ticketbutler will find that the new service we design for them enhances their organizational resilience. We also want to explore whether they could help assess if foresight combined with service design achieves this outcome. We believe that through discussions with the team we can evaluate our research question as we have tried to engage them as much as possible throughout the design process.

Ultimately, this initial reflection highlights the importance of this phase in shaping a project’s direction and the need for ongoing collaboration and stakeholder engagement to ensure a successful outcome.

5.3 Develop

In the Develop phase, our journey took a deep dive into an iterative ideation and concept testing process. Referring to Manyone's design-driven foresight framework we aim to explore what could be Ticketbutler's potential place in the future. Therefore, during the develop phase, combined with insights from the previous phase, our primary objective was to cultivate a portfolio of future ready ideas based on the design brief we defined in the previous phase. For ideation, we used "What if…" scenarios, the 10 plus 10 method in the form of brainstorming and sketching. To validate the concepts, we engaged in a series of prototyping techniques supporting the exploration and testing of future-based concepts. For prototyping we used most of all storyboards, sketching, scenario testing and cardboard prototyping. Collaborative and co-creative efforts with stakeholders were pivotal during this stage to ensure we would deliver a service that is feasible and desirable for not only the users of the service, but for Ticketbutler as well.

In this section, the following topics will be discussed:

- 10 plus 10 method
- Idea portfolio evaluation
- Second workshop with Ticketbutler
- Assumption testing through prototyping
- Initial reflections

5.3.1 10 plus 10

After defining our final problem statement, we ran another round of What if… scenario generation session to lead and structure our ideation for a regenerative design solution (Figure 33). This was done individually to kick-start our design ideation session which we performed by utilising the 10 plus 10 ideation method. The 10 plus 10 is brainstorming exercise for quick, iterative and structured idea generation. The goal is to sketch several ideas based on a common starting point (in our case the HMW), generating around 10 ideas in one round. After sharing and discussing each idea, one concept is chosen from the pile which is then used as the starting point for the second round of ideation sketching another pile of 10 ideas (Stickdorn et al., 2018).

After the first round of ideation, we ended up with 12 ideas (Figure 34). While presenting them to each other, we found similarities in our concepts and concluded with two major topics: one focused on providing biodegradable name badges, and one on producing name badges from waste generated at events. Next to this, we also noticed that we were mainly focused on the product aspect, thus we agreed to focus on outlining the service aspects in the second round. Considering that our individual ideas were quite similar to each other, we saw a potential in combining 5 ideas together. Thus, for the next round of ideation we choose our top 5 concepts (Figure 35) to build up on now focusing on an ideation for a holistic service concept.

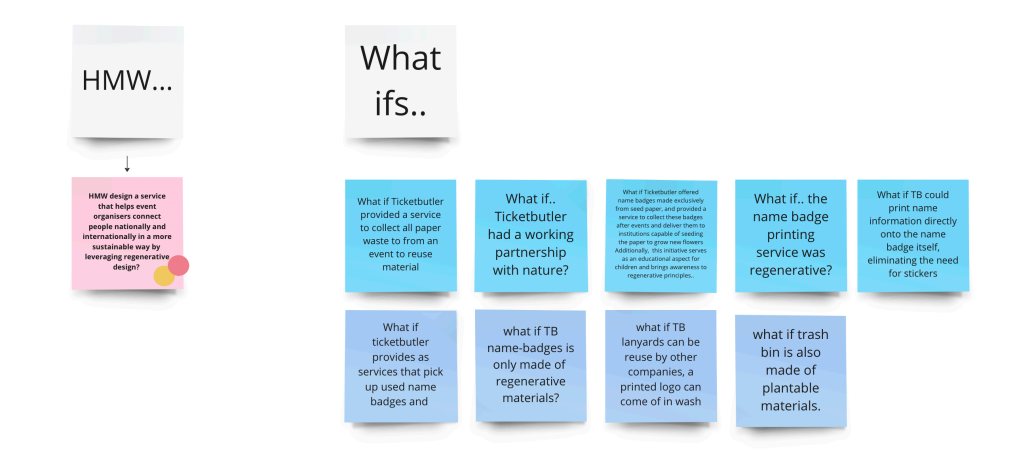

Figure 33: What if scenarios derived from the problem statement

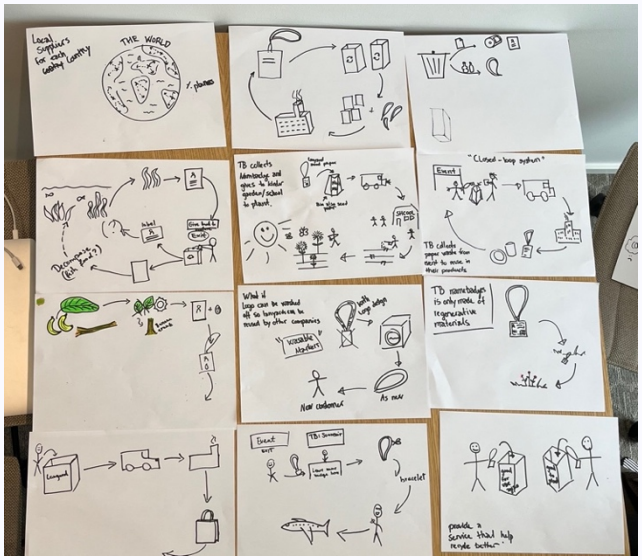

Figure 34: Ideas capture in the first round of 10 plus 10 method

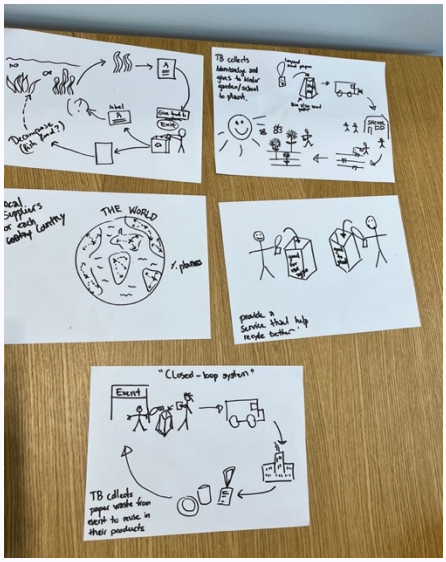

Figure 35: The 5 selected concepts for the second round of ideation

During the ideation session, we also noticed some gaps in our knowledge about regenerative design. Thus, in parallel to the ideation, we also conducted desk research about current practices of regenerative design to ensure the feasibility of ideas. Along the research it occurred to us that the discipline is manly practiced in urban design. Even though we were limited to getting inspiration regarding how to incorporate it to the event industry, we could gain more in-depth knowledge about the discipline through specific examples. Nevertheless, the second round of ideation provided a new set of 10 concepts (Figure 36).

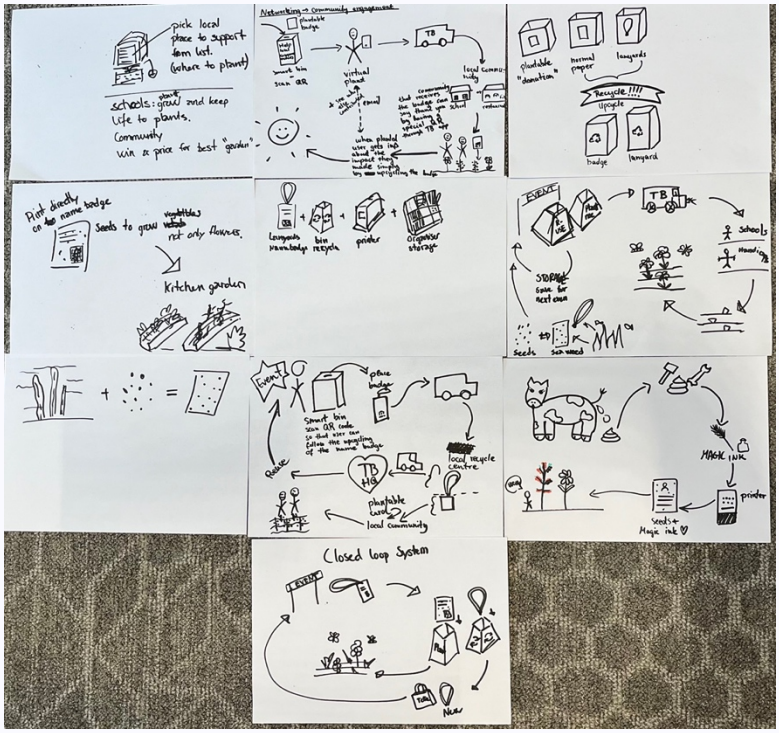

Figure 36: Ideas from the second round of 10 plus 10 method

Overall, the 10 plus 10 method enabled us to generate a portfolio of ideas fast and effectively. At times it was hard to sketch the concepts especially when the goal was to capture an end-to-end service. Therefore, especially in the first round, we got stuck in a product focused mindset which was difficult to break out of. Another challenge we encountered during this exercise was the generation of diverse and unconventional ideas. This was due to the niche market that Ticketbutler represents and the direction we chose with our design brief focusing on future-proofing the name badge printing service through incorporating regenerative design. Despite these challenges, the method enabled us to generate a lot of useful ideas, uncover details fast and communicate complex ideas easily through sketching.

5.3.2 Idea Portfolio

Considering that we have generated 20+ ideas, our next step was to organise and evaluate them and find a starting point for prototyping. This step was essential in making a decision about which idea(s) would be worth presenting to Ticketbutler and test with potential users. Our chosen method for quick and reliable sorting was the “Idea portfolio”. The Idea Portfolio method is a systematic, analytical approach to evaluating and prioritizing ideas by ranking them according to two key variables (Stickdorn et al., 2018). The method involves arranging ideas on a portfolio or graph, where each axis represents a different variable critical to the decision-making process. Common variables include feasibility, impact, cost, and innovation level, although these can be tailored to specific project needs or organizational goals.

In our case, we ranked the ideas based on their *feasibility* to implement into Ticketbutler’s name badge printing service and the level of *impact* the service would achieve through its value proposition towards regenerative design. Before arranging the sketches on the graph, we eliminated the ideas that were too similar to each other and kept the best representation of

those overlapping concepts to ensure having a clear overview. After, through engaging discussions we started arranging the sketches on the graph while reflecting on the two variables. As we added more and more ideas, we needed to rearrange the placement of some of the sketches on the graph, that resulted in a very thorough evaluation process. The process resulted in selecting the 5 best ideas defined through their impact and feasibility (Figure 37). These 5 ideas helped us to define our service concept that we have decided to move forward with (Figure 38).

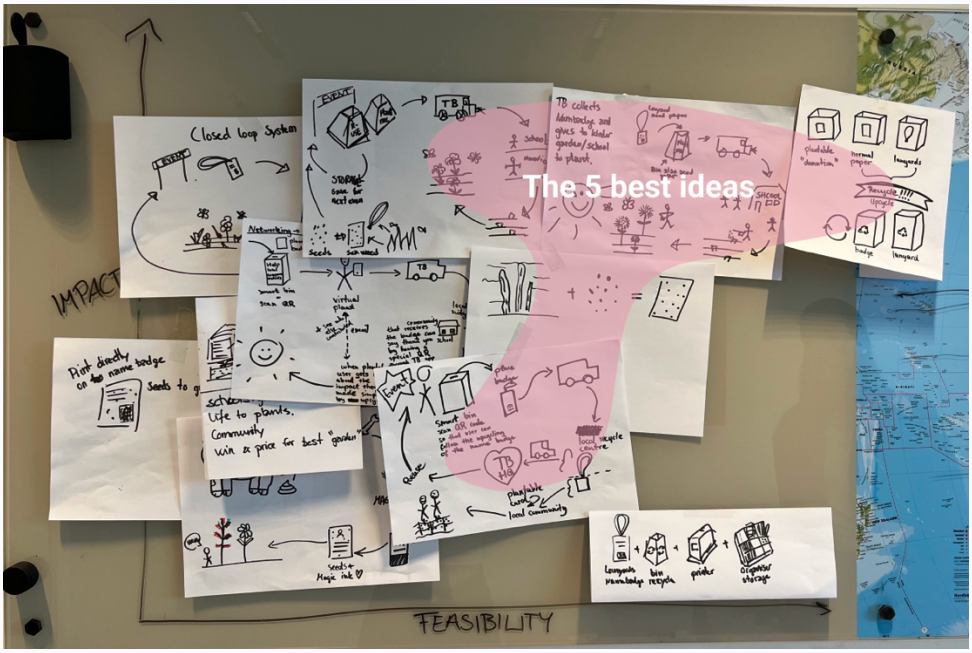

Figure 37: The 5 most impactful and feasible ideas

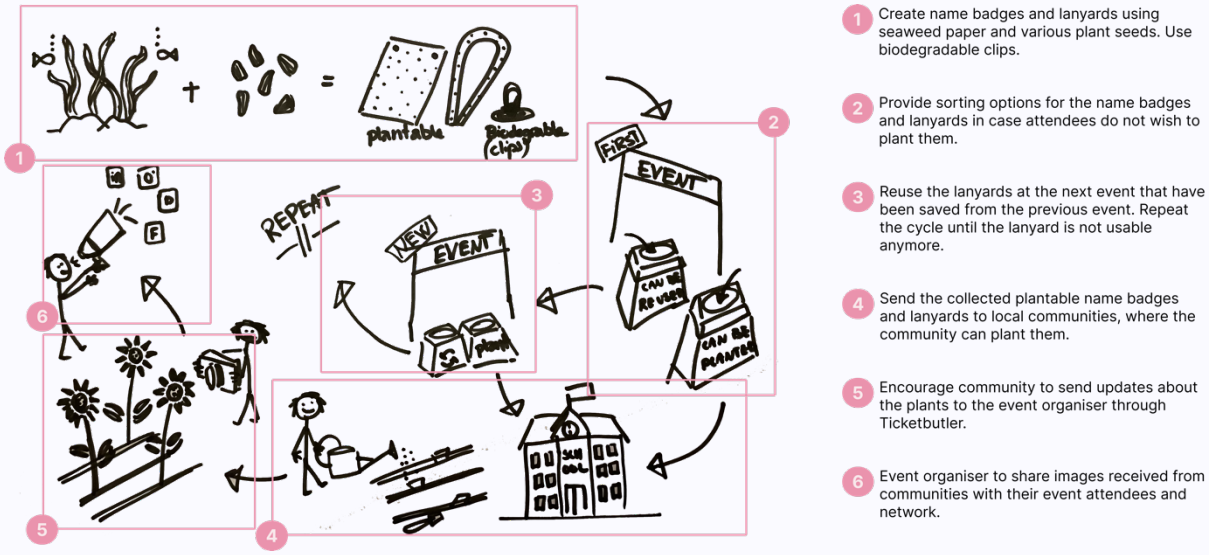

Figure 38: Concept created based on the 5 potential ideas

Overall, the method proved to be a straightforward and efficient tool for selecting the best ideas, despite our initial unfamiliarity with it. Its application was quick, aiding in effective idea evaluation. As we engaged in discussions to justify the placement of ideas on the graph, it fostered a process that encouraged unbiased decision-making. This method allowed us to set aside personal preferences and focus on objective criteria and strategic alignment. Although, our main objective with the application of the method was to select an idea we could move forward with quickly, we observed potentials for more nuanced evaluation processes. Thus, in the future, it could be considered to alter the variables for a more advanced and nuanced evaluation, potentially through multiple rounds, to further refine the decision-making process.

5.3.3 2nd Workshop with Ticketbutler

During our checkpoint with Ticketbutler, we presented a simplified version of the design brief including the main insights about the target group, the vision that we defined based on the outcomes of the previous workshop, and finally, the defined How Might We question. This helped us to argue for the rationale behind our idea and provide context to the final concept. This was a collaborative session involving five stakeholders from the company, aiming to integrate the team more thoroughly into the ideation and development process. The presentation of our idea sparked a productive brainstorming session where we explored further iterations and variants of the concept (see Figure 39). Stakeholders were encouraged to sketch or write down new ideas, challenging the current concept and raising questions that led to a more refined approach.

The reflection phase was particularly insightful. Although the ideations were initially very product-focused, the feedback received during the session helped us simplify/change some details of the service without altering the overall concept. For instance, having the team's product-oriented experience and expertise, we could conclude that the biodegradable clip can be eliminated as it is possible to attach the name badge and the lanyard together without it (see in Figure 40 how). By removing such a small element, we could simplify the service eliminating additional concerns such as the management of the biodegradable clip from a regenerative perspective. Apart from this, the stakeholders particularly appreciated the circular and educational aspects of the idea, as well as the involvement of local communities. This positive response confirmed our direction towards developing a service, reinforcing that our approach was well-aligned with the company's values and goals.

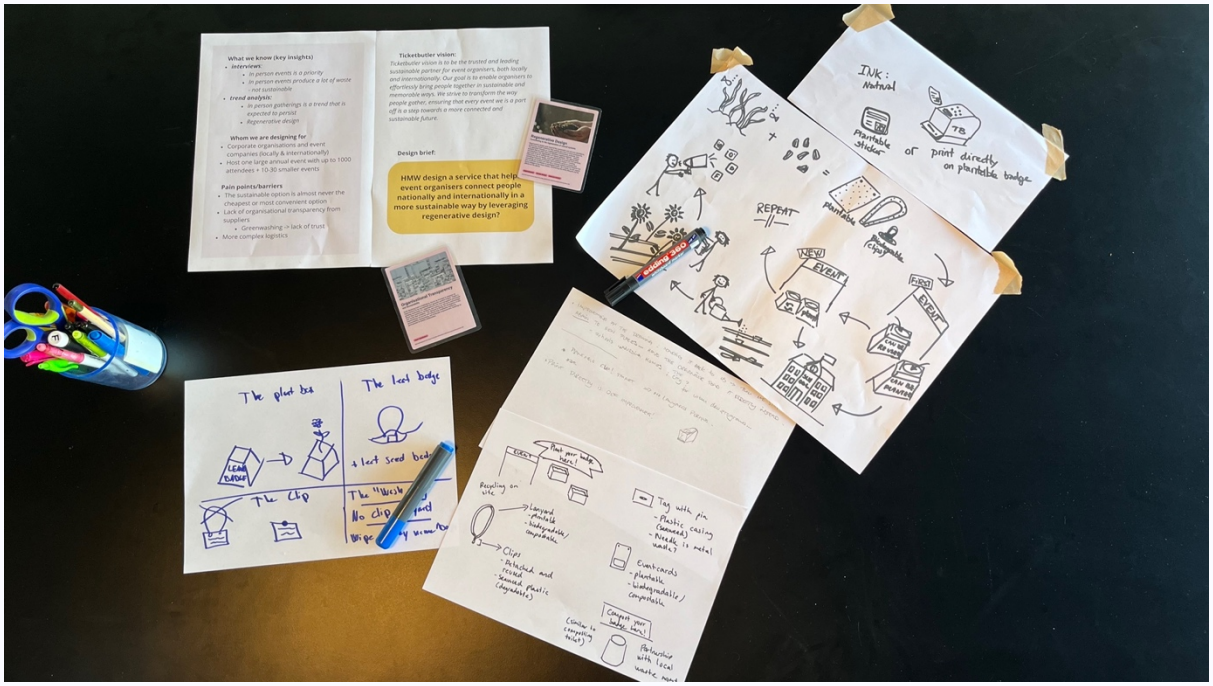

Figure 39: Some of the materials presented and produced during the second workshop

Figure 40: Plantable name badges designed to eliminate clipping

5.3.4 Testing Assumptions through Prototyping

Having the service concept approved by Ticketbutler, the next step was to refine, prototype and test the critical aspects of the service. In preparation we created an initial, low fidelity storyboard (Figure 41) defining our target users' journeys and motivations, created cardboard

prototypes for the service walkthrough (Figure 42) and an interview guide evaluating (Appendix 9.3.1) the overall service concept. The primary goals were to refine the idea, validate our assumptions, and enhance the overall feasibility, desirability and viability of the concept (see objective in Figure 43).

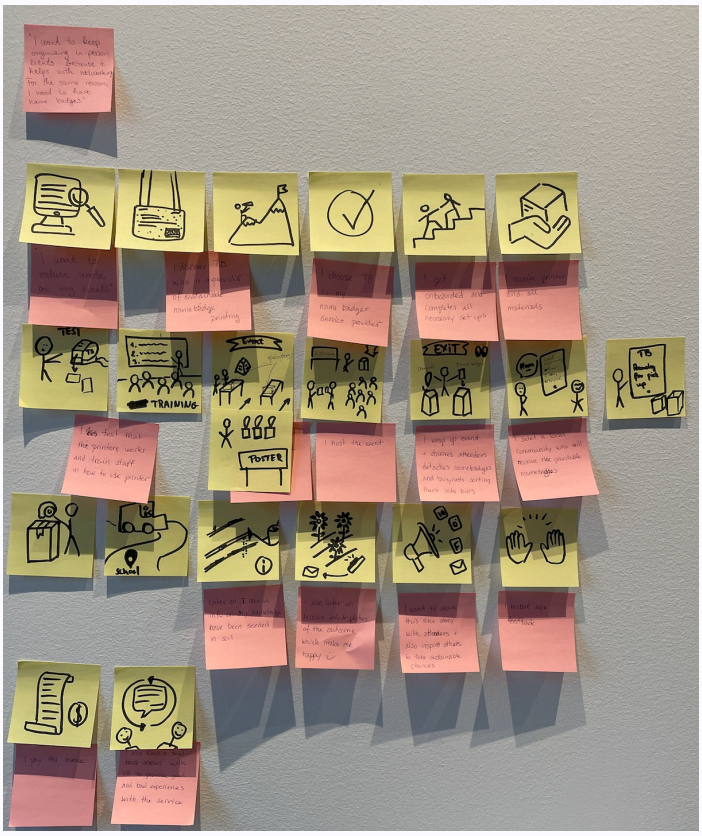

Figure 41: Low-fidelity storyboard

Figure 42: Cardboard prototypes of the recycle bins

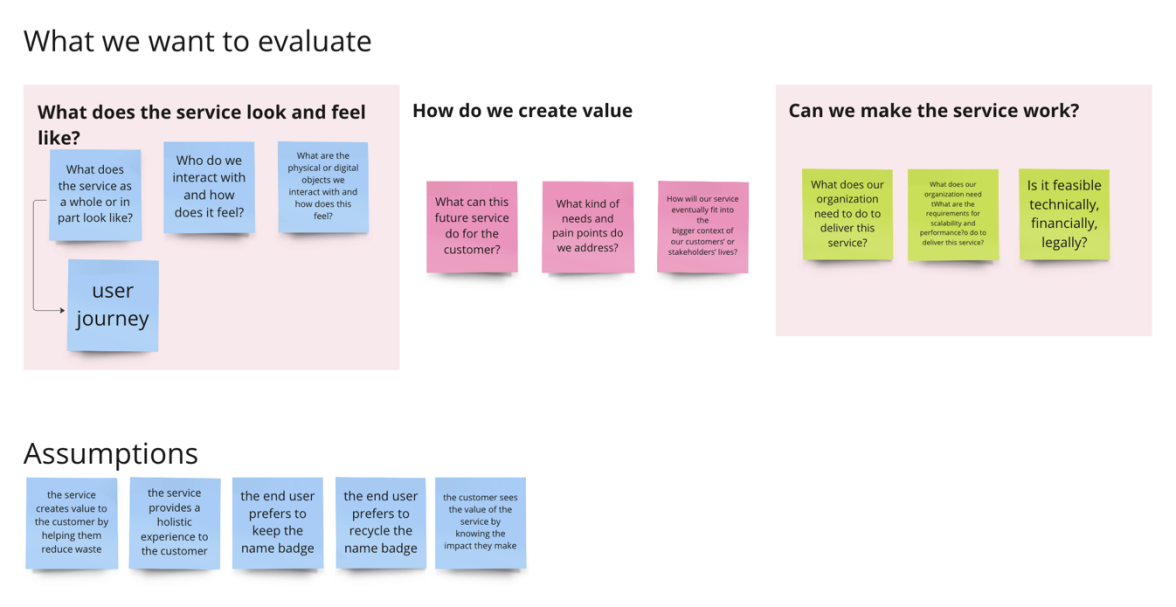

Figure 43: Planning the prototyping - Objectives for evaluation

For the testing phase, we invited two participants to evaluate our service concept, both of whom are employed in large corporations. Next to this, they both have participated in conferences and large corporate events, and have experience organising in-house conferences as volunteers, making them closely aligned with our target customer profile. Their organizations are deeply committed to sustainability, which is a core aspect of our service's value proposition. Due to our limited access to a wider pool of customers and end users, we opted to conduct the testing with these readily available participants from our network. Although they both fit into both our customers and end-user groups, we needed to help them immerse themselves into the roles of our potential users. Therefore, to facilitate a realistic simulation, we provided the participants with detailed scenarios regarding event organisers and attendees (Appendix 9.3.2) derived from the experience map and customer profiles. The testing process was divided into three parts, each designed to evaluate different aspects of our service concept.

The first part focused on assessing the end-user experience from the perspective of the attendees. We utilised *cardboard prototyping* to create a low-fidelity representation of an event exit with the recycle bins, and *service walkthrough* to assess the role of the objects (recycling bins and name badges) in the context of service (Stickdorm et. al., 2018). Through these methods, we aimed to assess whether attendees would be interested in regenerating their name badges either by planting the name badges themselves or sending it to a community and to understand their motivations for doing so (Figure 44).

Figure 44: User testing from the attendee's point of view

The second part of the testing centred on evaluating the desirability from the customer's point of view. In this phase, again, testers were given a scenario to empathize with our customers' challenges, motivations, and needs, using our customer profile and experience map as references. We also presented a storyboard (Figure 45) to provide a comprehensive overview of our service concept. Through this exercise, we aimed to gather feedback on the overall concept and uncover any potential weaknesses.

Figure 45: Presenting the low-fidelity storyboard

The final part involved evaluating the overall service concept through a structured interview guide, which was conducted at the end of the testing session. This interview was structured around both the customer and the end-user perspectives, aiming to evaluate our assumptions through qualitative discussions, supported by our observations. To speed up the data gathering process, we created a board with the questions (pink and yellow post its), and

invited our participants to provide input by using post its (purple) as shown in Figure 46. This also helped us to have structured discussions around the questions while testing our assumptions.

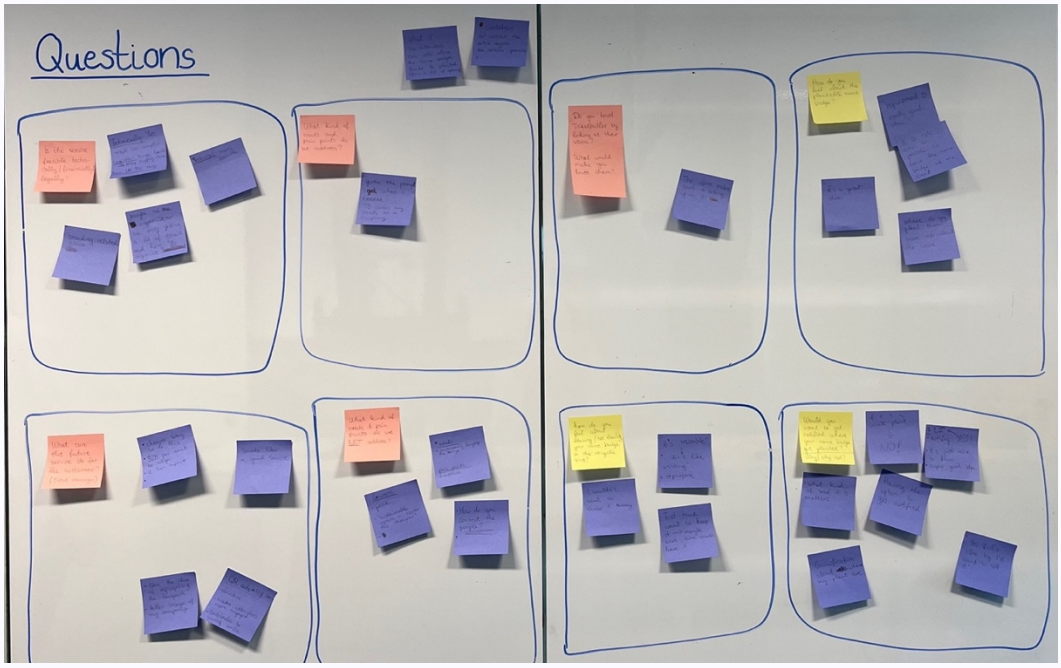

Figure 46: Structuring the interview session

The outcome of the workshop included many valuable feedback and insights. This phase felt particularly rewarding as we could see our service concept take shape through various feedback. In general, the participants expressed a very positive attitude towards the presented concept. Overall, the prototyping session enabled us to test our assumptions from both the customer and attendees' perspective defining the following insights:

1. Motives for regenerating the name badges

We received strong validation for our idea as attendees demonstrated a clear willingness to help reduce waste and recycle when provided with the opportunity (Figure 47). Knowing that an object can be repurposed and create positive impact, the participants felt motivated to leave their badges in the bins. Next to this, we also learned that it is never an option at events to event leave badges at the event for recycling or repurposing, thus one of the participants expressed appreciation for proving an option to not generate waste. However, both participants expressed their need for clear communication of the purpose, storyline and directions.

Figure 47: User quotes from the testing session – Motives for regenerating the name badges

Main takeaway: *Ticketbutler needs to provide some marketing or educational material to the customers prior the event to help inform attendees about the initiative, as attendees would most likely not want to read a lot when leaving an event, and therefore miss out on the opportunity to help "regenerate" the name badges, as the feedback validated the want to do.*

2. Helping our users connect

We also identified through the feedback (Figure 48) the need to provide a medium/digital platform for our users that enables them to connect with each other through the plantable name badges. This would keep attendees engaged and informed about the lifecycle of their contributions, enhancing their connection to the initiative.

Figure 48: User quotes from the testing session – Helping users connect

Main takeaway: Integrate Ticketbutler's website to provide a platform where:

- attendees can sign up to receive updates about where their name badges have been planted.
- communities can share images with event organisers.
- Event organisers can retrieve the pictures from to share it with their networks and event attendees.

3. Improve UX for the event manager

As the participants immersed themselves in the role of our target user groups, we could gain insights into the experiences delivered through the service. We learnt that it has to be taken into consideration that the event organisers organise a lot of events and are busy people as user quotes describe in Figure 49. Thus, the participants reflected that the customers might

not want to spend time choosing a community to send the name badges every time they organise an event.

Figure 49: User quotes from the testing session – Improve UX for the event manager

Main takeaway: *Enable Ticketbutler to choose the local community for the customer.*

4. Community partner coordination

Questions arose about the process for finding community partners for the initiative, specifically regarding the flow for both Ticketbutler and the customers (Figure 50). As we have not detailed this process before, we recognised the need to map the partnership establishment and engagement processes.

Figure 50: User quotes from the testing session – Improve UX for the event manager

Main takeaway: *Map the user journey of communities how they would engage with Ticketbutler and event organisers.*

These insights were going to be considered and implemented to the current service concept in the Deliver phase of the project.

5.3.5 Initial Reflections

During the Develop phase of our project, the testing process provided crucial user-centric insights that enhanced our service. By utilizing scenarios, testers were able to deeply empathize with our target user groups, yielding valuable feedback that was instrumental in refining our service concept. With limited time and resources, we conducted tests with only two participants, which naturally constrained the diversity of feedback received. Ideally, involving customers we had previously interacted with might have offered different perspectives, particularly in understanding more about their future needs through scenario

planning. Despite these limitations, we plan to present our refined service concept to at least one customer of Ticketbutler, and potentially with a local community in Copenhagen.

Our approach was focused primarily on the Discover and Define phases, which limited our exploration of alternative futures and other variants within regenerative design. Notably, we did not fully investigate other potential trend such as the integration of AI or enhancing organizational transparency. Despite this, our optimistic and positive attitude towards future explorations was notable. However, it would have been interesting to consider how the outcome might have differed if we had also explored worst-case scenarios and negative aspects of our design solution. This approach could have prepared us to identify further gaps and strategize around the concept to fully future-proof it.

5.4 Deliver

In the final phase of the Double Diamond, Deliver, the project transitions from concept to tangible deliverables for our stakeholders at Ticketbutler. Referring again to Manyone's framework, the aim is to demonstrate how Ticketbutler achieve its long-term goal through our proposed service concept. In order to do so and to communicate the chosen service that effectively addresses the identified problem or challenge from various perspectives, we employed a range of representation methods. The deliverables were presented and handed over during a final online presentation (See the pitch) with Ticketbutler for internal evaluation. This marked the conclusion of our successful collaboration.

The following representation methods were chosen to communicate the service.

- Storyboard
- User journeys
- Actors Map
- System Map
- Service Blueprint

5.4.1 Storyboard

A storyboard was the first method chosen to represent the new service. A storyboard, as shown in Figure 51, conveys a narrative through a sequence of panels, visually mapping the main events in chronological order (Krause, 2018). The storyboard is used as a visual representation of the final service concept and designed as a sequence of steps, presented in an easy-to-understand manner. It helps communicate the intangible service into a tangible artifact. Additionally, the storyboard is created from a scenario with multiple perspectives, allowing for a comprehensive view of the service from different user experiences.

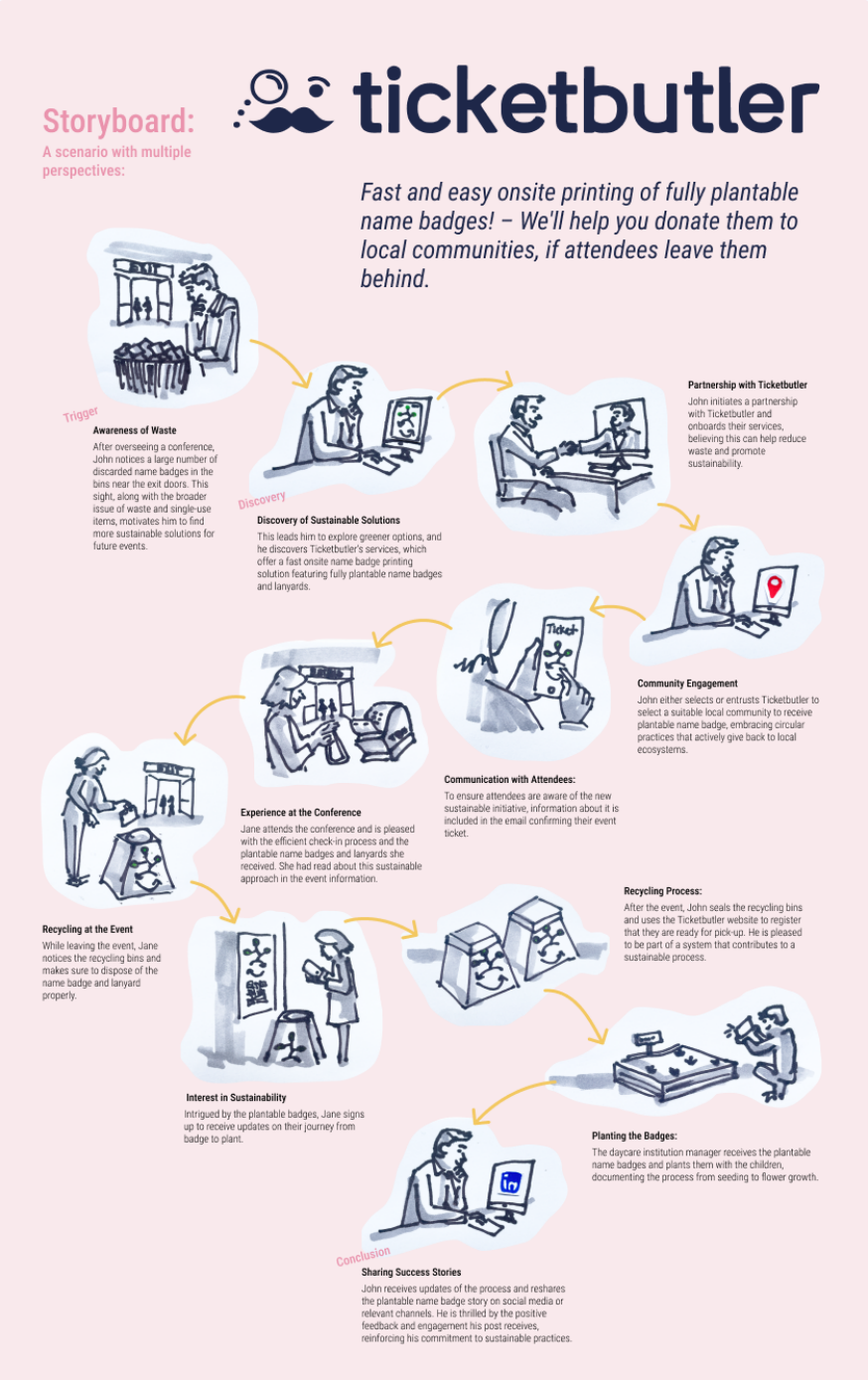

Figure 51: Storyboard of the concept (View in Miro)

5.4.2 User Journeys

User Journeys was the second method chosen to represent the new service. Journey maps (Stickdorn et al., 2018) can visualize both current experiences (current-state user journeys) and anticipated experiences (future-state user journeys). The standard structure of a journey map comprises steps and stages that define the scale of the visualized experience. It can range from a high-level journey map, providing an end-to-end overview, to a detailed journey map, capturing only a few minutes of an interaction.

In this context, the user journey maps represent future-state scenarios, offering a high-level view that illustrates the complete end-to-end experience. As indicated in the storyboard, The service is designed to meet the needs of three distinct user groups, either directly or indirectly. Therefor we felt it was essential to map out all three user journeys to effectively communicate the service and to have a clear perception of each user's journey.

The first user journey (Figure 52) represents Event Managers: these are the direct customers of the service, typically representing a corporate organization or event company. They are responsible for planning and organizing events, making them the paying customers who purchase the service.

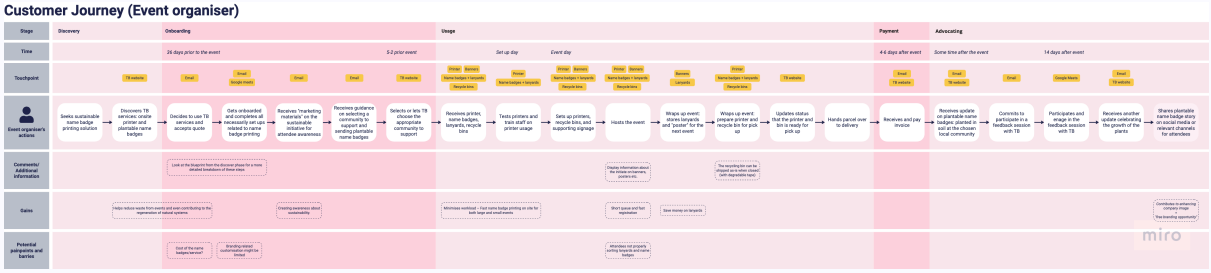

Figure 52: Customer journey of the event organiser (View in Miro)

The second user journey (Figure 53) represents attendees: these are the end-users who attend the events organized by the event managers. They interact with and experience the service product, but also plays a key role in carrying out certain steps, such as dispose the name badge and lanyard properly. The attendee user journey also illustrates two potential scenarios we aim to design for: either disposing of the name badge and lanyard properly before leaving the event or taking the name badge home to plant it themselves.

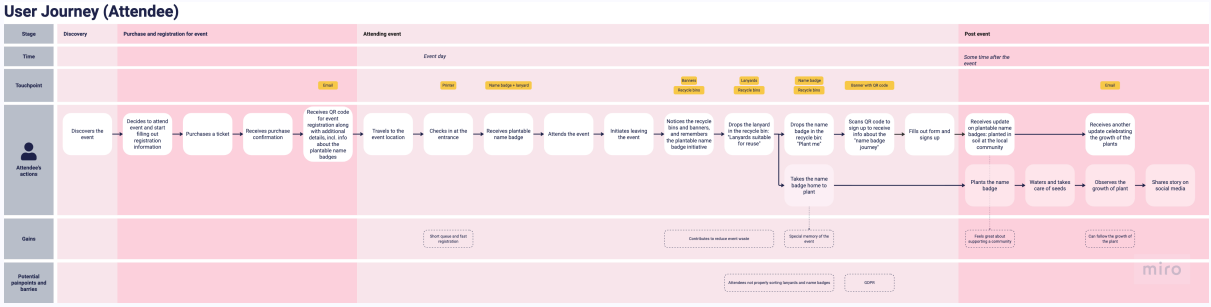

Figure 53: User Journey of attendees (view in Miro)

The third user journey represents local communities (Figure 54): these end-users are responsible for the final steps needed to achieve the sustainable goal of circular practices that give back to local ecosystems.

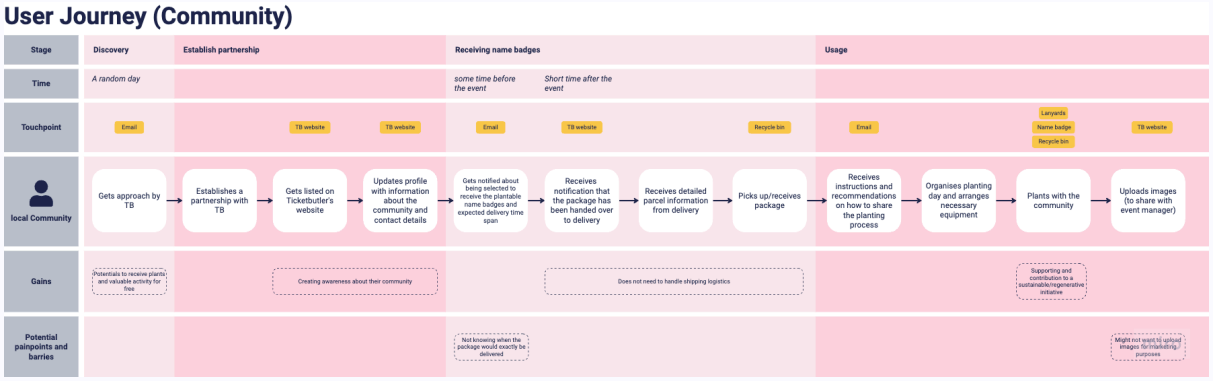

Figure 54: User journey of communities (view in Miro)

For each journey, we have highlighted the potential gains and barriers/pain points. This easily communicates where in the journey the motivations and possible pain points of our target groups lie. These are derived from feedback gathered during the prototyping and testing of the service concept.

5.4.3 Actors Map

An Actors map was the third method chosen to represent the new service (Figure 55). An Actors Map provides a high-level view of the network of actors and components within a system (Morelli and Tollestrup, 2007). The method was selected because it clearly communicates the actors that are essential for the operations of the new service, next to identifying the actors that are necessary to establish partnerships with to deliver a future-ready, resilient, and sustainable service. It does so without going into too many details of how all the service interactions exactly works.

To maintain a user-centric approach, we positioned the customer at the centre of the stakeholder map, highlighting their direct and indirect interactions with the other actors. The actors are grouped into specific categories: Event actors, Ticketbutler actors, and production and system support partners. Additionally, the stakeholder map also serves as the foundation for creating a systems map, which will be presented next.

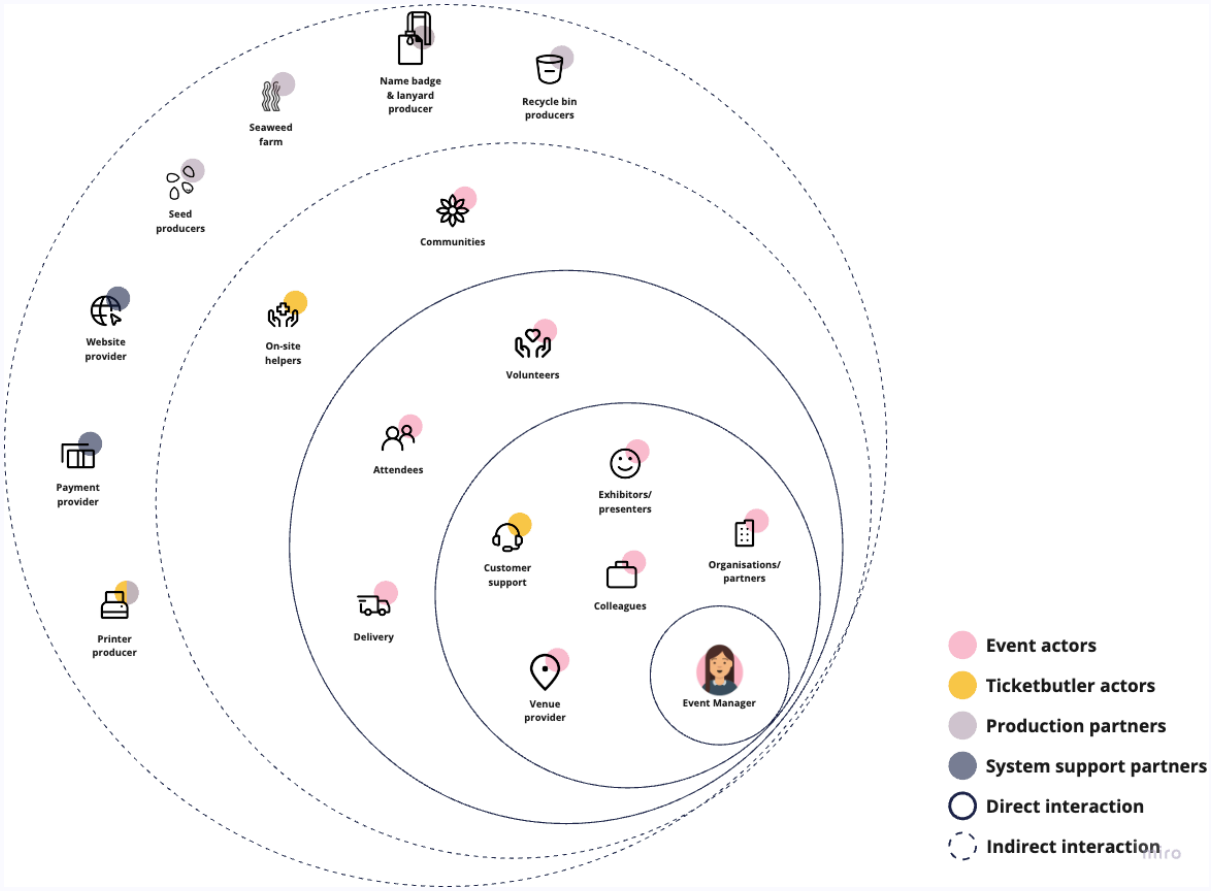

Figure 55: Actors Map (view in Miro)

5.4.4 System Map

A system (Figure 56) was the fourth method chosen to represent the new service. System Maps or System Platforms (Morelli and Tollestrup, 2007) is a comprehensive visual representation that displays all the various actors involved in a service delivery and their interconnected relationships within a single frame The system map clarifies how the different service components and roles are connected, highlighting the values they exchange. The method was chosen as it outlines the flows of materials like information, money, products (printer, name badges lanyards) between actors.

We also included the printer and the QR code in the system map, as they are important service components that help "execute actions" within the service. They play a crucial role in the exchange of value, making them key parts of the system's representation.

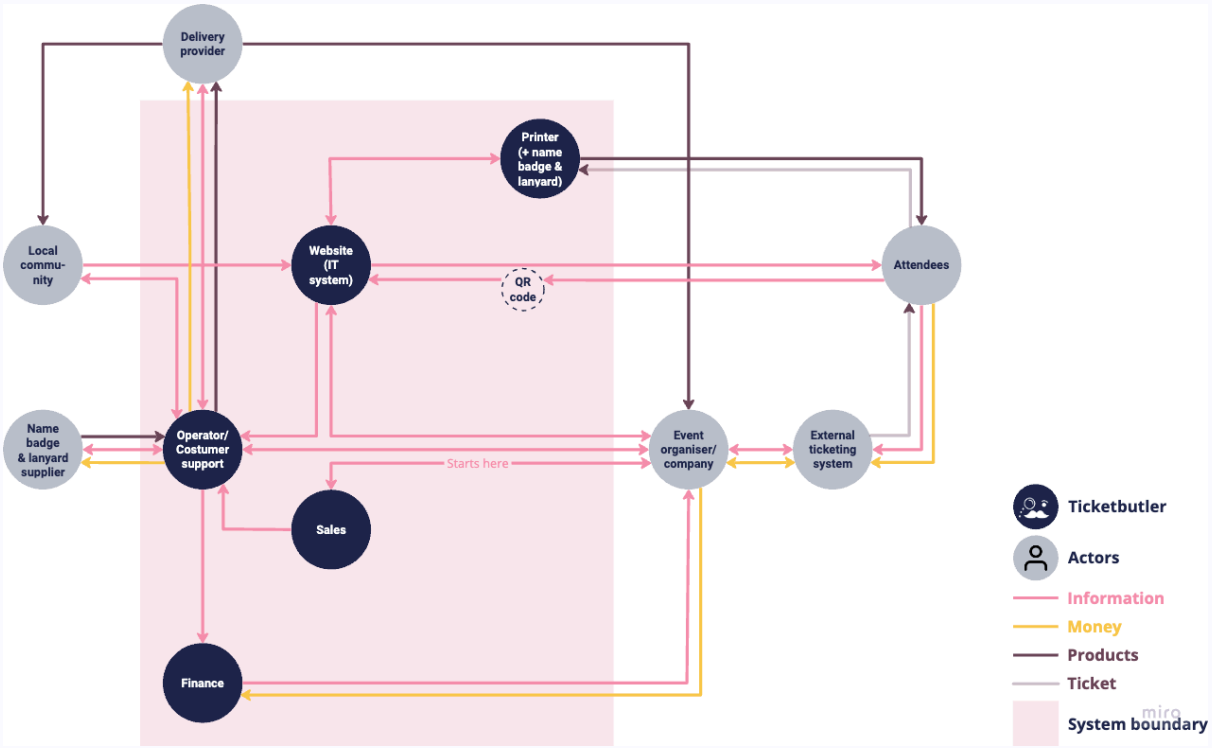

Figure 56: System Map (view in Miro)

5.4.5 Service Blueprint

The service blueprint is the final methos chosen to represent the new service. The Service Blueprint provides a highly detailed view of a service's interactions, covering both the visible front-stage activities and the behind-the-scenes back-stage processes (Shostack, 1982). The method offers a clear visual representation of a service, minimizing misinterpretation and delivers technical details about specific interactions.

The printer itself is not a new service product, and we already created a service blueprint during the Discovery phase of the Double Diamond to map and understand the service Ticketbutler currently provides. Given this, we decided it would be most relevant to create a service blueprint for the post-event phase of the user journey map (Figure 57). This phase is where the integration of the new service is most noticeable and where the greatest complexity lies.

We chose to position both the customer and the end-user journey above the "line of interaction," recognizing that their actions are equally important in this part of the journey. This approach illustrates that we need to prioritize the needs of both users, eliminate siloed thinking, and create a more streamlined connection between their actions.

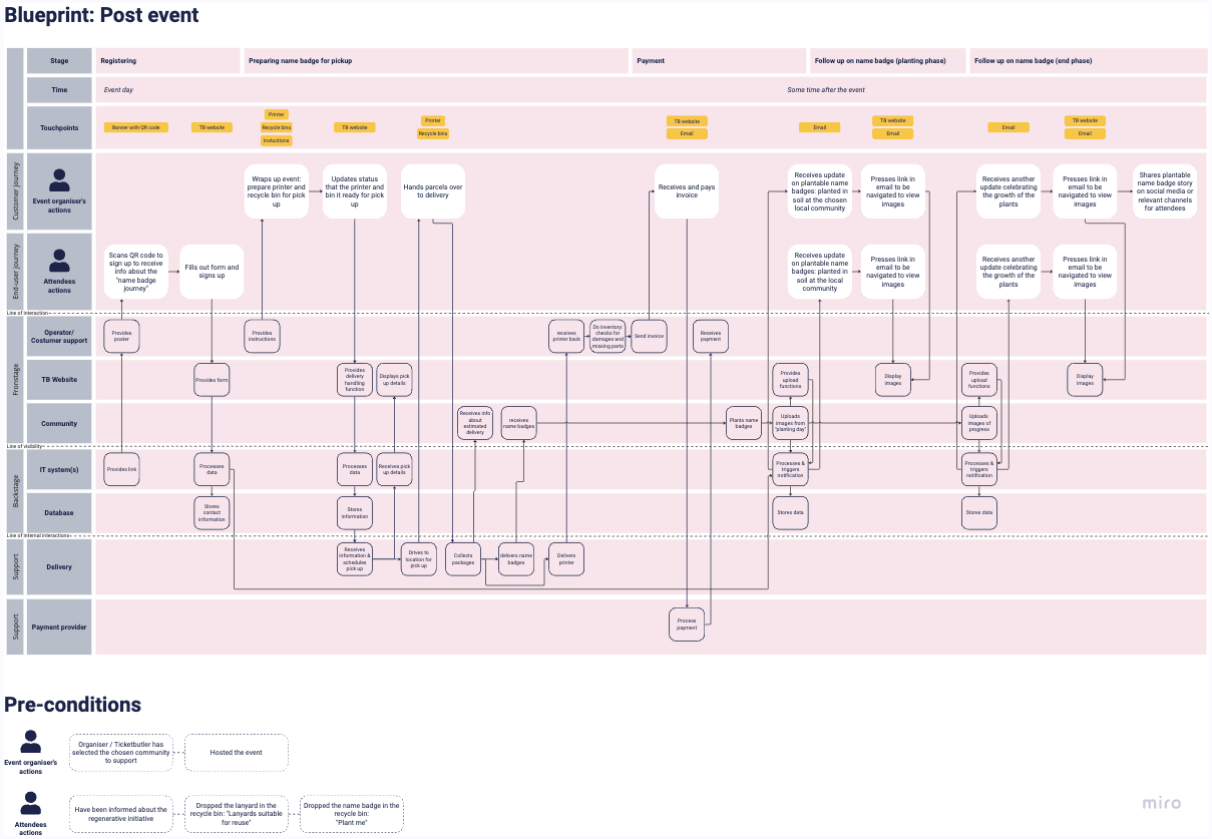

Figure 57: Service Blueprint of the post-event phase for the new service (view in Miro)

5.4.6 Final Concept Presentation

A final concept presentation was delivered to our stakeholders at Ticketbutler, marking the conclusion of our collaboration. The presentation included not only the unveiling of the new service concept, but also key insights derived from the Foresight-driven service design process, as per the CEO's request. Due to this directive, time constraints prevented a thorough examination of all chosen representation methods for deliverables. Consequently, we supplemented the presentation with a Miro board (Figure 58) containing all visual representations with instruction on how to read them, alongside other relevant materials accumulated throughout the process, including Miro boards from workshops and customer profiles. We also provided them with all of the scan cards along with guidelines for utilizing exploratory foresight methods for continuous horizon scanning.

The Ticketbutler team provided positive feedback on the overall process and the new service outcome. They perceived the service as highly ambitious and a target worth striving for in the far future and not something they thought was feasible for them to implement right now. However, it also sparked discussions on what immediate steps they could implement now to still make a significant impact, which was precisely the intended outcome. This included a focus on developing the proposed fully plantable name badges, thereby eliminating the usage of metal clips, etc. This move represents a more sustainable solution and marks the initial step towards a regenerative design approach.

We were very pleased with the positive reception of both the service outcome and the process, as well as the interesting conversations it sparked.

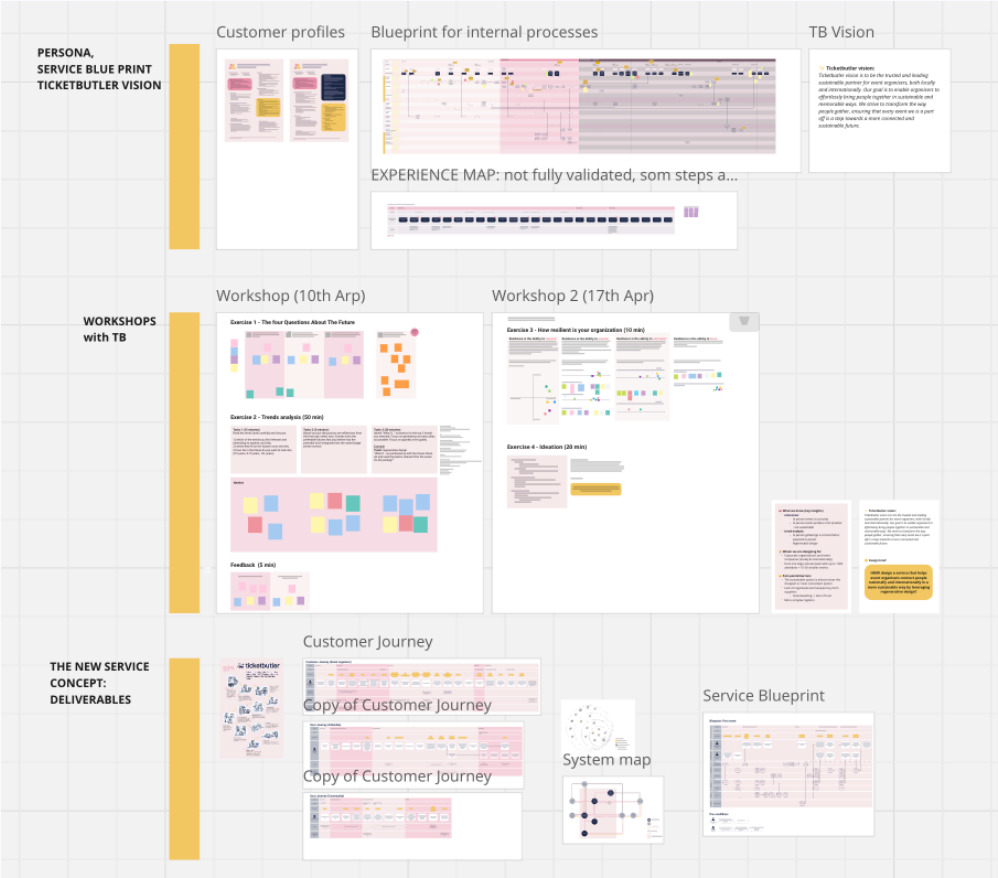

Figure 58: Screenshot of the Miro board provided to Ticketbutler.

6 Discussion

In this chapter, we discuss our previously formulated academic research question:

How can strategic foresight tools support the service design process to cultivate organisational resilience to change?

Based on the key findings of the case study, this chapter presents various reflections on the design process aiming to answer how organisation resilience can be achieved through foresight-driven service design.

The chapter is divided into the following subchapters:

5.1 Reflections on the Design Process

5.2 How Strategic Foresight Driven Service Design Supports Organisational Resilience

5.3 Reflections on the Collaboration

5.4 Reflections on Personal Learning Objectives

5.5 Future Research

6.1 Reflections on the Design Process

In this project, one goal was to uncover how businesses can benefit from utilising foresight-driven service design. Our motivation behind this investigation was regarding our observation of living in a turbulent, uncertain world with constant changes on the horizon defined by rapid technological advancements, economic issues, geopolitical shifts and environmental concerns. Considering having practical experiences on implementing service design processes through various cases in the courses of MSc Service Systems Design and having a strong theoretical foundation of service design and design thinking, this part of the discussion shall encompass the main learnings and critical reflections on how we believe incorporating strategic foresight into service design contributes to a more strategic and long-term oriented process.

Overall, we experienced significant advantages in the integration of strategic foresight tools into service design processes. From this approach, we validated our assumption that combining the two methodologies fosters long-term thinking within the service design process. Reviewing the literature and reflecting back on our introduction, it is clear that this combination enhances our ability to anticipate and strategically navigate future challenges and opportunities by incorporating strategic methods into the design process. We observed substantial support by integrating *horizon scanning* especially into the Discover phase. This method helped us to collect a portfolio of observed trends within the landscape of Ticketbutler, as well as outside their domain. This broader perspective enabled us to identify potential opportunities that could benefit Ticketbutler, particularly in terms of their objectives of scaling and internationalisation. Horizon scanning provided a solid foundation for the rest of the design process and guided our strategic decision-making. For instance, as we mapped the holistic customer experience of event organisation — from planning events to post-event experiences from the customer's perspective — we observed numerous pain points in the planning phase and only a few in the other phases (revisit Figure 27). Without the integration of foresight, we would likely have designed a service to tackle those immediate pain points. However, with a clear vision of Ticketbutler's aim to be a sustainable partner, and by identifying that customers' future goal is to produce zero waste at events and discovering the emerging trend of regenerative design, we were able to make a strategic decision to address a specific pain point in the post-event phase related to waste management.

Reflecting on other foresight tools (see in the *Initial reflection* sections), we acknowledge the potential need for integrating more of them across all phases of the design process, especially in the Deliver phase. As outlined in our methodology overview (Figure 15), various tools such as design scenarios, storyboards, and prototyping were satisfactory in exploring different future scenarios. However, a more extensive application of foresight tools could have provided even deeper insights and stronger strategic directions. However, learning to use these new tools was time-consuming, particularly given our limited project timeframe. Horizon scanning, in particular, required significant time and ideally should be a continuous process that extends over weeks. Therefore, we highly resonate with the arguments of Ojasalo et al. (2015), stating that in order to improve an organisation's ability to identify and capitalize on service innovation opportunities, integrating futures thinking and design thinking into organizational processes should be continuous efforts, not just one-off activities. Despite these challenges, we found that the foresight-driven approach was invaluable. We argue that our approach added a strategic layer to the traditionally user-centric service design, enriching it with a business perspective that considers long-term impacts and sustainability. This not only affirmed our strategic objectives but also demonstrated a clear advantage over using

traditional service design methodologies alone, which in our experience lack the long-term and strategic focus.

We also observed great synergy between strategic foresight (SF) and service design (SD), which made the SF tools easily implementable to the SD process. Considering the intangible nature of services, the discipline equips designers with valuable tools that can visualise hidden aspects of services, making them more tangible and comprehensible. This nature of service design particularly complements designing for intangible futures as well enabling designers and teams to envision and concretise what might lie ahead.

To conclude our investigation, we used a design-driven foresight framework proposed by Manyone (2024) to reflect on whether we have successfully implemented SF into our design process. We selected this framework because of its clarity and ease of understanding. Given that Manyone is an agency dedicated to integrating design-driven strategic foresight into business processes, we were confident in our choice and felt assured about applying the framework effectively. As described in the literature review, the framework consists of 6 steps that ultimately helps answer 3 major questions. We found this framework particularly helpful in guiding our foresight initiatives and as a reference point for evaluating whether we succeeded to implement SF into our SD process. Given that we were able to answer the three questions following the foresight-driven service design process, we assess that we have successfully integrated strategic foresight into a SD process.

6.2 How Strategic Foresight-Driven Service Design Supports Organisational Resilience

Having established the successful integration of strategic foresight into our service design process, naming it strategic foresight-driven service design (SF-driven SD), and reflected on its benefits, we turn to another objective of this thesis project: establishing a theoretical foundation for researching the attainment of organizational resilience through SF-driven SD. To evaluate our research question, the Research through Design (RtD) methodology was used through the integration of strategic foresight and service design. Therefore, in this section, we argue through a reflective approach leveraging our expertise in Service Design.

6.2.1 Reflections on Organisational Resilience

Through the literature review, we uncovered the complex nature of resilience, particularly in organizational contexts. This complexity stems from the multidisciplinary background of resilience, as in different domains the main characteristics and aspects of resilience shift based on the context in which resilience has to be met. For instance, while individual resilience is characterised as an individual's ability to overcome psychological challenges and demonstrate cognitive growth even in difficult situations; ecological resilience emphasizes flexibility, the capacity to absorb shocks, and the maintenance of functionality in the face of change.

Another key observation concluded from this study is that organisational resilience traditionally has been associated with rapid change and crisis as some of our collected definitions show in Figure 59. However, in recent research, there has been a shift in the definition of resilience expanding to the anticipation of change and adversity aiming to

eliminate rapid shocks by predicting future threats and opportunities which is highly applicable in an organisation's strategic development and thus, their organisational resilience.

Author(s)	Definition
Chrisman et al., 2011	"the ability of organizations to absorb, respond to, and recover from situations that could threaten their existence", p. 1107
Gao et al., 2017	"beliefs about a firm's ability to withstand shocks", p. 2148
Kahn et al., 2013	"the collective capacity to absorb strain, withstand setbacks, and recover from untoward events", p. 393
Lengnick-Hall et al., 2011	"a firm's ability to effectively absorb, develop situation-specific responses to, and ultimately engage in transformative activities to capitalize on disruptive surprises that potentially threaten organization survival.", p. 244
Park et al., 2015	"the ability of systems to recover quickly from negative experiences of management crisis, adversity, or disaster", p. 321
Rao & Greve, 2018	"the capability of a community to withstand and recover from a disaster", p. 5
van der Vegt et al., 2015	"the ability of systems to absorb and recover from shocks, while transforming their structures and means for functioning", p. 972

Figure 59: Overview of definitions of organisational resilience in response to rapid shocks

In this case study, we observed a strong connection to the latter aspect of organizational resilience, particularly from the potential of service design to adopt long-term strategic aspects. Therefore, our chosen definition for organisational resilience to guide us through the project was the following:

Organisational resilience is "the ability of an organization to anticipate, respond to, recover from, and learn from adversity" (Hepfer and Lawrence, 2022, p. 8).

Therefore, we refer to the definition above when discussing how SF-driven SD process can help achieve organisational resilience.

In the following sections, we will assess our research questions from two perspectives. Firstly, the Resilience Analysis Grid (RAG) model will be used to answer how organisational resilience in general can be met through the application of the SF-driven SD process. Secondly, as mentioned in the literature review (section 2.3.2), organisational resilience can be distinguished into three categories. Therefore, we will also reflect on which of these three types of organisational resilience we achieve through the SF-driven SD process. Arguments will present critical reflections from both the authors of this thesis and the team at Ticketbutler.

6.2.2 Answering the Research Question

6.2.2.1 Context of Research (Limitations)

Before delving into answering the research question, we acknowledge that our research is based on a single organization within a specific industry and should be regarded as such. This introduces limitations in terms of evaluating our research question. Consequently, it is important to consider that our arguments and findings are effective within the context of our investigation through the case study of Ticketbutler. Therefore, our research cannot be assumed to be universally applicable across different fields or case studies. Outcomes in other industries or organizations (especially in large corporations) may vary significantly.

6.2.2.2 Reflections on Whether We Achieve Organisational Resilience through the RAG model

During this case study, the RAG model was employed as an assessment tool for enhancing organizational resilience. We aim to reflect on how our SF-driven SD process aligns with the abilities described by the RAG model to assess organizational resilience. This reflection focuses on evaluating each of the four abilities that together define resilience to examine whether and how the SF-driven SD process meets the criteria set by the RAG model, identifying areas where it succeeds and where it falls short.

1. Answering the Ability to Respond

The ability to respond in the context of RAG is described as the necessity for an organization to react to both threats and opportunities in a timely and effective manner to achieve desired outcomes before it is too late. To do this, an organization must detect significant events, recognize their importance, decide on the appropriate response, and have the resources to implement it.

Through the practical application of SF-driven SD process, we conclude that designers or companies can equip themselves with the knowledge, skills, and competencies to address relevant challenges or threats. While foresight tools provide a strategic and robust perspective; creative, user-centred service design tools enable teams to design services that directly respond to change. Therefore, we argue that the ability to respond to change is enhanced through the creation of services specifically designed to address and resolve issues arising from change. Through the combination of human-centred design and strategic future-oriented tools, the foresight-driven approach enables organizations to anticipate potential disruptions and opportunities, thereby crafting proactive solutions that are tailored to future scenarios.

In this context, we argue that the *service concept* or *solution* itself acts as a direct response to specific changes or adversities. However, it is important to note that while these responses are designed to be effective, there is no absolute guarantee of their success. The complexity of changing customer needs and behaviours, emerging trends, and other dynamic factors can significantly influence the efficacy of any response. These elements can alter the system in unforeseen ways, making it challenging to predict the exact outcomes of a given response especially when designing for the far future. Therefore, continuous monitoring, adaptation, and flexibility are essential components of a resilient response strategy. Organizations must remain vigilant and agile, ready to adjust their strategies as new information and conditions

emerge. This dynamic approach ensures that responses remain relevant and effective in the face of evolving challenges and opportunities.

2. Answering the Ability to Anticipating

A resilient organization must be able to anticipate future developments beyond current operations. It needs to consider possible future events, conditions, or state changes that could affect its ability to function, such as technological innovation, changes in customer needs, and new legislation. This capability is known as the ability to address the potential.

In this thesis's case-study, the ability to anticipate threats and opportunities was achieve on the highest scale when analysing our SF-driven SD process according to the RAG model. We previously argued that horizon scanning (HS) had the biggest impact on our design process presenting a wide range of potential threats and opportunities that Ticketbutler must be aware of. With this structured and nuanced method, organisations can gain a thorough overview of what might change in their landscape. Through the application of HS, an organisation can equip itself with the knowledge of what trends are effective in its company's domain on a macro-level and reflect on which trends are most likely to affect its business. On one hand, HS as a strategic foresight tool, is essential for identifying emerging trends and potential disruptions. On the other hand, user research, a key component of service design, is crucial for adapting to and meeting changing customer demands. We found the empathetic approach and mindset essential to gaining insight into the business landscape and targeting customer pain points, complementing the strategic abilities of SF. This user-centric approach not only ensures that services remain relevant but also enhances the organization's ability to respond flexibly to changes and disruptions by understand their user/customer base.

Next to this, we define collaboration as another aspect that enhances the ability to anticipate, and thus organizational resilience. Engaging a series of stakeholders within and outside the organization fosters a shared vision, involvement, and ownership of processes, democratizing decision-making. By breaking down internal silos, this comprehensive engagement helps to surface and address potential blind spots in the organization's approach and strategy, leading to solutions that are more adaptive and responsive to external changes and internal needs.

Overall, we argue that based on the points mentioned above, through the integration of regular horizon scanning, user research, and collaborative decision-making, organizations can enhance their ability to anticipate future developments.

3. Answering the Ability to Monitor

Monitoring refers to an organization's flexible ability to track its own performance and environmental developments, addressing potential threats and opportunities before they materialize. In other words, it can be understood as the ability to know what to look out for as a company. This requires using valid leading indicators to predict upcoming events. Based on these indicators, we assessed *monitoring* as an activity to acknowledge upcoming events happening in the *near* future.

Although assessing near future events is essential for an organisation's effective operations, in this project we mainly focused on anticipating long-term changes as described in the previous section. Considering our arguments for focusing on long-term goals and adversity, we cannot confirm whether our applied approach meets this ability. It can be argued that

service design on its own can equip an organisation to effectively assess short-term change and track performance through a human-centred approach by assessing customer/user pain points and needs relevant to a provided service, though when expanding to the combination of strategic foresight and service design, the perspective rather shifts to anticipating what is likely to happen further in a company's timeline. Therefore, when the objective of a business is to create long-term strategies and achieve long-term goals through SF-driven SD, immediate monitoring might not be the primary priority.

4. Answering the Ability to Learn

Lastly, the RAG model suggests that a resilient organization must be able to learn from experience, understanding past events and deriving the right lessons. We can assess this ability from two perspectives: learning from adversity and learning from an integrative process.

When evaluating the ability to learn from adversity, our conclusions mirror those made regarding the ability to monitor. Since this project did not encounter any significant adversity, we cannot confirm if the SF-driven SD process fully support this ability. However, it can be argued that by implementing design thinking into an organization's processes, the organization can achieve learning through an iterative design process. This iterative approach promotes continuous learning and improvement by incorporating feedback and refining solutions over time.

In summary, while we cannot definitively confirm the ability to learn from adversity through our current project, the combination of design thinking and strategic foresight provides a robust framework for iterative learning and adaptation, which are essential components of organizational resilience.

6.2.2.3 Reflections on Whether We Achieve Organisational Resilience through Ticketbutler Eyes

Due to Ticketbutler's significant engagement and co-creation throughout the design process, we argue that they are well-positioned to contribute fully to the reflection on whether the process and outcome of the strategic foresight-driven service design have facilitated the achievement of organizational resilience. For the final concept presentation, our objective was to initiate a reflective session with Ticketbutler. This session included a presentation that provided an overview of the SF-driven SD process and described our learnings (see the Pitch), followed by an interview with the team. Unfortunately, only three employees attended the discussion on organizational resilience, which limits the depth of our final reflections.

As a starting point for the discussion, we referred to the results of the Resilience Analysis Grid, where we had evaluated Ticketbutler's current resilience. As previously noted in our initial reflection, Ticketbutler assessed itself to have a largely positive resilience profile, scoring high on all parameters. However, we challenged them with an additional question: How much effort does Ticketbutler put into considering what may happen in the far future, specifically 5-10 years from now? This aspect, which we felt the Resilience Analysis Grid was missing, revealed that they did not score more than neutral on the scale. This implies that they do not possess the ability to anticipate future events or have strategic concerns for the far future. A supporting argument is found in the CEO's statement: "As a scale-up company, we primarily

focus on concerns related to growth for the current and next years, with limited consideration for events beyond a few years into the future."

The discussion then naturally progressed with reflections on the service design and strategic foresight methods utilized during the project. Despite Ticketbutler not having facilitated a design process before and thus lacking previous experiences to compare with, they could clearly see and confirmed the benefits – referring to benefits described in section 6.2.3 – of combining strategic foresight and service design methods.

When defining resilience as an organization's ability to anticipate, respond to, recover from, and learn from adversity, it was argued that SF-driven SD enhances Ticketbutler's ability to anticipate and respond to adversity or changes in the far future, enabling them to actively make strategic decisions to support their long-term goals. However, it is acknowledged that we can only assume that this will also enable and enhance the ability to recover and learn from adversity, as this needs to be proven after implementing the new service and experiencing actual adversity.

One downside the team has noted during the discussion was that they believe that the process of SF-driven SD is too long and requires a lot of resources, which Ticketbutler at its current state does not have. Even though the team expressed positive remarks towards the proposed process, this raises questions as to how this process could be simplified to be adaptable for smaller teams.

Nevertheless, through this reflective approach, it was concluded that Ticketbutler evaluated that the SF-driven SD process has the potential to foster organizational resilience through an ongoing implementation of the proposed process.

6.2.2.4 Reflections on Whether We Achieve All Three Distinctions of Organizational Resilience

Through the analysis of the RAG model and discussions with the team at Ticketbutler, we have argued for why SF-driven SD enables the company to obtain the abilities to respond to and anticipate change, thus cultivating organizational resilience. However, as mentioned, we find it relevant to also reflect on the distinction between the three types of organizational resilience and whether we have achieved all three types.

We recognise that strategic resilience and strategic foresight shares several direct synergies, such as their emphasis on anticipating changes that could impact organizational strategy and long-term goals. However, they differ in focus: while strategic foresight anticipates and responds to future changes in general, strategic resilience specifically addresses the ability to anticipate and respond to adverse or challenging changes, commonly referred to as adversity. Both concepts also intersect with organizational strategy, which involves setting long-term goals and objectives, as well as crafting action plans and allocating resources to accomplish them (Chandler, 1962).

This can also be proven through the analysis of the RAG described previously. Analysing each ability through the lens of the SF-driven SD process, we concluded that we mainly achieve the ability to anticipate and respond through our proposed design process. This highly resonates to the definition for strategic resilience proposed by Hepfer and Lawrence (2022), claiming that strategic resilience is an organization's ability to anticipate and respond to threats to its strategy and long-term goals.

Therefore, we can clearly argue that our SF-driven SD process has achieved or enhanced Ticketbutler's *strategic resilience*, which constitutes the third element of organizational resilience.

Since the two other elements of organizational resilience, functional and operational resilience, are directly tied to the source of adversity and Ticketbutler did not experience any significant adversities during the project facilitation, we cannot confirm in asserting that we have achieved or influenced these two aspects. Without experiencing notable challenges, it is difficult to gauge the impact of our SF-driven SD process on functional and operational resilience. Therefore, we found no direct evidence to suggest that our process influences functional and operational resilience in the absence of adversity.

However, it is worth questioning whether selecting another identified trend, such as 'Being resource resilient,' would have led to enhanced functional or operational resilience. Being resource resilient entails diversifying the procurement process, a critical step in mitigating risks associated with sole-sourcing. By sourcing from a variety of suppliers, businesses can diminish vulnerabilities like supply interruptions, price volatility, and weakened negotiation positions, thus bolstering the resilience of their supply chains. Our assumption is that addressing this aspect of an organisation, we would have reached operational resilience.

6.3 Proposed Framework

Based on our research and evaluation of the design process, we propose the following SF-driven SD process to incorporate long-term thinking and achieve strategic resilience through service design.

Through the proposed framework, we suggest implementing the following steps into the design thinking methodology to complement the traditional service design process. In our case, we depict our suggestions through the Double Diamond model. In Figure 60, we provide an overview of the design process. It is important to note that the framework is merely a suggestion, and the designer shall maintain ownership of the methods chosen to answer the problem specific to their design case.

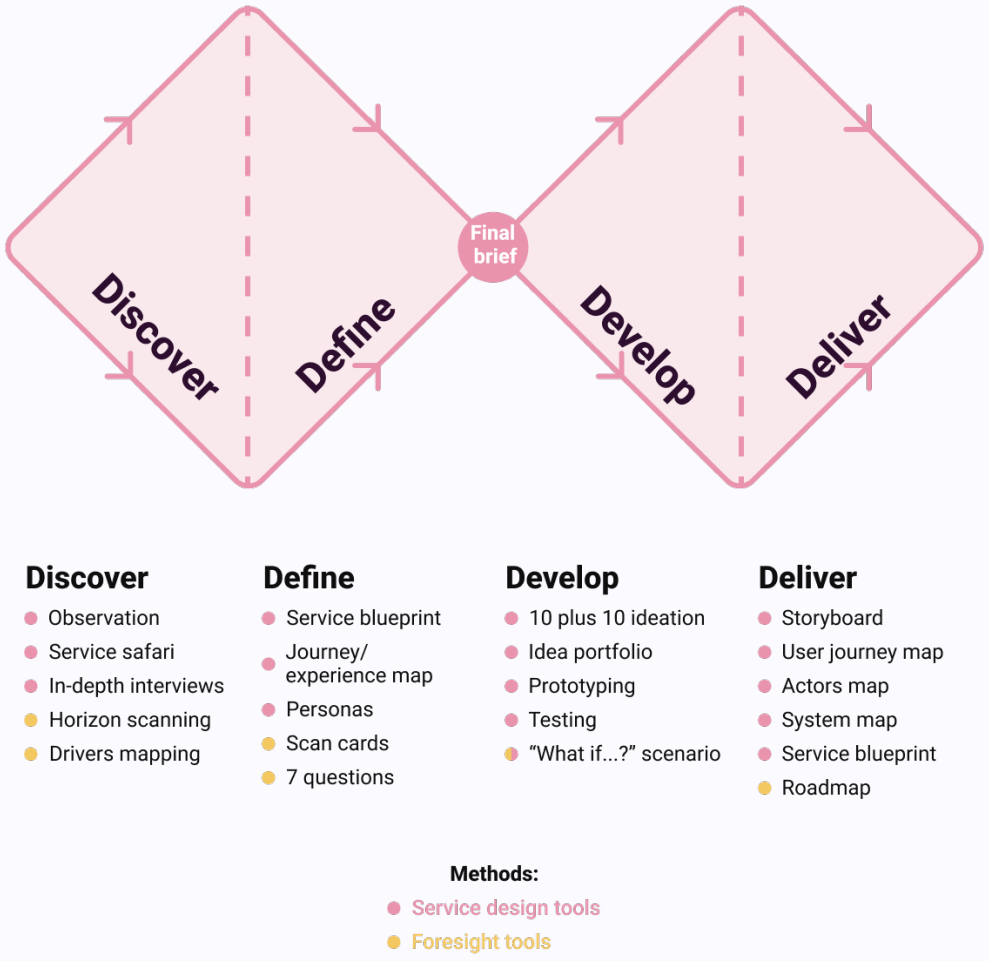

Figure 60: The overview of SD and SF tools used in design thinking

6.3.1 First Diamond

In the first diamond, the aim is to investigate and define answers for three domains: business vision, future needs of customers and trend analysis (Figure 61). Through the analysis of these three perspectives, the designer shall find common patterns that encompass the

strategic direction for the exploration of potential service solutions that address the future needs of both the business and customers/users to achieve strategic resilience.

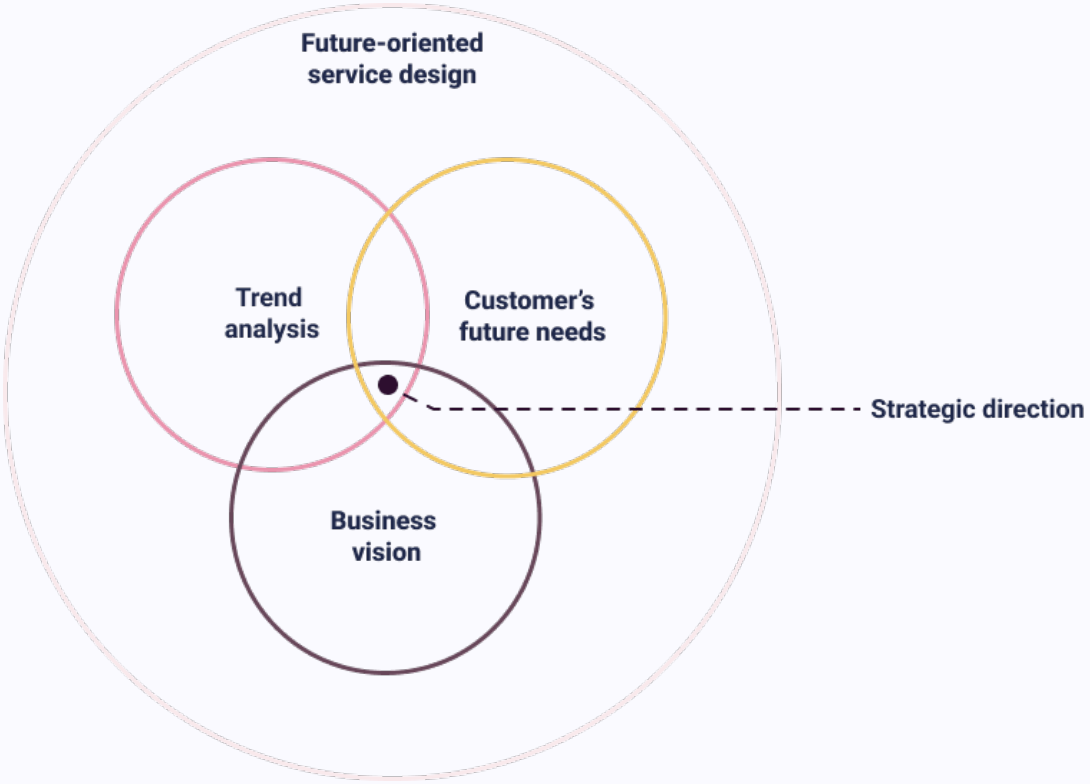

Figure 61: Three essential domains of discovery

6.3.1.1 Exploring Emerging Trends

In our research, horizon scanning emerged as the most crucial strategic foresight tool to integrate into the design thinking process. Designers should compile a collection of relevant trends and signals for the business to explore, using scan cards to present this information in an easily digestible format. These scan cards make the data more approachable, facilitating discussions within the design team and across the company. Ultimately, they should serve as communication tools with stakeholders, helping to select potential directions for strategic decision-making.

Since horizon scanning is a time-consuming practice, we recommend a continuous investigation of emerging trends.

6.3.1.2 Identifying Customers' Future Needs

This step encompasses the empathetic service design processes necessary to develop user-centric solutions. Beyond using traditional service design methods, such as observations, in-depth interviews, user journey maps, etc; it is essential to explore what the future needs of customers/user could be. Here we suggest taking an iterative approach engaging with customers/users through multiple rounds of interviews/focus groups initially focusing on exploring current pain points, needs and motivations, then diverging to investigating future needs. For the latter, we suggest that the designer utilises learning from the trend analysis

defining patterns of what customers leaning towards and exploring which trends could support meeting their needs. To gain more in-depth knowledge about future needs, we suggest utilising scenario building to help customers/users better envision what their future needs might be.

6.3.1.3 Defining the Business Vision

We recommend defining the vision of the business through our alteration of the "7 question" method. In our experience, for this exercise, it is beneficial for the designer to engage a wide range of employees along with leadership from the company in a collaborative workshop. Engaging a wide range of stakeholders helps opening up to diverse perspectives promoting transparency and open communication along with nuanced insights for defining a common goal.

Our method consists of 4 questions in which the first three questions are answered individually helping stakeholder envision optimistic and pessimistic futures of their organisation based on their observations of current trends and past experiences. Ultimately, this can help them contextualise what critical choices the business they are operating in needs to prepare to take in the future to stay relevant and competitive on the market. Finally, through discussions of these three questions, the stakeholders can collectively define (or refine) the company's vision (Figure 62).

Figure 62: 4 question method to define a company's long-term vision

6.3.1.4 Define Problem Statement

To define the problem statement, the following steps should be met:

1. Know the future customer/user pains, needs and motivations.
2. Choose a relevant trend (preferably with the stakeholders from the organisation) considering how that trend can help the organisation reach their vision and how it meets the future needs of the customer/users.
3. Define a user-centric design brief addressing point 1 and 2.

6.3.2 Second Diamond

6.3.2.1 Developing Service Solutions

In the ideation phase using design scenarios is beneficial as it allows both users and designers to immerse themselves in future scenarios, fostering an empathetic approach to developing design solutions. This method helps in understanding the users' needs and experiences more deeply and enables the designer to test assumptions. For a more immersive concept evaluation, video prototyping can be employed. However, this approach

can be time-consuming, particularly if the designer is not well-versed in video sketching techniques. Alternatively, storyboards, cardboard prototypes, and service walkthroughs can effectively replicate and evaluate future service concepts.

6.3.2.2 Delivering the Service Solution

We argue that the use of visual tools plays a pivotal role in promoting resilience. In the last phase, the designer shall deliver the service solution utilising service design materials that can effectively communicate the complexities of the service system and depict its intangible elements, thereby helping organizations to grasp and take ownership of processes. This fosters the integration of systemic thinking, which is essential for dealing with complex challenges and shifting traditional mental models in operations. Considering that the output of the SF-driven SD process is a service concept designed to address long-term changes, utilizing roadmaps is highly recommended. Roadmaps can break down the strategic steps needed to achieve this future-oriented service solution, providing a clear, actionable plan that guides the organization through each phase of implementation.

6.4 Reflection on the Collaboration

Throughout our project, the involvement and active engagement of our thesis partner, Ticketbutler significantly enhanced the quality and impact of our work. They made substantial contributions to our research by granting continuous access to clients and other essential resources. One of the project's highlights was the collaborative workshops with their team, which not only enriched our learning experience but also bridged the gap between a theoretical school project and a practical, real-world initiative. This professional approach increased our responsibilities and the accessibility of relevant information, ultimately making our project feel much more aligned with professional standards and real-life applications.

On the other hand, we also encountered some limitations in our collaboration. A significant challenge was the limited access to engage more deeply with employees to address our research question. We aspired to conduct more thorough discussions through collaborative workshops and focus groups. However, it was difficult for team members to estimate their availability due to their workload. Consequently, even though we planned these collaborative sessions in advance, the actual attendance was unpredictable. While this issue was beyond our control, it highlighted the need for more flexible scheduling and perhaps additional methods of engagement to ensure broader participation. Despite these challenges, the sessions we conducted provided valuable insights. The limited but meaningful interactions helped us understand some key aspects of organizational resilience, though from a smaller sample of perspectives. Moving forward, we recommend exploring alternative engagement strategies, such as asynchronous feedback tools, to accommodate varying schedules and ensure more comprehensive participation.

6.5 Reflections on Personal Learning Objectives

Take ownership of service design tools and methods to master and alter methods based on our project scope.
We aimed to take ownership of service design tools and methods, intending to not only master them but also adapt and refine them according to the specific requirements and scope of our project. This goal pushed us to delve deeper into the nuances of various service design techniques, enhancing our ability to tailor them to our project's needs effectively.

Obtain knowledge, skills, and competences to effectively bring the disciplines of strategic foresight and service design together.
We sought to acquire a comprehensive understanding of how to integrate the disciplines of strategic foresight and service design seamlessly. This objective led us to explore the intersections between these two fields, identifying synergies and developing strategies to leverage their combined strengths. Through this exploration, we aimed to obtain the knowledge, skills, and competencies necessary to effectively merge these disciplines, ultimately resulting in a proposed framework for SF-driven SD.

Collaborate with an external company in a co-creative environment.
Collaborating with an external company in a co-creative environment was a key learning objective for us. This experience provided us with valuable insights into real-world challenges and dynamics, allowing us to develop our collaboration and communication skills while navigating complex project dynamics.

7 Conclusion

This chapter provides a conclusion on the case study and the key learnings acquired through the project. It also provides an overview of the limitations faced and suggests potential future research for this project.

In this thesis project, various strategic foresight methods were implemented into the traditional service design process to explore how this integration could help businesses achieve organisational resilience. This study was executed in collaboration with Ticketbutler, a scale event management business in Copenhagen. For this case, the Double Diamond was utilised to structure the design process, which included the Discover phase aiming to explore a direction for the project from a user-centric and strategic angle. In the Define phase, the problem statement is presented that was defined through the main insights gathered from the Discover phase. Next, as part of the Develop phase, a service concept was developed through iterations of ideation and prototyping sessions. Lastly, in the Deliver phase, a series of materials were presented explaining the system and architecture of the final service concept.

Throughout the design thinking process, primarily in the first three quadrants of the Double Diamond, various strategic foresight methods were applied and evaluated to explore their impact on the design process, and thus help evaluate whether the integration of these tools could adopt organisational resilience. To analyse the outcome of this integrated approach, the Resilience Analysis Grid (RAG) and a reflective approach with the application of Research through Design methodology was employed. Based on this analysis, the following findings were concluded:

One of the primary learnings was that integrating strategic foresight tools into service design processes offers significant advantages, notably by promoting long-term thinking. This integration enhances an organisation's ability to anticipate and navigate future challenges and opportunities, as validated by our application of horizon scanning.

Secondly, based on the reflective approach and the assessment of the foresight-driven service design process following the RAG model, we concluded that organisations could increase their abilities to anticipate and respond to long-term adversity, therefore enabling them to foster *strategic resilience* – one of the distinct categories of organisational resilience.

Lastly, another significant learning from the foresight-driven service design process is that the service concept outcome itself does not directly foster a business's resilience. Instead, it is the continuous effort of repeating a foresight-driven service design process that ultimately leads to strategic resilience.

Ultimately, this thesis proposes a framework for a strategic foresight-driven service design process. This framework aims to integrate long-term thinking into service design, enabling organizations to anticipate changes and transform them into business opportunities. However, it is crucial to note that even though we got very positive feedback on a framework from our collaborative partner, they did highlight that the framework is assessed to be resource-dependent, thus limiting its application in small businesses.

Through the research process, some limitations were also observed. Firstly, the research is based on a single case study within a specific industry which may limit the generalizability of the presented findings. The results may not be immediately relevant to other organisations, especially those in different sectors or of different sizes, due to the particular setting of Ticketbutler—a scale-up firm with specific strategic goals and resource restrictions. Additionally, the limited timeframe of the project restricted the authors' ability to implement and observe the long-term impacts of the strategic foresight-driven service design process. The involvement of only three employees in the final reflective session further limited the depth and credibility of our insights.

7.1 Future considerations

To validate our initial positive conclusions regarding the SF-driven SD process, it is essential to conduct case studies across various industries. This will provide a broader perspective and strengthen the evidence supporting the effectiveness of our approach. Additionally, exploring the use of other foresight tools in the design thinking process, particularly during the "Deliver" phase of the Double Diamond model, can uncover further benefits and enhance the robustness of SF-driven SD.

Given the complexity and vast scope of resilience, measuring it effectively is challenging. We recommend further research to explore additional methods for evaluating and measuring organizational resilience, ensuring a comprehensive understanding of its dynamics. Alternatively, developing a method to assess the capabilities required within each of the three facets of organizational resilience — Functional, Operational, and Strategic — could provide more actionable insights and practical applications for organizations aiming to enhance their resilience.

Additionally, we recommend further research to explore ways to make the SF-driven SD process less resource-dependent. This would make the methodology accessible for start-ups and scale-up companies with limited resources, enabling them to utilize it independently.

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9 Appendix

This chapter provides the following appendices:

9.1 Interviews

9.2 Observation

9.3 Prototyping and Testing

9.1 Interviews

9.1.1 Interview guide for sales

Who are your customers?

How much do you know about your customers?

How do you segment your customers? Who is the biggest, most important, etc.

How do you assess and develop the customer experience as of now?

To your knowledge, what are the biggest customer pain points?

Do you have any data we can get access to? e.g feedback survey...

Is there any additional information about the customers can you provide?

Is there anything that you currently

know but would love to know about?

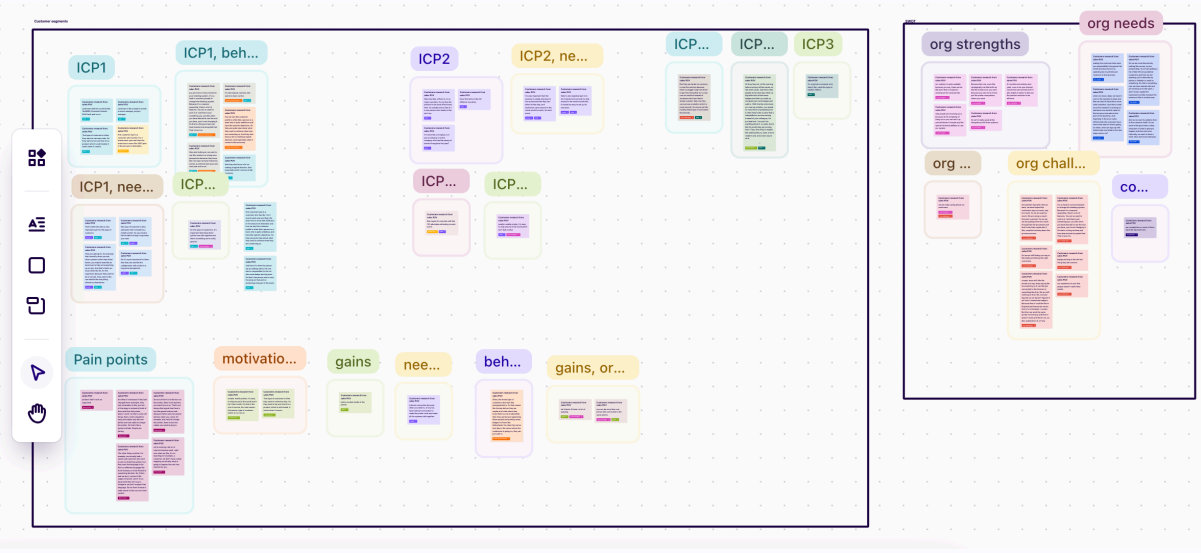
Would there be a possibility for us to have an interview with your customers?

Can we join a post-event feedback meeting with a customer?

Can you give us a walkthrough of the sales teams process?

From your point of view where do you have the biggest pain points in the process?

9.1.2 Clustering findings from interview with sales



9.1.3 Interview guide for customers

Intro

Thank you for finding the time to talk to us today. We are Rikke and Kinga, two candidate students of service systems design and currently working on our masters thesis in collaboration with Ticketbutler.

The reason why we wanted to have a talk with you today is to understand more about your needs, motivations for using TB services, but also to understand your experiences of your partnership with TB. So, we have prepared a few questions that we'd like to get your input on.

Do you have any questions to us so far?

Before we begin, we'd also like to ask if it is okay with you if we record this session, so it is easier for us to revisit what we will talk about today.

--- Event management experience

Could you just briefly introduce us to your role and the company you're representing?

How much experience do you have with event organisation?

How many events are you hosting in a year? How many participants?

Could you describe the process of event organisation? What steps do you have to go through?

What is the most difficult part of organising an event for you?

What is the easiest part of organising an event?

What is important for you when you organise and participate at an event? Why?

--- Experience with TB

Why did you decide to use TB?

Which TB services have you used? (ticketing system, lead retrieval app.)

What makes you come back?

What did you do before using the name-badge printer?

Do you have any critical feedback for the services TB provides related to the name-badge printer?

--- Future of events

Do you have any recommendations for what TB should add to their offerings?

What do you think the future of event management is? (10-20 years from now)

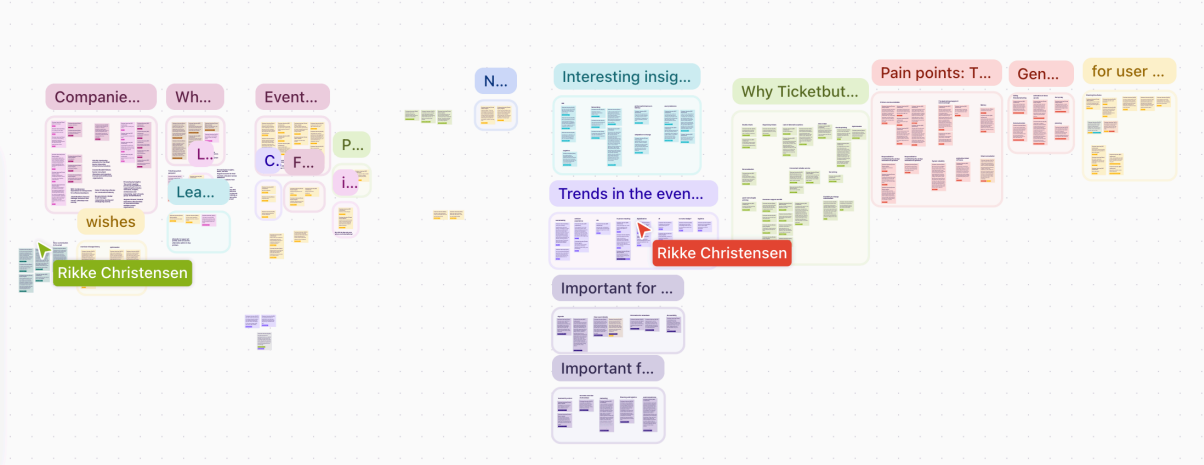
What trends do you see you and other companies care about?

Outro

Thank you for all the valuable insights that you provided us today. This is a huge contribution to our thesis project.

Would it be okay with you to reach out to you again in the near future?

9.1.4 Clustering the findings



9.2 Observation

9.2.1 General set up

- At one station, there's 1 or 2 name badge printers
- There is one volunteer/printer, however, the printer allows to have multiple devices to connected to it, thus it can be more than 1 person operating it
- At this event, they used a coat hanger to hang all the name badges (we can't confirm this is how it's always done at events, our assumption that it is not)

9.2.2 Observation notes

- The guests are queuing, but the queue goes down fast
- There are 5 check-in points, each equipped with either 1 or 2 printers
- The volunteers seem to know how to navigate the app and the printer
- The guests don't show emotions such as frustration, anger or impatience
- The guests show their QR codes either digitally through their phones, or on paper form (printed)
- If the guests don't have their QR codes, the personnel can check them in through the Ticketbutler app by finding the guest's email
- If a guest had not registered to the event, there's a possibility to do so at the event (also through Ticketbutler app)
- All printers seems to work fine
- There are two employees from Ticketbutler on stand-by by the entrance in case there is need for help

9.2.3 Notes from unstructured interviews

Interviewee 1

- Has prior experience with check-in processes, works in a hotel as a receptionist

Q: How is the overall experience using the printer?

- Very good experience
- Really smart to do it (check-in) with the QR code
- The app is very simple and straightforward, I know instantly what to do

Q: What would you say is the best thing about this printer?

- I can check in multiple guests
- I can check in manually if the guest can't show QR code super easily
- Also, if I can easily delete a check-in if I make a mistake
- As soon as I make a check-in, the printer automatically prints the name tag
- Guests don't need to do a lot of waiting

Q: Is there anything that you don't like about the overall process?

- No, I really like using the printer, it is super easy and convenient
- I think one or two printers had an issue – I think it was not printing the labels, but for me everything was fine

Q: How did you find the onboarding?

- We had a meeting prior to the event where one of the leaders showed us how to use the printers and it was really easy
- We did not set the printers up, it was someone else

Interviewee 2

Q: How is the overall experience using the printer?

- It's really great, however, we had some issues in the beginning because the printer did not release the tags, but then we fixed it
- But it's pretty good, it's fast and easy
- The only thing is the badges with the lanyards because they are tangled together and its time consuming to get it out, so when there was a very long queue it was very frustrating

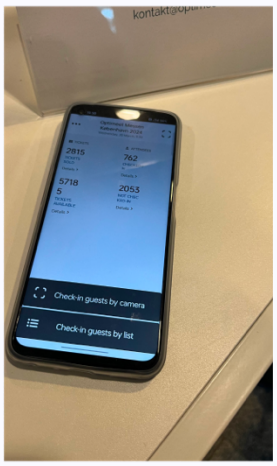
Q: How did you fix it?

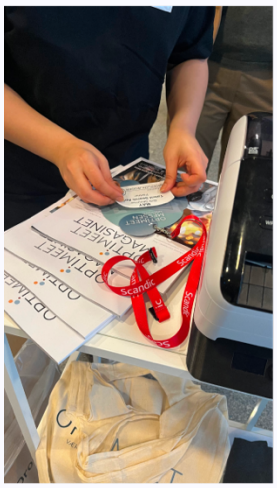
- I don't know what the problem was, we kind of figured it out on our own
- One of my colleagues came and he just showed me how to use it

Q: Is there anything that you are missing (e.g. a feature) from the whole concept?

- Hmm, I don't know. I am just a student, so I'm only here today, and we just got a kick run down on how to use the printer

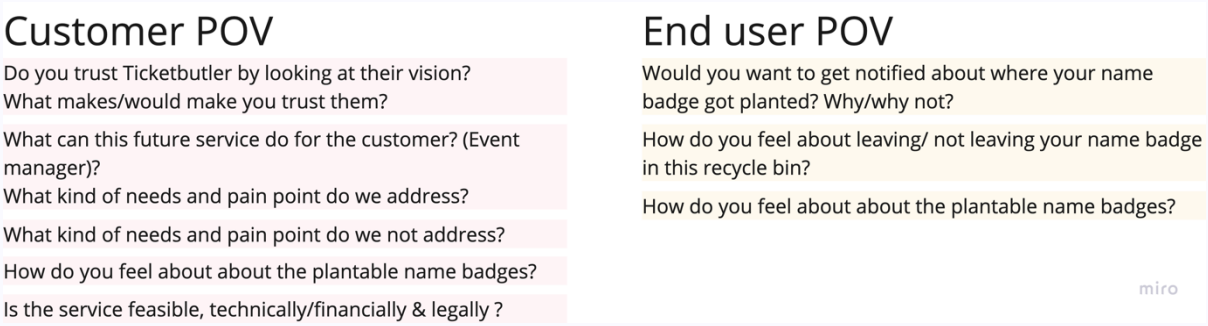
9.2.4 Images taken during the observation





9.3 Prototyping and Testing

9.3.1 Interview guide



9.3.2 Scenarios

Name: John/Jane Doe

Company: Miro, Amsterdam

The year is 2030. You are an experienced event manager. You organise 1 large annual event with 1000+ attendees, and 20 smaller events with 1-200 attendees both locally and internationally.

Your responsibilities include planning, organising and holding events, next to evaluating the overall event performance and experience.

In the past years, you have noticed that by organising in person events, you have increased Miro's carbon footprint by generating a lot of waste at the events. This contradicts with EU sustainability goals and Miro's values and strategy, therefore you have to make a change.

However, it is important for you to keep organising in-person events, as this creates the most value to the attendees by helping them to network most effectively.

Since in your experience attendees tend to throw away their name badges that they mostly use for networking, you want to start your sustainability focused actions there.

Name: Mindy Windy

Company: Adobe

The year is 2030. You are participating in a conference representing your company, Adobe.

You go to the event to network and keep up with industry trends. At the entrance you receive a plantable name badge and lanyard that you can put on. You like the sustainable initiatives, and have tried to plant 1 or 2 name badge before.

You have attended many presentations at the event and talked to a lot of people exchanging contacts. Now it is time to leave the conference since you have to catch your plane.

You proceed to the exit and you notice some recycle bins for the name badges.

What do you do?

Name: Peter Potter

Company: Figma

The year is 2030. You are participating in a conference representing your company, Figma.

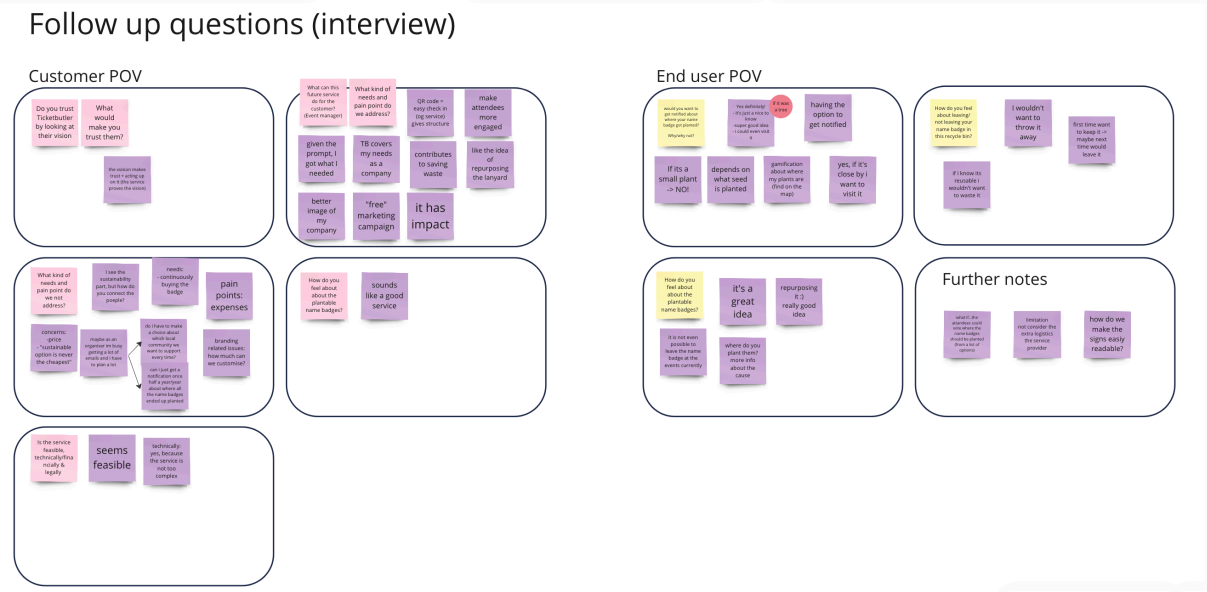
You go to the event to network and keep up with industry trends. At the entrance you receive a plantable name badge and lanyard that you use for easier networking. You are pleasantly surprised by this sustainable initiative and haven't seen this before.

You have attended many presentations at the event and talked to a lot of people exchanging contacts.Now it is time to head home to your family from the conference.

You proceed to the exit and you notice some recycle bins for the name badges.

What do you do?

9.3.3 Testing



9.3.4 Insights