# Promoting Sustainability in Service Design processes through the use of Foresight

A case study on food waste reducing services for Too Good To Go

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# Thesis Information

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# I. Abstract

This thesis explores how the integration of Foresight and Service Design give Sustainability a greater focus through a case study in collaboration with Too Good To Go, a company addressing food waste. The case focuses on understanding emerging behaviors and motivations around sustainable food consumption, with the goal of identifying opportunities for engagement with new user groups. The design process follows a four-phase structure: Framing, Exploring, Developing, and Creating, influenced by the Double Diamond model and the Thinking About the Future framework. This approach brings tools from both disciplines, blends some methods, and creates new tools, attempting to understand the value of this combination. The research highlights how integrating Foresight methods allows designers to consider systemic and long-term change, while Service Design offers a grounded understanding of users and contexts. The findings show that this approach can give more centrality to Sustainability in Service Design by connecting broad societal trends with specific user needs. The thesis contributes both a practical service concept for Too Good To Go and reflections on how design processes themselves can be more informed by the future and be Sustainability-driven. Based on the research, the thesis formulates key insights that may inform future practice and research at the intersection of Service Design, Foresight, and Sustainability.

Keywords: Service Design, Foresight, Strategic Foresight, Sustainability, Food Waste

# II. Acknowledgements

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And especially thanks to everyone who helped us with developing and testing our service, we are amazed by the support, and had a lot of fun with you along the way.

To all readers, we hope we can contribute to your learning and hope this thesis becomes a catalyst for future-oriented thinking in the Service Design field.

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# 1. Introduction

In this chapter, we will introduce the topic of this thesis. We start by outlining the learning objectives and continue by exploring the context of the project. The collaboration partner will be presented and an initial problem statement will be formulated.

The following sections will be discussed in this chapter:



# 1.1 Project Context

## 1.1.1 The problem

Since the 1970s, human activities have impacted nature significantly more to satisfy growing demands for food, energy, resources, and ecosystems have been overexploited. Global supply chains have intensified this problem by creating a disconnect between personal consumption and the global costs of our systems (Díaz et al., 2019). As a result, the balance of nature, which provides us with clean air, water and food, is at risk of breaking down. One of the most urgent consequences of our lifestyle is climate change. In 2024, more than 150 climate-related disasters occurred worldwide and was the hottest year ever recorded (Carrington, 2025). While most people talk about rising temperatures, changing weather, and melting ice, climate change also causes other serious problems that are often ignored, like its effects on biodiversity, farming, health, and demographics (Fry, 2009).

To face those challenges, we urgently need sustainable solutions. We believe we have to move beyond merely minimizing damage and instead rethink existing systems and encourage innovation that can create meaningful change and reshape our relationship with the planet.

This thesis looks at our food system, with a focus on food waste which is a major problem linked to many global challenges. As demand for food rises, so does the pressure on the planet. Yet, a large amount of food is never eaten. According to the Food and Agriculture Organization (FAO), nearly one-third of all food produced globally is wasted each year. Most of it ends up in landfills, releasing gases that harm the climate and ecosystems. The FAO estimates that if food waste were a country, it would be the third-largest emitter of greenhouse gases, following China and the United States (ReFED, 2025). Besides harming the environment, food waste also worsens food insecurity, causes economic losses, and increases public health risks, like toxins and water pollution (Rudziak et al., 2024). While many people don’t have enough to eat, large amounts of food are thrown away at the same time, showing a significant gap in food distribution (FAO, 2023). Economically, food waste costs businesses and consumers over a trillion dollars every year (UNFCCC, 2024).

## 1.1.2 Why we need design

We believe addressing Food waste is critical if we want to build a more sustainable future. Fry points out that to build this future we need to take conscious steps to reverse the fast-moving trend of unSustainability, driven by human-centered thinking and the assumption that the planet's resources are limitless (Fry, 2009). In our thesis, we want to explore different steps that could help achieve Sustainability, defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987).

Design has long contributed to unsustainable living, some even argue that industrial design is one of the most harmful professions, highlighting its role in advertising that convinces people to buy unnecessary products. Design has become a discipline that influences the tools we use, the spaces we live in, and our communities. With this influence comes a social and ethical responsibility, calling designers to use their skills to drive meaningful, positive change (Papanek, 1972). This is why we believe design needs to change its purpose, to help move people away from harmful and unsustainable habits. By making conscious choices, designers can help use design to guide actions and systems toward a more sustainable world, instead of just focusing on how things look, Fry calls this Design Futuring (2009).

In our thesis, we emphasize on the potential design has to advocate for Sustainability. Our focus is specifically on the integration of Service Design and Foresight. Where Service Design offers an approach that considers the needs of users, visualizes the system around them, and involves other stakeholders (Stickdorn et al., 2018). Meanwhile, Foresight allows us to understand possible futures, their impacts and opportunities (Smith & Ashby, 2020). Together, we believe these methods form a framework that has the potential to address Sustainability challenges.

While the role of design in supporting Sustainability is recognized, there is limited research that explores the specific combination of Service Design and Foresight. Through our research, we aim to contribute to these evolving fields by investigating how they can be combined to address urgent Sustainability challenges.
Which leads to our research question: How can Foresight and Service Design give a greater centrality to Sustainability in Design processes?

# How can Foresight and Service design give a greater centrality to Sustainability in Design processes?

# 1.2 Project Partner Too Good To Go

To address the issue of food waste and investigate how to integrate Foresight and Service Design to promote Sustainability within a specific use case, we partnered with "Too Good To Go" (hereafter referred to as TGTG). Founded in Copenhagen in 2015, TGTG is a social impact company focused on fighting food waste. Operating across many countries, TGTG has become a global leader in rescuing surplus food and encouraging people and organisations to make more sustainable choices (Too good to go, 2023).

TGTG's main focus is its mobile app, which connects consumers with local food businesses, such as restaurants, bakeries, supermarkets, and cafes, that have leftover food at the end of the day. Through the app, users can purchase "Surprise Bags" filled with unsold food at a reduced price.

Our partnership with TGTG is guided by the following objectives:

**Analyze Motivations & Barriers:**
Investigate existing motivations and barriers that may engage or impede individuals from integrating Too Good To Go into their lives

**Develop solutions:**
Propose and develop services that address engaging existing customers and attracting new users

Our goal is to identify the key factors that motivate individuals to use TGTG and adopt sustainable behaviors on a larger scale. This research focuses on creating services that promote lasting change, reduce food waste, and support a culture of Sustainability.

# 1.3 Learning Goals

## 1.3.1 Personal Learning Goals

Food waste, Foresight, and Service Design are areas that hold significant meaning for us. By applying Inayatullah's Futures Triangle (Inayatullah, 2008), we have explored our motivations through three dimensions: the weight of history, the push of the present, and the pull of the future (Figure 1).

**The Weight of History**
We have both been interested in food systems for a long time and are fascinated by their complexity and intersections with health, environmental Sustainability, social injustice and food insecurity. Connected to that Mina has worked on projects related to urgent social challenges and Susana has worked on decolonization and justice in design. These experiences made us want to tackle food waste as a critical issue that is closely linked to our values and expertise. This underlying interest has been further developed through our experiences in Service Design and Futures research, which have shaped our understanding of how design can support both constructive and destructive action.

**The Push of the Present**
Our motivation for this project is driven by the urgency of the present moment. The need for Sustainability, combined with our interest in Speculative and Critical Design, motivates us to explore innovative approaches to Sustainability. Also, working together with a company that aligns with our values adds meaningful depth to the project, while combining Service Design and Foresight allows us to create solutions that are impactful and relevant. Furthermore, we are motivated to work on this and see it as a passion project rather than as an assignment.

**The Pull of the Future**
Our motivation goes beyond the immediate task of combating food waste. We believe that equity and Sustainability are central to the food systems of tomorrow. Additionally, We see a responsibility and opportunity to use design to create a better future, not just for ourselves, but for the generations that come after us. For Mina, this goes hand in hand with her desire to develop a career in Service Design and Foresight, while Susana is more interested in Foresight. In addition, she is driven by a vision to decolonize food systems to promote equity and Sustainability.

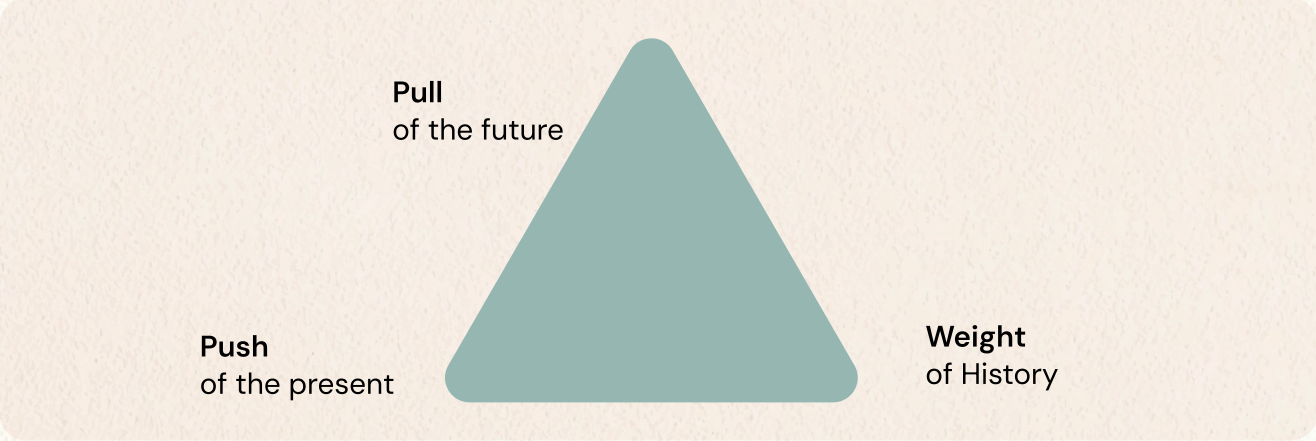


Figure 1: Futures triangle by Inayatullah

## Conclusion: Personal learning goals

- Driven by our interest in the area and the urgent need for change, we want to learn to work in the area of Sustainability.
- To gain the knowledge to take on Sustainability challenges and understand the emerging field and possible futures.
- To develop skills for a future career in Design we want to independently create a Design project for a collaborator.

## 1.3.2 Official Learning Objectives

**Knowledge**
Students who complete the module will obtain the following qualifications:

- Must have knowledge about the possibilities to apply appropriate methodological approaches to specific study areas
- Must have knowledge about design theories and methods that focus on the design of advanced and complex product-service systems
- Account for the scientific foundation, and scientific problem areas, of the specialization
- Describe the state of the art of relevant research in the specialization

**Skills**
Students who complete the module will obtain the following qualifications:

- Must be able to work independently, to identify major problem areas (analysis) and adequately address problems and opportunities (synthesis)
- Must demonstrate the capability of analysing, designing and representing innovative solutions
- Must demonstrate the ability to evaluate and address (synthesis) major organisational and business issues emerging in the design of a product-service system
- Master the scientific methods and general skills associated with the specialization.
- Produce a project report according to norms of the area, apply correct terminology, document extensive command over relevant literature, communicate and discuss the research-based foundation, problem and results of the project orally, graphically and in writing in a coherent manner
- Critically evaluate the results of the project in relation to relevant literature and established scientific methods and models, evaluate and discuss the project's problem area in a relevant scientific context.
- Evaluate and discuss the project's potential for further development

**Competences**
Students who complete the module will obtain the following qualifications:

- Must be able to master design and development work in situations that are complex, unpredictable and require new solutions (synthesis)
- Must be able to independently initiate and implement discipline-specific and interdisciplinary cooperation and assume professional responsibility (synthesis)
- Must have the capability to independently take responsibility for own professional development and specialisation (synthesis)
- Participate in, and independently carry out, technological development and research, and apply scientific methods in solving complex problems.
- Plan, execute and manage complex research and/or development tasks, and assume a professional responsibility for independently carrying out, potentially cross-disciplinary, collaborations
- Independently assume responsibility for own scientific development and specialization (Aalborg University, 2025)

# 1.4 Reading Guide

The reading guide gives an overview of this document's chapters and structure:

**Chapter 2: Literature Review**
Chapter 2 gives a theoretical foundation for this thesis by analysing the disciplines of Service Design and Foresight, their characteristics, limitations, compatibility to Sustainability and explores their integration. The literature review concludes by identifying a research gap concerning the combination of Foresight and Service Design to address Sustainability challenges.

**Chapter 3: Methodology**
This chapter presents a hybrid methodology developed for the thesis, that results from the combination of the Double Diamond model and the Thinking About the Future framework, a four-phase process of Framing, Exploring, Developing, and Creating. The chapter outlines the motivation behind this methodological integration and describes the tools used in each phase.

**Chapter 4: Design Case**
Chapter 4 describes the case study conducted with the collaborator Too Good To Go through the structure of the four phases explained in Chapter 3. This chapter documents the step-by-step design process: from initial framing of the challenge, through research and ideation, to the creation and testing of a service concept. Each section concludes with key insights relevant to the research question, reflections on how methods from both Service Design and Foresight contributed to the design process and case findings.

**Chapter 5: Discussion**
Chapter 5 discusses the findings of the case study in relation to the design process, research question, and the learning goals. It reflects on the methodological integration, exploring how the focus on Foresight and Service Design influenced the process within the case, how it helped answering the research question, and reflections on the official and personal learning objectives.

**Chapter 6: Conclusion**
This chapter concludes the thesis by summarizing the key insights gained from the research, acknowledges the limitations of the project and suggests directions for future research.

# 2. Methodology

The methodology chapter outlines our design approach that we developed for this thesis, combining the Double Diamond model with the Thinking About the Future framework. Which results in a four-phases structure, Framing, Exploring, Developing, and Creating. It has the purpose to integrate tools from both Service Design and Foresight to balance case insights with emerging shifts and perspectives.

This chapter is structure with the following sections:
2.1 Double Diamond
2.2 Thinking About the Future Framework
2.3 Our Methodology

## 2.1 Double Diamond


The Double Diamond is a methodology developed by the UK's Design Council, intended to create a basic and simple framework to support all design professionals. It acknowledges that while designers may have slightly different approaches, the model provides a shared structure, which is commonly used in Service Design. The framework aims to consolidate common design processes into one model, guiding designers through its phases by applying fitting design methods at each step.

The structure of the Double Diamond begins with the Discover phase, focused on exploring and gathering insights, where designers are expected to examine problems from a "fresh" perspective. This is followed by the Define phase, which aims to frame a clear design challenge. Next is the Develop phase, centered on ideation, testing, and iteration. Lastly, the Deliver phase involves finalizing and implementing the resulting service (Design Council, 2015).

## 2.2 Thinking About the Future Framework


The Thinking About the Future framework was created by Hines, Bishop, and Slaughter (2007) to organize the Strategic Foresight approach and categorize its methods. It is not a strictly chronological, step-by-step system, instead, its use depends on the specific process being followed. Meaning that not all categories are used in every project. The framework consists of six activity types: Framing, Scanning, Forecasting, Visioning, Planning, and Acting (Bishop & Hines, 2012; Hines et al., 2007).

This framework can be understood in two major sections. First, the activities describing inbound change, Framing, Scanning, and Forecasting. All of which examine external changes affecting the research context. The second group of activities addresses outbound change, Visioning, Planning, and Acting. These activities focus on the change the project intends to create in the world.

# 2.3 Our Methodology


For this project we used a methodology integrating principles from both Service Design and Strategic Foresight. Drawing on the structure of the Double Diamond (Discover, Define, Develop, Deliver) (Design Council, 2015) and the Thinking About the Future Foresight Framework (Framing, Scanning, Forecasting, Visioning, Planning, Acting) (Hines et al., 2007), with exception of the Planning and Acting steps that were not used in this process, we developed a four-phase process: **Framing and Approaching, Exploring, Developing, and Creating** (See figure 2).

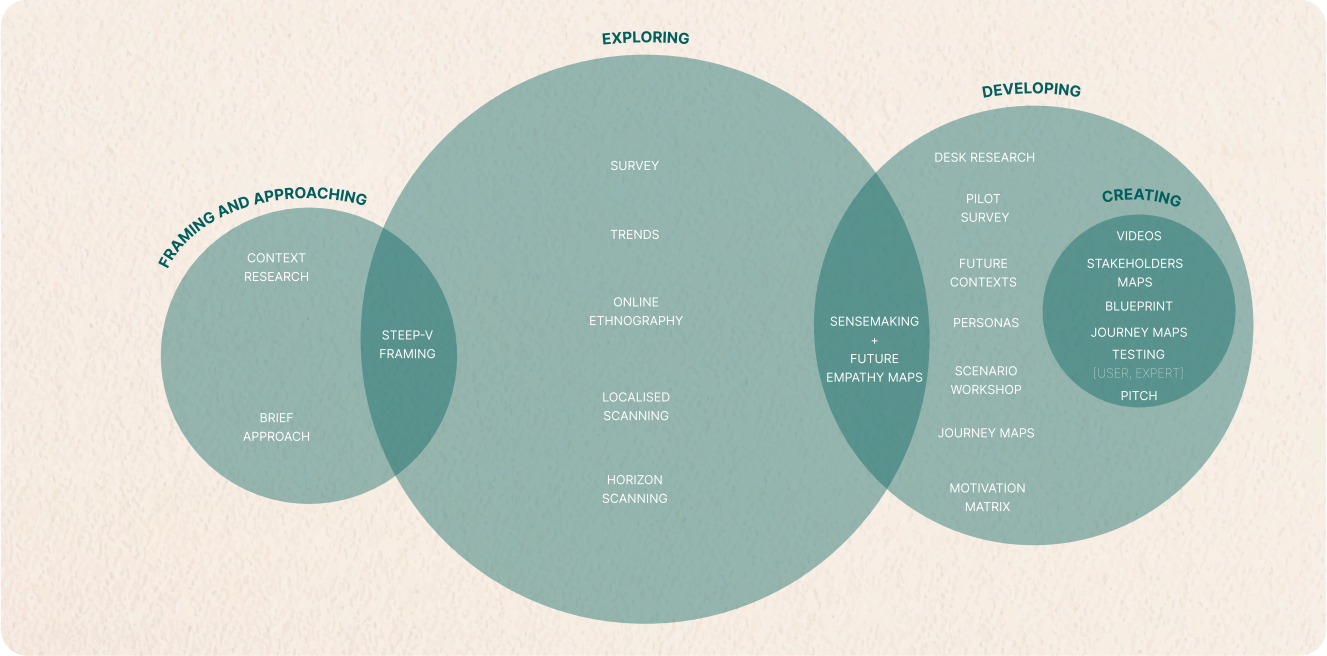


Figure 2: Visualization of our methodology

We aimed to create a methodology that reflected our actual design process, one that merges Foresight and Service Design with our own vision of the design practice. While we align with the diverging-converging nature of the Double Diamond, and consider it to be essential for Service Design (Stickdorn et al., 2018), we created our own visual structure to better represent the interconnected phases of the approach as overlapping areas in the visual. We felt that the Double Diamond's sharply converging points misrepresent the continuity and overlap often present in design phases. Second, its linear layout along a horizontal axis suggests a sequence we wanted to move away from. Instead, we view Service Design as a circular, iterative process, which we aimed to highlight in our methodology.

Our four-step framework emerged through combining the Thinking About the Future Framework and the Double Diamond:

Starting with the **Framing and Approaching** phase to set the scope for the project by establishing its focus. Involving clarifying the scope, reinterpreting the brief, and identifying relevant directions. This step reflects the framing aspect of Foresight (Bishop & Hines, 2012) and starting before the initial stage of Discover in the Double Diamond.

The **Exploring phase** served as the heart of our design research. It overlaps with the Discover and Define phases of the Double Diamond (Design Council, 2015), while integrating Scanning and Forecasting from the Foresight Framework (Bishop & Hines, 2012). By blending tools and mindsets from both fields, this phase will aim to generate insights through a structured investigation of present conditions and emerging signals. The phase ends with the definition of a clear opportunity space.

Later, the **Developing phase**, borrows the name from the Double Diamond process. With the narrowed focus, this phase aims to define a clear direction for the service concept. Drawing from prior insights to shape a tangible proposal. At this point we also wanted to integrate Inayatullah's (2008) futures principle of Creating Alternatives, through the exploration of multiple possible futures as a way to open possibilities for the Service Design process. It bridges research and concept development, reflecting both the Visioning and Designing steps of the Foresight Framework (Bishop & Hines, 2012).

Lastly, **Creating phase**, the final step that involves bringing the concept to life, emphasizing iteration and testing. It aligns with the Develop and Deliver phase of the Double Diamond, as it focuses on finalizing and communicating the service proposal.

## 2.3.1 Overall Research Process

To use the combination of Foresight and Service Design with the intention of creating focus on Sustainability we used the previously mentioned design case with TGTG, where the design brief will create an opportunity to test out our theory. Figure 3 represents how the methodology was used in our design research process. This also helps visualise the two outcomes expected from the thesis, first creating a service that can help TGTG find new users, and second, contributing to Service Design academia.

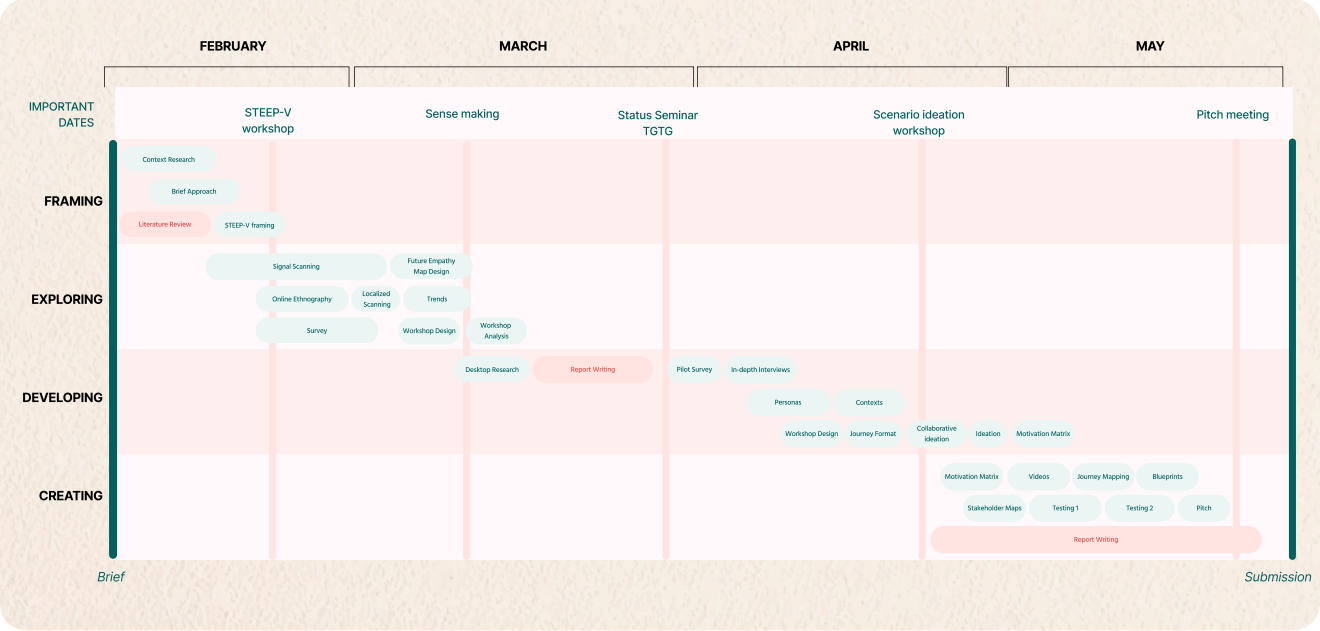


Figure 3: Timetable of the thesis

# 3. Literature Review

This chapter builds the theoretical background for the thesis. It starts by explaining what Service Design is, how it relates to Sustainability, and what it still lacks to fully support sustainable solutions. Then, it looks at Foresight, its link to Sustainability, and where it also falls short. In the final part, the chapter brings Service Design and Foresight together to explore how they can support each other in working toward more sustainable outcomes.

The chapter is structured as follows:
2.1 Service Design
2.2 Foresight
2.3 Service Design & Foresight

# 3.1 Service Design

The growth of Service Design as a discipline can be accredited to the changes of human needs in western industrialized countries, where the increased quality of life has been shifting the economy from one focused on material needs, as they are already met, to one focusing on the service sector (Polaine, 2013). Today, while things may still be marketed as a simple product, they are often build out of a complex combination of products and services, which can be visualised, rationalised, and understood through Service Design (Shostack, 1982)

Service Design can be defined as an approach that brings together diverse disciplines to develop or refine services. Its goal is to improve how people experience these services by making them more intuitive and relevant, while also optimizing their performance for the organizations that deliver them (Moritz, 2005). Fundamentally, Service Design is centered on shaping and managing experiences as a series of interconnected activities, rather than treating them as standalone products (Shostack, 1982). For this reason, Service Design has been applied to reinvent organizational structures and business strategies, embracing innovation and generating value, which are essential for driving sustainable transformation (Jung & Mejía, 2023).

Although Service Design originated from the industrial design tradition (Polaine, 2013), the Service Design community is increasingly broadening its focus. This shift is particularly visible in the evolving agenda of the Service Design Global Conference (SDGC). Initially dedicated to improving services, the conference has expanded its scope to address critical global challenges such as Sustainability, inclusivity, and social impact. This evolution indicates the discipline's growing significance and its ability to adapt to the complex challenges of our time (Kennedy, n.d.).

## 3.1.1 Characteristics

Service Design can be approached as a mindset, a process, and a set of tools, each grounded in research, iteration, and a strong focus on process. It operates through a series of exploratory iterations that deepen understanding over time. Designers prioritise early user feedback and rapid prototyping. At its core, Service Design is defined by its co-creative, and holistic nature, that guides its application across all contexts, including this project (Stickdorn & Schneider, 2012).

### 3.1.1.1 Co-creation & User centered

Co-creation is a collaborative process that brings together users, professionals, and service providers to develop services together (Polaine, 2013). This ongoing interaction among stakeholders allows services to be continually shaped and refined to create real value . Alongside co-creation, Stickdorn et al., also identify user-centeredness as a core principle of Service Design, defining that services should be experienced from the user's perspective (Stickdorn et al., 2018). However, this approach often translates into designing for users rather than with them. Therefore, creating a shift toward co-creation, designing with people rather than for them, for a more participatory and inclusive approach to design. Tapping into collective creativity, which holds promise for creating more sustainable ways of living. As global challenges become increasingly complex, the inclusion of diverse perspectives and expertise is more vital than ever (Sanders & Stappers, 2008).

### 3.1.1.2 Holistic & Evidencing

Furthermore, Service Design is holistic, which means that the whole environment of a system should be taken into account (Stickdorn et al., 2018). The holistic approach is a characteristic that rises from the role of Service Designers as multidisciplinary professionals (Moritz, 2005) and continues to be visible in the way the tools and methods of Service Design attempt to represent across the different steps of the system and represent all stakeholders (Shostack, 1982; Manzini et al., 2010). As Lee et al. finds, Service Design mapping is intended to create collective alignment with other stakeholders more transparently (2023). These tools also highlight another key characteristic of Service Design, evidencing. This refers to the way Service Design makes intangible values visible, helping to communicate and consider these often unseen elements throughout the design process (Stickdorn et al., 2018).

## 3.1.2 Service design and Sustainability

The transition from product-oriented solutions to service-oriented approaches, combined with holistic thinking, opens up new possibilities for addressing complex societal challenges. Among these, environmental Sustainability stands out as a critical concern. Although the extent to which Service Designers currently engage with high levels of complexity is still being explored, their evolving role points to a significant potential for Sustainability-driven innovation (Jung & Mejía, 2023). A designerly mindset, integrating both divergent and convergent thinking, is seen as a valuable approach for supporting long-term Sustainability goals (Klauer et al., 2013). To better understand how Service Designers can put Sustainability into practice, further exploration of real-world case studies is essential.

## 3.1.3 Gaps in Service Design

A significant challenge facing Service Design is that it operates largely within the boundaries of the current economic system. As Willis notes, “design is overdetermined by the model of professional design as the model of all designing” (2018, p. 2), suggesting that our understanding of design is narrowly shaped by its conventional, professionalized form. Vink elaborates on this argument by highlighting that if research, theory, and thinking about design are unable, or unwilling, to question and move beyond the idea of design as merely a service profession operating within today’s economic system, they risk reinforcing the structures that lead to unsustainability (2019). This raises the question if it is possible to be sustainable within an unsustainable system.

Also, another problem with Service Design, is the consideration of time within its tools and as a mindset. As Lee et al. find, the most frequently met problem with Service Design by expert designers and educators was the lack of time consideration within the tools. They conclude that time dimension needs to be investigated in Service Design research (2023).

Lastly, Service Design faces a significant challenge when dealing with complex and systemic issues. When designers engage with deeper layers of systems and confront wicked problems, conventional tools are often insufficient for navigating the uncertainty involved. There is a tendency to simplify such problems in an effort to find clear solutions. Without a full understanding of the complexity at play, there's a risk of treating these challenges as simpler than they are, which can lead to solutions that overlook critical dynamics and unintentionally create new issues (Suoheimo et al., 2023).

# 3.2 Foresight

Foresight is a part of Futures Studies, a discipline that analyzes possible, probable, and preferable futures to help organisations work with uncertainty, by considering alternative futures rather than fixating on a single possibility for the future. This exploration of alternatives serves a decolonial function as it often de-colonises the future from traditional frameworks and assumptions. This opens space for exploration of alternatives where the voices of many are empowered in the shaping of visions and actions for the future. Futures Thinking removes reliance on decisions made by others and often purposefully gives agency to the individual or group applying this knowledge (Inayatullah, 2008).
Strategic Foresight can be defined as “a structured and systematic approach of exploring plausible futures to anticipate and better prepare for change. Foresight is not about predicting a single future. It is about the analysis of plausible futures, which can support better policy making.” (OECD, 2014). As the definition explains, Strategic Foresight is built on the understanding that the future is not a single, predictable outcome, but a range of possibilities that can be explored for strategic purposes. This means that Foresight as a discipline is based on the exploration of uncertainty and complexity. Instead of aiming to predict the future, Foresight focuses on exploring multiple potential directions and recognizes the role people and organizations play in shaping what lies ahead (Bishop & Hines, 2012). As a structured way of thinking about change, Strategic Foresight supports proactive decision-making, representing a specific methodological approach within a broader effort to examine and influence the future (Ojasalo et al., 2015).

## 3.2.1 Characteristics

### 3.2.1.1 Collaborative

Collaborative Foresight is a community-based and inclusive way to approach Strategic Foresight (Hafner, n.d.). Collaborative Foresight is important as it creates a bottom-up approach to strategy, including diverse perspectives and potentially increasing creativity. It is inspired by a democratic notion of engagement, as a way to minimise power structures when exploring uncertainty (Weigand et al., 2014).

### 3.2.1.2 Systemic

Systems thinking is at the core of Foresight, shaping how futurists perceive and make sense of the world (Bühring & Liedtka, 2018). It emphasizes the interconnected nature of elements within larger systems, where interactions often produce unpredictable outcomes (Bishop & Hines, 2012). The complexity and unpredictability of systems underscore the importance of integrating futures thinking into strategic planning to drive innovation (Bühring & Liedtka, 2018). Rather than relying on fixed forecasts, futures work emphasizes creative exploration and the consideration of multiple possibilities. Inayatullah argues that assuming a single, predetermined future often leads to repeated errors, while deliberately exploring alternative futures opens space for new insights and strategic opportunities, enabling individuals and organizations to better navigate uncertainty (Inayatullah, 2008).

### 3.2.1.3 Future oriented

Though Foresight is future oriented, Futures Thinking is not an exploration of time itself, or an attempt to predict the future. This discipline stands under the assumption that humans are bad at predicting, and though we can predict in the lab, this is a space where most variables are controlled but when it comes to bigger systems, it is almost impossible to tell what will happen. This is why Futures Thinking attempts to explore uncertainty with the belief that it has unique benefits as it makes people cautious (Bishop & Hines, 2012). This creates the goal to transform the future through the exploration of it (Inayatullah, 2008).

## 3.2.2 Foresight and Sustainability

Foresight is essential for driving Sustainability, as it enables the anticipation of systemic challenges and shapes solutions that extend beyond immediate needs. Without future-oriented thinking, the risk of becoming reactive rather than strategic increases, sidelining long-term environmental and social considerations (Inayatullah, 2008). Design-driven Foresight ensures that Sustainability is not an afterthought but an integral part of innovation, guiding decisions that balance feasibility with ethical responsibility (Floyd & Zubevich, 2010). In this way, Foresight can help overcome the ‘crisis of imagination’ (Mulgan et al., 2020) through alternative visions of the future that may be more desirable than those that predominate (Neuhoff et al., 2022).

Design driven Foresight holds a relevant space in the imagination of strategic futures for Sustainability. Through the imagination and building of creative spaces for immersion, deep reflection, and visual communication, Foresight enhances strategic planning in complex systems, such as Sustainability, helping people actively engage with tensions that may arise. This happens as it works as a tool to engage with uncertainty productively activating transformative strategies that secure Sustainability for future generations (Neuhoff et al., 2022).

## 3.2.3 Gaps in Foresight

As Foresight  works with external perspectives, many times exploring inbound change, to see how the emerging patterns of the world may affect a specific area (Hines, 2018), it may lack specificity when representing individual stories. Though, Foresight brings a method that is very effective at bringing in an external perspective and exploring alternative futures for strategy, but it sometimes misses out on the perspective of users (Peruccon & Simeone, 2023).

Also, there is a limitation where exploring alternatives does not mean that biases are being avoided. As Pupul Bisht says “Multiplicity, however, does not guarantee plurality” a problem Foresight has as most explorations of the future tend to follow the dominant epistemology of western thinking. This is especially a problem in its participation, though often referred to as collaboratively, there is little space for non-experts in Foresight processes, making it still very expert-based and biased (2020). The plurality of the process is often not consciously approached, Weigand et al. even found that Foresight and scenario development are predominantly led by management (2014).

# Service Design and Foresight

Recent studies explore the combination of Design and Foresight, highlighting its potential in driving Innovation and Sustainability (Løgager et al., 2022; Peruccon & Simeone, 2023). However, the intersection of Service Design and Foresight remains underexplored, with limited research conducted and a need for real-life applications (Løgager et al., 2022). Early research in this intersection has revealed potential in the combination of these two disciplines for innovation, creativity, inclusion, Sustainability, and long-term thinking (Ojasalo et al., 2015; Peruccon & Simeone, 2023).

Service Design and Futures Thinking share complementary perspectives, as both aim to find new opportunities (Ojasalo et al., 2015). Methodologically, Service Design adopts a localized approach, emphasizing users' wants, needs, as well as the surrounding system. In contrast, Foresight examines external patterns, exploring macro-landscape changes such as social, cultural, economic, technological, and environmental systems (Løgager et al., 2022). Combining these two perspectives allows for the integration of external and localized viewpoints (Peruccon & Simeone, 2023).

Moreover, there is potential for how the methodologies for both Foresight and Service Design align, providing concrete methods to find insights, ideating, and creating value within systems (Ojasalo et al., 2015). Deeper insights and systems alignment can be reached with ongoing creative experimentation using the combination of these tools, as it facilitates conversations around the current reality and explorations of desirable futures. This can happen with different stakeholders and experts leading to context-specific future-proof findings (Bühring & Liedtka, 2018). It also enhances the ability to identify service innovation opportunities (Løgager et al., 2022; Ojasalo et al., 2015).

The Foresight discipline focuses on approaches designed to help organisations work with uncertainty (Inayatullah, 2008), meaning that it mostly works in future-oriented thinking. Meanwhile, Service Design has capabilities that can incorporate future exploration, as it aims to create a near-by future(Løgager et al., 2022). Also, it has tools, such as, journey maps, systems maps, and scenarios, which can either reflect the current state or adapt to the future state when adopting futures-oriented service innovation (Stickdorn et al., 2018). There have also been efforts to combine Futures Thinking in Service Design in the public sector, such as Critical Service Design that proposes the exploration of fictional services that explore anticipatory innovation through Service Design (Salinas et al., 2023, 2024).
The limited exploration of the intersection between Service Design and Foresight presents a significant research gap that has the potential to improve services. Both disciplines have demonstrated potential in driving innovation, Sustainability, and systemic thinking; their combined application remains underdeveloped, particularly in real-life scenarios (Løgager et al., 2022). Bridging this gap, by combining both disciplines in a real-life case, can lead to a deeper understanding on how localized, user and system-centric, and external, environmental and trend-driven perspectives can be integrated into innovation processes for Sustainability.

While Foresight focuses on long-term and broad future scenarios, Service Design tends to concentrate on the near-future and practical implementation of services. So, by incorporating Foresight into the Service Design practice, designers are prompted to think more critically and create more future-proof solutions. Hence, the combination of these disciplines enhances the capability to innovate sustainably, ensuring that services are designed with both immediate user needs and long-term environmental impacts in mind (Løgager et al., 2022).

After exploring the respective strengths and weaknesses of Service Design and Foresight, we believe their combination holds the potential to strengthen both disciplines. While Foresight and Futures Thinking are particularly adept at addressing uncertainty (Bishop & Hines, 2012), Service Design often struggles to operate systemically in these uncertain contexts (Suoheimo et al., 2023). Conversely, Foresight can risk becoming too abstract or detached from users' lived experiences (Peruccon & Simeone, 2023), whereas the holistic and user-centered nature of Service Design offers a grounded approach to understanding specific systems in depth (Stickdorn et al., 2018). With the following design case we aim to explore whether integrating these disciplines will actually strengthen both and to assess if this synergy creates a more sustainable way of thinking and working.

# 4. Design Case

In this chapter, we explore the design case with Too Good To Go as the basis for examining our research question. Each phase of the process includes preliminary findings that are linked to our research question, helping us build toward our final conclusions. The chapter is structured around the following sections:

4.1 Framing and Approaching
4.2 Exploring
4.3 Developing
4.4 Creating

# 4.1 Framing and Approaching

The initial phase of this project had the intention of framing the focus through the definition of a research scope and approach to the Brief. Key activities in this stage included conducting desktop research, reinterpreting the brief provided by TGTG, and engaging in a collaborative scoping session with TGTG. These efforts enabled us to identify and prioritize the elements relevant to addressing food waste, while intentionally setting aside aspects that fell outside the project's scope.

## 4.1.1 Context

The desktop research started before receiving a brief, and it was a step taken to understand the what of the thesis and find potential collaborators that aligned with our findings and interests. With the information we created a Mindmap, a tool that helps exploring thoughts around a specific topic (Service Design Tools, n.d.), in this case with the topic of sustainable and moral consumption of food (See appendix 1). This exercise supported us in exploring various possibilities and finding common interest to focus on the thesis. The mapping out of our thoughts also helped us think of potential collaborators.

We chose to center on sustainable consumption, examining what motivates people to adopt sustainable behaviors. Other areas of interest such as transparency, greenwashing, and brand cancel-culture also emerged as intriguing themes, offering learnings into how accountability and access to information influence sustainable decision-making. Food waste and changing diets also came up within our research, which we found to be exciting as an area to explore sustainable behaviors. With this refined focus, we reached out to TGTG. They agreed to collaborate with us and aligned with our project's priorities and direction.

## 4.1.2 Brief

TGTG provided us with a case brief that offered insights into their objectives. However, after reviewing the brief, we decided to reframe it slightly. We felt it covered a broad range of aspects, from which we chose to focus on and prioritize specific elements.

**Initial Brief**
Key Opportunity: How might we engage more people to save food waste using Too Good To Go?
Being smart for the climate is an attractive value proposition, and resonates deeply with our core users. However, this can feel too far removed as a motivator in the moment to use Too Good To Go.

We want to

- better understand how to more effectively integrate with users' day-to-day routines so that choosing TGTG feels top of mind.
- In addition, we want to understand how to engage folks outside of this core group, who may not see saving food waste as a strong motivator to use our product.

**Reframed Brief:**
We will prioritize understanding:

- Emerging values and behaviors.
- Exploring ways to attract new users in the future. Our goal is to help TGTG grow and reach an even larger audience. By keeping an eye on evolving trends and understanding what motivates people, we aim to ensure TGTG remains relevant and appealing to potential users.
- Exploring who the emerging consumer groups might be and how they should prepare to stay relevant for them. This includes identifying their preferences, values, and expectations, so that TGTG can adapt to meet their needs.
- Integrating TGTG into the daily routines of current users, while important, will not be a main priority for our design process. Instead, our efforts will center on identifying new opportunities and directions for growth, with a particular focus on preparing for future consumer trends. This approach will help expand the platform's reach and ensure it resonates with the evolving market.

**Findings of the case: Key insights**

- As a part of framing the Brief, we closed down our research scope to explore the areas relevant to the brief given to us. We closed down to Europe, as an area where TGTG has an important presence and where we could easily access users.

## 4.1.3 STEEP-V Workshop

To identify the key topics within the food waste landscape that would be important for both our project and TGTG, we conducted a STEEP-V Workshop (See Appendix 2) done to scope the project (Bishop & Hines, 2012) with a collaborative approach. The workshop had the goal to explore changes, shifts or emerging events that are currently happening in the research landscape (Smith & Ashby, 2020) and to align on areas of interest. By doing this exercise with company employees we expected to further understand TGTG's interests and that the participants would act as food waste experts to help us dive deep into the topic.

After a warm-up, we started the workshop with TGTG by presenting a central question to guide the session:
**What emerging trends, values, and behaviors will drive ethical and sustainable consumption in the food waste industry over the next 5–10 years?**

To guide the exploration, we used the STEEP-V framework, which examines social, technological, economic, environmental, political factors, and also a focus on values, as they play a crucial role in shaping the future (Smith & Ashby, 2020). We decided to use the STEEP-V in the Scoping step, since the framework is a base for horizon scanning (UNDP, 2018) and as we wanted to create a collaborative approach to the research. By exploring the potential topics of research with TGTG we could create a research landscape with them.

Four members of the design research team of TGTG were invited to the session from which two attended. The session was done in-person over the course of ninety minutes. As only two participants attended the session, we all actively participated in the workshop to maintain an energetic flow of conversation and also include our own interests in the research landscape.

During the workshop, we engaged in an all-is-valid, collaborative session where everyone contributed their thoughts and views of events, and ongoing developments related to food waste and sustainable consumption. Using post-its, guiding questions, and a time limit per area we mapped out everything we found relevant within each STEEP-V category. Considering the brief and our personal interest in sustainable consumption, we invested more time in the Social and Value areas, than the others.

In addition to the STEEP-V exercise, we conducted another scoping exercise where the TGTG participants were asked to prioritise key Drivers, which in Foresight are broad, long-term trends expected to have a significant impact on the future because of their wide-reaching influence. They cut across multiple industries and topics, shaping various contexts in different ways (Smith & Ashby, 2020).

Because drivers are broad and sometimes too abstract to work with, we combined the use of them with Service Design, as an attempt to make them more user-friendly. For this, we identified drivers and brought them to the workshop, where they would be put onto a 2x2 map with two polarities as axes (Manzini et al.) by the TGTG participants (See appendix 3). We brought five different drivers and empty formats for them to add any that they thought were missing. The drivers had a name, a description, sliders for some characteristics, areas of the STEEP-V they affect and “superpowers” as the potential opportunities they bring. The STEEP-V areas were filled by TGTG, with the inten 3tion of finding their relevance in their context. This was done as a way to prioritise drivers into the scoping, to focus the areas of further research, by understanding their priorities, opportunities, and identified risks.
The polarities of the axes were:

- Relevant to Irrelevant (How important the driver is to TGTG)
- Undeveloped to Developed (How far along it is in the world today)

Figure 4 shows the different drivers:

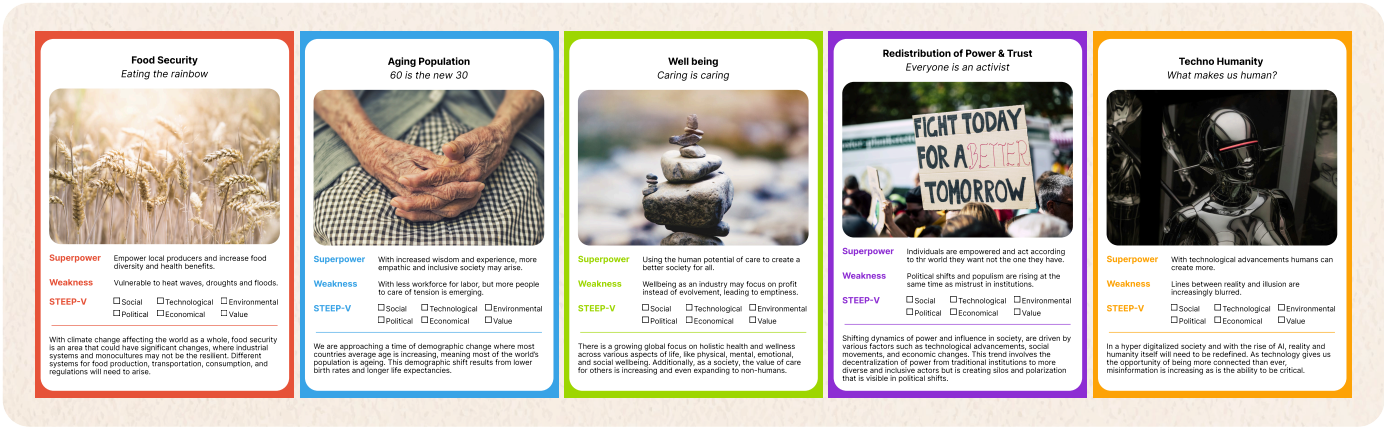


Figure 4: Drivers presented in the STEEP-V Workshop

We then asked TGTG to place each driver along these axes based on their perspective. This helped us visualize which trends they considered most important and how advanced they believe these developments are.

**Process reflections**

This was our first workshop with TGTG, this session helped us frame the project by clarifying which aspects are most important to them and providing a foundation for further exploration. However, the themes named tended to be too broad, often addressing large topics rather than specific, focused points. Also, the things mentioned tended to be in the close future or the present more than the landscape we proposed for 5-10 years, which shows the difficulties humans have in dimensioning time and especially the future (Smith & Ashby, 2020).

There is a chance that working on more warm-ups, not just one, could have helped understand better what we expected. Additionally, there was a lot of focus on the individual experience and on the perspective of users in industrialized cities, but little focus on food waste issues, other stakeholders, or even people outside of cities. Having more experts in food waste could have added depth and provided richer insights to the discussion. Lastly, using the STEEP-V framework to scope our process, though in a limited way, pushed us to have a systemic approach to the research.


Figure 5: STEEP-V Workshop TGTG

### Findings of the case: Key insights

- The "Redistribution of power: Everyone is an activist" driver was only considered moderately important to TGTG. Given their mission, we expected activism to be a stronger priority.
- We had theorized that the “Aging population: 60 is the new 30” would be important for TGTG given accessibility considerations, and how the TGTG experience requires a lot of mobility and ability. But, TGTG’s target group centers mostly on young adults and families. From this point on, we decided to focus on that group for the research, specifically people between 20 and 45.
- Two drivers were highlighted, “Techno humanity: What makes us human?”, Emphasizing the role of technology in shaping the future of food Sustainability. “Food security: Eating the rainbow” that focused on changing food security due to climate change Highlighting the urgency of addressing global food access and waste.

### Preliminary Findings: Research Question

- Much of the conversation naturally centered around Sustainability within the context of food waste. Meaning that systemic discussions about near-future trends can drive conversations into thinking more critically about Sustainability. This confirmed our theory that the use of the STEEP-V framework collaboratively can help facilitate systemic conversations around Sustainability.

# 4.2 Exploring

The exploring phase was the foundation of our design research, guiding us toward a defining area for the project development. It integrated both Service Design and Foresight tools, creating a collaborative framework towards a project focus. The Service Design tools included Online Ethnography, and a Survey, while the Foresight tools consisted of Horizon Scanning, Trend creation, and a Sensemaking workshop. By combining elements from both disciplines, we developed new tools, a Future Empathy Map and Localised Signal Scanning, to bridge Service Design research with Foresight methodologies. The culmination of this phase was a collaborative workshop, where all gathered insights were synthesized in a shared space of exploration alongside experts, users, and representatives from Too Good To Go.

## 4.2.1 Horizon Signal Scanning

Horizon Signal Scanning, a key tool in the Foresight process in the Scanning phase, involves research across the scope established in the Framing stage to identify and catalog signals, trends, and other driving forces of change. This can be seen in the present through emerging changes, evolving information, or events that could further develop in the future (Smith & Ashby, 2020). The Horizon Signal Scanning is an extensive research composed by Signals, named after the concept of “Signal of Change” (Dufva, 2019). For the process of scanning, we used desk research to find various Signals across the different STEEP-V areas (Smith & Ashby, 2020) which was guided by the topics mentioned in the collaborative STEEP-V workshop with TGTG. This helped us provide coverage of all aspects of the research landscape, for a more holistic view of the context. The search for signals resulted in over eighty signals of change (See Appendix 4).

For the signal cards (See figure 6), the three main components proposed by Dufva were considered. First, the event or phenomenon itself, communicated through a title and a picture. Second, the evidence, communicated through in a short paragraph, corresponds to the news item, service, object, photo, story or event. Third, the interpretation of the signal explaining what its link is to the research scope, communicated in a short text format (2019). Additionally, tags and source links were added to the signals for easier organisation and later pattern recognition.

**Process Reflections**

Using this method for research was an effective way to get an overview of the landscape of food waste. Using the STEEP-V framework to scope our research, pushed us to have a systemic approach to the research, helping us look for the right information and not lose focus, potentially reducing our biases. Even if there were areas that aligned with our beliefs or interests more, we still had to explore the other sides and perspectives of the landscape too. Additionally, the use of signals, and the chosen signal format, helped keep the research concise which had the benefit of maintaining the process active, agile and simple. But there is a risk that when focusing on Futures research, the user which is the main focus of the brief given by TGTG, can be understood from a superficial level, leaving out nuances that come from focusing merely in a specific area.

An interesting result was that most of the topics and key areas that would be needed in a traditional desk research when starting a project, were covered by the signal scanning. Considering that this research was connected to the STEEP-V Scoping, we believe that better results in that earlier step could lead to signal scanning potentially being a replacement of a traditional desk research activity (Stickdorn et al., 2018).

There is another positive aspect from using the Horizon Scanning as a research method, being that it keeped us in the research mindset, avoiding jumps to ideation. As designers it is sometimes hard to keep away from thinking of potential ideas for services, which can make the process difficult or biased. But, having a systemic view of the areas of relevance related to the brief, pushed us to reflect on the patterns and changes in the landscape; not new ideas. This relates back to the nature of Foresight, as it is created to work in uncertainty (Bishop & Hines, 2012), a value that can help execute a design process that incorporates the external landscape in the project.

**Preliminary Findings: Research Question**

- When using the STEEP-V as a basis for a research scope, there is a lot of interconnection across the different areas of the framework (e.g. a signal that combines technological and environmental). This can make Sustainability cross into other areas of research and into any project that is scoped with the STEEP-V. Potentially making Sustainability spread into other areas of focus, which could make environmental concerns a highlight across the framework.
- The idea of interconnection is also evident within the system, as when doing the Horizon Scanning we found signals related to Sustainability from the systemic to individual, making it possible to explore the scattering of a topic throughout the system.

## 4.2.2 Localized Signal Scanning

To include a localized perspective into the Futures research, where external perspectives predominate (Peruccon & Simeone, 2023), we considered it relevant to include the Service Design research into the format of signals, used in Foresight. For this part of the process the tools used were, Online Ethnography and a Survey. This was done with the intention of mixing both localised and external perspectives into one, bringing them to the research into the same dimension.

It is important to mention that the localised signals are composed of findings from Service Design research, meaning that they are not necessarily hinting at a change, as they usually are in futures. But, they bring in present perspectives into a futures oriented research. We did this with the intention of combining the findings in a collaborative workshop as a moment of culmination of the exploring phase. We believed that the research would complement each other and help participants get a full perspective, from localised to external.

# 4.2.2.1 Online Ethnography

Online Ethnography is a tool that allows for the exploration of human behavior in the online space, because of its digital nature it allows for high accessibility to a variety of people's thoughts and experiences. It involves observing and analyzing online communities, social media, apps, and other digital platforms to understand different stakeholders needs, motivations, and pain points (Stickdorn et al., 2018). Because TGTG's community is very active in social media, this method was chosen over traditional ethnography as it gave us access to a lot of diverse information. This kind of research allowed us to travel around the world with the TGTG users, and other stakeholders, and understand how the service adds value or doesn't in different situations. The research analysis was done through a table in Notion to categorize the information (See appendix 5) and then, the most important findings were put into Signal cards (See appendix 4).

For the process, different constraints were used to focus the research and maintain comparable processes for both of us. Four main characteristics were prioritised. First, the research focused on only social media platforms, Youtube was used for its long format videos where more information about the full service would be communicated, Instagram was used as a place where both short format videos and images with text could be found, and Reddit was chosen as it was found to be the social media site with more activity on TGTG related content in a primarily text-based format. Second, the keywords in the titles and hashtags were used, as a way to prioritise content that would be used for the research that had hashtags such as, #TGTG, #ToGoodToGo, #TGTGunboxing. Third, mostly english based content was analysed, but some content in german, spanish and danish was also included. Lastly, content that was solely focusing on the products or on the collaborators was not included, as the focus of the research is in TGTG as a service.

**Process Reflections**
This tool allowed us to follow users through the TGTG service, especially those times where high value was delivered resulting from a successful experience, or those in which the opposite happened, helping us understand the users' pains and barriers. It allowed us to access information from different stages of the service, in a variety of situations and have complementary perspectives from stakeholders. It was a good tool to find outliers experiences, positive or negative, and learn from them. For example, an outlier experience is the use of external bots to get popular bags that sell out quickly. Additionally, though most of the information was user based, the Online Ethnography helped us collect perspectives from other stakeholders, like people working with the app's collaborators, their perspectives and experiences.

Lastly, there is a limitation to the way we approached this method, as probably having more restrictions would have made it more enriching. It would have been relevant to add restrictions on location and dates where the information was published or popularity of the content. Having these would have made the pool of information smaller and could have helped us find either more recent or more relevant information. Additionally, background checking users could have improved the quality of the research, as it could help us understand what kind of user it is and maybe help us build profiles for stakeholders.

**Findings of the case: Key insights**

- Too Good To Go's limited vegetarian options underestimate the growing demand for sustainable eating.
- A rewarding first experience is necessary to drive ongoing engagement with Too Good To Go.
- Collaborators have a significant influence on Too Good To Go's brand image.
- Some users hack the system with bots to overcome limited stock availability.
- Access to luxury food at a lower price makes sustainable eating more appealing.
- Too Good To Go serves as a companion for treats during economic distress.
- Saving money through the platform feels rewarding and adds to the fun.
- Too Good To Go may take perks from workers and monetize food rescue.
- The surprise element enhances the experience and keeps users engaged.
- Trying new places and brands adds excitement and variety to the Too Good To Go experience.
- Too Good To Go is difficult to access for those living outside the city.
- Unpredictable cancellations reduce user trust in Too Good To Go.
- Some collaborators of Too Good To Go are perceived as prioritizing profit over food rescue.
- The effort required for frequent pickups makes it challenging to use Too Good To Go as a daily habit.

## 4.2.2.2 Survey

As a part of the exploration stage of our research, we created a survey. This method is used across design processes, but in Service Design is commonly used as a way to inform the project direction (Alves & Jardim Nunes, 2013).

The survey was directed at users or potential users of the TGTG app who live in Europe and are over eighteen years old. It was composed of three main intentions, to examine food choices, preferences, and food habits, to understand users' sustainable attitudes in the food context, and to explore the key areas where the service offering is bringing value and those where it could improve. To explore how people interact with the app, their perception of it, and the value it is creating, we surveyed both users and non-users, creating different branches of the survey, depending on the participants' use of the TGTG app. The approach to the participants was done through convenience sampling, meaning that we shared the Survey between our contacts. Because of this, the results may be biased and not representative (Stickdorn et al., 2018). The sample was 47 people, 30 of which identified as feminine gender, 15 as masculine gender, and an average age of 31.

From a methodological perspective, the survey was designed both to serve as a resource of knowledge to guide the process (See appendix 6), while also helping us create findings to put into signal cards, to be able to combine them with the Horizon Signal cards for a full view of the research. The questions included "How many eating restrictions or dislikes do you have?" and "Do you like to be able to choose your food or get surprised?". For those who have used the app, we dived into the different offerings TGTG provides (bakery bags, grocery bags, meals, and parcels) and questions such as possible gains "What barriers, if any, prevent you from using the Too Good To Go app?". For those who haven't used the app hypothetical questions to understand potential users behaviors, motivations or barriers were done. Also, a section of the survey aimed to understand brand perception, looking for possible pains with questions like "What is your perception of Too Good To Go?".

For the results (Appendix 7) we found that food waste reduction is the most common sustainable food practice with 75% of participants engaging with it and reusing food waste being the most common action to reduce waste with 88% of the participants doing it. We also confirmed that the main motivations for people to use TGTG are saving money (86%), reducing food waste (57%), trying new places (47%), and getting treats (39%). Whereas for people not using it, variety(71%) and ease of use (71%) would be the biggest motivation to start. Additionally we saw that TGTG is not a habit, with most participants using the app rarely (46%) with the most common barriers to use being inconvenient pick-up times (79%) and lack of availability (68%).

**Process Reflections**

The survey helped us understand the context we were exploring better, to understand habits and values related to food. However, the survey had various limitations. The first being that the number of participants was low and had a gender disparity, with most participants identifying with feminine pronouns. Additionally, since the survey was done through inviting contacts to it, there is a chance that diversity within our sample is missing.

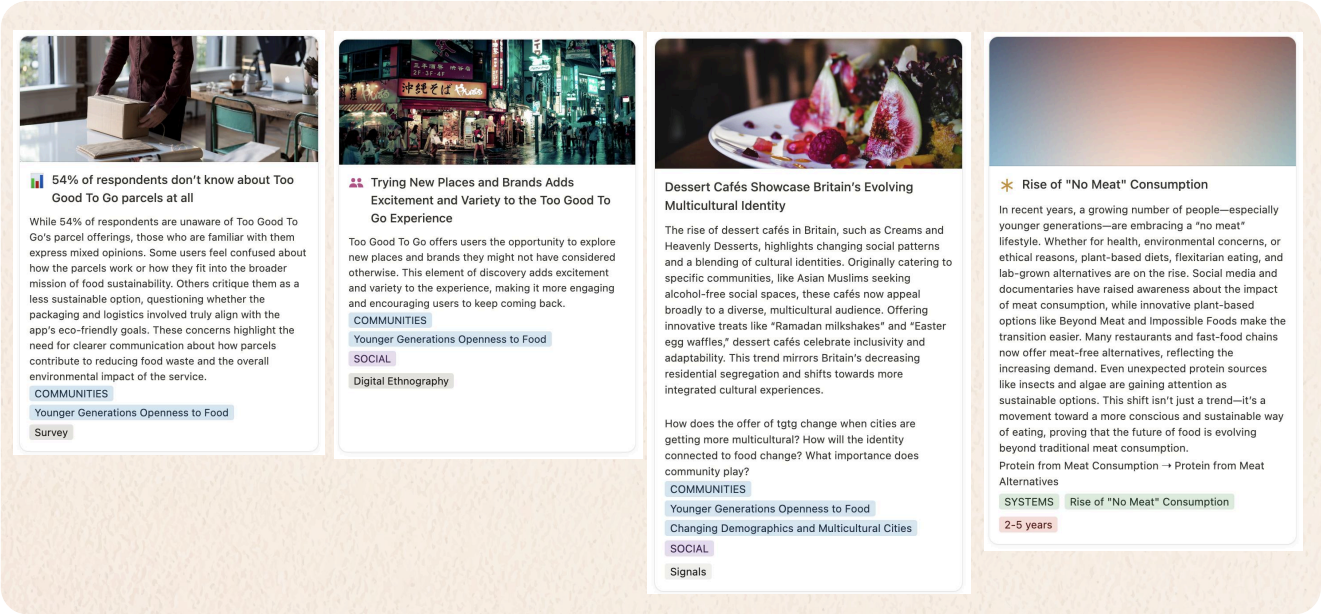


Figure 6: Format Signal cards

## Findings of the case: Key insights

- Consumers see food waste reduction as a concrete action toward sustainability.
- There is a gap between consumers' values and their actual purchasing decisions in sustainable food.
- When asked about their motivation for adopting sustainable food practices, participants often refer to their health.
- Too Good To Go is not a daily habit for most consumers.
- Limited availability and inconvenient pickup times prevent many people from using Too Good To Go more frequently.
- Sustainability is not a main driver to use TGTG, other drivers such as price and surprise are more important for the users.
-

# 4.4.3 Trends

Trends can be defined as ongoing or emerging patterns of change, which can be identified through a sufficient number of manifestations. Trends are constituted by supporting signals, and show a directional shift. Because they have a dynamic nature, they can be bent, shaped or changed over time as they interact with other trends, drivers and events occurring in the environment (Smith & Ashby, 2020; UNDP, 2018). For this project, trends were created inductively by looking into the signals from both Localised Scanning and Horizon Scanning. Through a process of finding patterns, clustering and bringing an understanding of previously talked drivers and existing trends into the creation of our own (Smith & Ashby, 2020). We did this process with the intention of validating the trends during an upcoming Sensemaking workshop, as we wanted to avoid possible biases and open a space for improvement.

For the creation of trends, we used the parts of a trend characterization described by Smith & Ashby with a name, description and contextualisation, support and evidence; but the implications were left blank to be filled during a collaborative session. We created clusters that were then named, with a clear and memorable title. We added a description and context that described what is the change that is occurring with a shift with a direction. Additionally, we used the existing signals as evidence, adding more where it was needed (2020).

During this step, we connected the Localised and Horizon signals, relating the service and user focused research with the externalised one. The addition of the localised scanning was done in a similar nature, but with different intentions. The localised signals were put into clusters as an example of a trend, as an ongoing behavior related to it or challenging it, or as pieces of information to connect back to the TGTG context. At the end, we had twenty different Trends (See appendix 4).

**Process Reflections**

The Signal Scanning process successfully captured a broad spectrum of Trends from the STEEP-V perspective, covering personal, relational, and systemic levels. The research was thorough enough to identify counter-trends and points of tension, moments where developments could take multiple directions. Additionally, integrating localized perspectives strengthened the analysis by illustrating how Trends could interact with current user behaviors. In some instances, local signals served as concrete examples of broader trends, while in others, the trends provided a lens to interrogate localized signals and their evolution over time. In certain cases, localized signals and trends stood in opposition, offering insights into service experiences rather than purely indicating emerging behavioral shifts. An example of this can be two trends that oppose each other, also known as counter trends where “Institutional rise against Sustainability” and “Emerging institutional incentives for food waste reduction & food security” stand against each other. Because of the political nature of these trends, we considered it was important to represent changes in both sides of the spectrum and analyse the tension. This is very relevant at the point we stand right now, because they are pushed from both sides on a systemic level.

However, one challenge in the process was to categorize all signals into trends. Though for the majority of the cases our inductive approach was helpful, in some cases it resulted in trends becoming overly broad and less precise, reducing their clarity and focus. Refining the balance between identifying distinct trends and maintaining specificity would enhance the effectiveness of future signal scanning efforts.This process could have also improved with a more collaborative approach, as its subjective nature can make the results biased towards our personal perceptions, a good practice could be to involve experts earlier in the process.

# 4.2.3 Sensemaking

As the next step, we organized a collaborative Sensemaking Session, a method commonly used in the field of Foresight. According to the UNDP, sensemaking is “an activity and a process that extracts insights, induces learning and creates meaning from experience ” (UNDP, 2022, p. 38). The aim of our workshop was to gain deeper insight into participants’ interests, uncover recurring themes, and explore their interpretations of the information we had gathered, particularly in relation to future implications. This process helped us validate the collected data, develop it further, and refine potential directions for our next steps. We created a space for collaborative reflection, allowing participants to interact with the research findings and make sense of them together. Nine participants joined, through self-selective sampling (Stickdorn et al., 2018) with the addition of TGTG. They all had experience with food, Sustainability, or a connection to TGTG, with an age range from 24 to 60. Most of them did not know each other beforehand. Based on their expertise in these areas, we considered six of them to be experts in the field, as they were people actively working in food waste reduction initiatives or were studying areas of Sustainability, two representatives from TGTG, and one very active TGTG user.

For the workshop preparation, we gathered all the trends and their associated signals from our research (See appendix 4). We then organized them into three thematic clusters: Individuals, Relations, and Systems. These clusters were physically placed in different areas of the room, forming the foundation for each group to work during the session.

## 4.2.3.1 Future Empathy Map

Each of the three participant groups was assigned to one of the thematic clusters. To work with the research, we introduced a key tool in our sensemaking process: the Future Empathy Map (Figure 7), a tool we specifically developed for this workshop. It takes inspiration from Service Design, where Empathy Maps are typically used to understand users’ current experiences, needs, and emotions (Ferreira et al., 2015). In our case, we reimagined the Empathy Map for a future context to better understand how emerging trends might impact different people, using it as a way to think collaboratively about possible implications of trends. By combining Service Design and Foresight in this way, we aimed to make future trends more tangible, by exploring what might happen and how it might feel, look, and affect people’s lives.

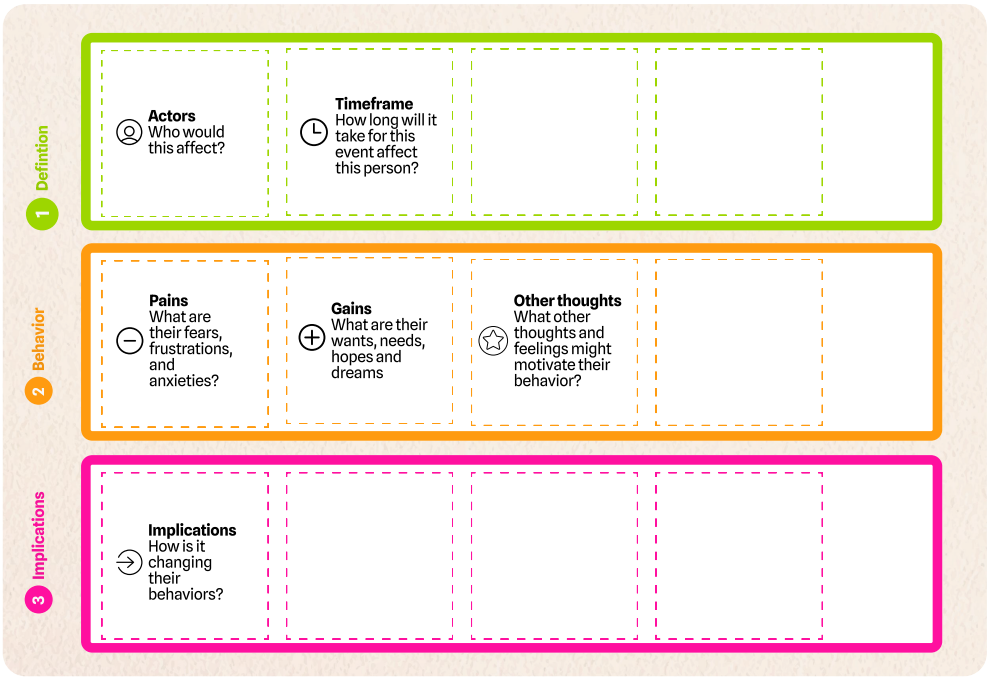


Figure 7: Future Empathy Map

The workshop began with a 20-minute phase in which participants explored the trends and signals associated with their assigned cluster. We encouraged them during that time to familiarize themselves with the findings and to challenge our research if they disagree or add trends they were aware of. Following this, each group had 80 minutes to create one to three Future Empathy Maps, each centered on a specific trend. The structure of the Future Empathy Map was divided into three main components:

1. Definition: Identifying the key actors affected by the trend, along with estimating the timeframe in which the trend might unfold.
2. Thoughts and Feelings: Exploring the emotions of the actors by identifying their pains (such as fears, frustrations, and anxieties), gains (including hopes, needs, and desires), and other significant thoughts or motivations.
3. Implications: Discussing how the trend might influence or change the behavior of the identified actors.



Figure 8: Sensemaking workshop

Each group ultimately chose two key trends and created one Future Empathy Map for each. At the end of the session, they selected the most relevant Future Empathy Map to TGTG and presented it to the other groups, explaining their choice and sharing their findings.
The workshop revealed recurring themes across all groups. Ultimately, they presented “rising health awareness,” “institutional resistance to Sustainability,” and “vanishing food affordability”. Although the topics differed, there was a common focus on personal food choices and their wider impact on individuals, communities, and systems (See Appendix 8).

A key insight was the demand for greater transparency in food labeling, particularly regarding health and Sustainability. However, this came with a sense of fatigue and confusion, emphasizing that information must be clear, and trustworthy. Related to this was a widespread ambiguity around dieting, with participants expressing skepticism toward how “healthy” food is defined and who sets those standards, especially in the context of environmental impact. These two topics resulted in a conversation around the pressure to “do everything right”. Participants expressed feeling overwhelmed by the responsibility placed on consumers, to improve both the world and themselves.

Another concern that emerged was the decline of food affordability, a current pattern they perceive, that is shaping what people can afford and how they engage with food socially. As people reduce dining out or shared meals, multicultural food experiences and community bonds are quietly declining. At the same time, many food decisions are increasingly emotion-driven, with participants describing a cycle of restriction and impulse buying as responses to stress and uncertainty. Together, these findings point to a need for food services that are emotionally supportive, culturally inclusive, and transparent, particularly as affordability continues to shape access and behavior, and helps maintain or rebuild community connections through shared food experiences.

**Process Reflections:**
The division of participants into Individuals, Relations, and Systems groups helped to encourage diverse approaches and identify recurring themes across all groups. The diverse sample, including voices beyond TGTG, resulted in deep discussions and explorations. Furthermore, combining the Empathy Map with a future-oriented approach worked well for understanding implications of trends. A key part of the process was the final presentation of each group, which allowed participants to share and clarify their perspectives, which was crucial for us to get a peak in their work. This was an important step, as it provided information we might have missed during group work. During this stage, we also began to identify the recurring topics that connected the groups.

However, we also identified areas for improvement, particularly in addressing potential biases. At the start of the session, participants were given time to review and challenge our research. Yet, no one questioned it and few contributed additional thoughts. This could be because there wasn’t anything to challenge or the amount of information was overwhelming. This is an area worth exploring further, as design research is never entirely free of bias and therefore important to be challenged from various people and perspectives.

Building on this reflection around the importance of diverse perspectives and inclusivity, additional challenges emerged, particularly for participants without a design background, who found the design language, such as “trends” or “motivations,” difficult to understand. The introduction of a lot of new terminology in a short time made it challenging for everyone to fully align at the start. Even though design workshops and tools are intended to be collaborative, extra effort is needed to simplify language and processes to ensure inclusivity and accessibility for participants from diverse backgrounds. For example, the Future Empathy Map could have been more inclusive by using simplified language.

Beyond the adaptations for inclusivity, the Future Map could have been better designed to support discussions around emotions. A more visual representation of the future user, such as a face, rather than descriptions alone, could have helped as participants had difficulties naming emotions. The emotions expressed tended to be quite negative, and providing a set of pre-defined emotional vocabulary could have offered helpful guidance, but we worried it would restrict them. It would be interesting to refine the Future Empathy Map further, with those critiques in mind, to make it more inclusive and effective.

### Preliminary Findings: Research Question

- One participant in the survey noted that the workshop facilitated a deeper understanding of Sustainability, commenting “There is so much information shared and it was very inspiring to think about so many topics impacting Food Waste. Very Much Impressed”
- Several participants indicated that the workshop helped them comprehend the interconnected nature of Sustainability, suggesting that this broader perspective could potentially drive more sustainable outcomes saying for example “I learned more about different perspectives on Sustainability! I loved thinking about how things are interconnected”.
- The process encouraged participants to adopt a more systemic approach, considering broader consequences. However, despite categorizing topics into Individuals, Relations, and Systems groups, discussions often focused on individual behavior. This highlights the challenge of envisioning large-scale systemic change, even when systemic trends are identified. The emphasis on individual responsibility may limit Sustainability efforts, as systemic changes are equally important. Designers should therefore consider a more systemic approach to effectively incorporate Sustainability into design.
- All Future Empathy Maps referenced anxiety, with a predominance of negative feelings and concerns. Despite including both positive and negative trends, there was a clear tendency towards negative thinking about the future, this is what Mulgan calls an imaginary crisis (2020). This underscores the need for tools that promote more diverse and optimistic future perspectives. However, it's important to consider that the participants were based in Denmark, and cultural factors, along with the current global context, may have influenced this more negative outlook.

### Findings of the case: Key insights

**Information overload & transparency**

- Participants felt overwhelmed by conflicting information about food and health. They mentioned the need for clearer, more transparent communication.
- Many felt it was unfair that individuals carry the burden of making the “right” choices, leading to stress and emotional fatigue

**Food Affordability**

- Rising food prices were a big concern. Emotional factors like impulse buying and buying treats were common responses to stress and uncertainty.
- Loss of Community & Cultural Experiences -> Higher food costs may reduce social dining and multicultural food experiences, contributing to loneliness and weakening community ties

# Project Focus: Narrowing Down

As we learned from the Sensemaking Workshop, two key themes stood out: transparency, the connected pressure of responsibility, and food affordability. As a consequence to those two themes, participants highlighted emotional purchases as a response to this stress and uncertainty. Closely connected to emotional purchases is impulse shopping and treats, which emerged as a potential focus area. Even with tighter budgets and reduced access to luxury, participants expressed a continued desire for small, joyful experiences like buying something tasty or comforting on the go. Additionally, this focus area also traces back to different trends that we had identified on younger populations, the future consumers of TGTG. Trends such as “Emotionally driven food choices” and “Younger Generations openness to food” (See Appendix 4) hint towards a market opportunity, and a new consumer, for TGTG.

We assume that people want to make good choices, even in spontaneous moments, that the tension arises when impulse and convenience seem to contradict long-term values like Sustainability and well-being, and that impulse and treat buying are often negatively perceived, associated with unnecessary, unsustainable choices and often followed by feelings of guilt. We wonder if that perception could shift, and whether impulse purchases could instead be sustainable and feel good. TGTG is well-positioned to tap into this opportunity. The platform could demonstrate that even spontaneous buys can be both budget-friendly and sustainable, helping to ease the pressure many feel to always “do the right thing.” By reducing pressure and simplifying choices, we might support people in acting on their values, without overwhelming them.

This led us to our first How might we (HMW) question, which emerged from this phase of the process:
**How might we embrace impulse purchases and treats that support food waste reduction?**

# How might we embrace impulse purchases and treats that support food waste reduction?

# 4.3 Developing

The Develop phase focused on addressing the HMW question by narrowing the scope of the Exploring phase and guiding us toward a final service concept. This involved Desk research, conducting In-depth interviews, creating Personas, and facilitating a Scenario workshop, ultimately ending in the ideation of Good to Glow, a secret, exclusive experience operating outside the TGTG app. The concept offers limited-edition bags from emerging or cool local spots, complemented by access to secret events.

## 4.3.1 Desk Research

Before conducting further research on impulse buying, we developed a list of hypotheses about what we believe impulse buying is, and what it is not (See appendix 9). This helped us align on an initial definition and develop early theories to test through Desk research and Interviews.

After developing our initial understanding, we conducted Desk research, focusing on secondary research (Stickdorn et al., 2018) to define impulse buying more concretely, adding treats to the definition, and supporting it with relevant references.

Impulse purchases are defined as episodes where “a consumer experiences a sudden, often powerful and persistent urge to buy something immediately” (Rook 1987, p. 191 seen in Iyer et al., 2020). This definition implies that , though sometimes utilitarian, there is a hedonistic component and that there may be external motivators (Iyer et al., 2020). Depending on the definition, impulse purchases can be considered either unplanned or planned (Duarte et al., 2013). For us, treats can be considered a form of impulse purchase, particularly in the context of hedonistic buying, meaning products that are not functional, as they are often also spontaneous or context-driven.

Duarte, Raposo, and Ferraz explore some of the key underlying influences on impulse buying behavior, focusing on both internal and external drivers that trigger such actions:

- Informed consumers: A market segment composed of those who have a high product orientation. Their purchasing decisions are shaped by the perception they have of the company's brand communication.
- Suggestible consumer: A group of consumers who are sensitive to the sales interaction. They are sociable, receptive to advertising, and their purchases often involve the presence of other people, meaning that the presence of friends can increase their desires.
- Marketing vulnerable consumers: This group of people are sensitive to advertising, communication, and promotional techniques. They are sensitive to price, package and care about nutrition.
- Price-conscious consumers: The fourth segment makes up a group of people with strong price orientation. They are also a little sensitive to brands and other stimuli, but they don’t care much about health or nutritional issues.
- Health/Nutrition-conscientious: This cluster is made up of people who care about their health, they evaluate product information, quality and genuineness. They attempt to be healthy, even when impulse purchasing and trust well-known brands (2013).

Furthermore, Deliana et al., takes a closer look at online impulse buying among young people, identifying two strong motivators behind this behavior:

1. Fear of Missing Out (FoMO):
FoMO refers to the fear of missing out on experiences, opportunities, or trends. According to Deliana et al., Generation Z is particularly vulnerable to FoMO, because they are often defined by characteristics, such as being highly influenced by peers, constantly connected to digital platforms, and possessing strong digital intuitiveness.

2. Hedonism:
Generation Z often likes to follow trends and enjoy fun experiences, which shows that they have a hedonistic way of shopping. These two things can shape how young people think about what's normal and what they want to buy. When companies focus on fun, staying trendy, and being part of a group, they can encourage Gen Z to shop online to feel happy, entertained, and connected (2024).

# 4.3.2 Interviews

To explore the potential of impulse and treats buying, we conducted a Pilot Survey and a series of In-depth Interviews, a qualitative research method involving intensive, semi-structured conversations supported by co-creative tools, such as Journey maps (Stickdorn et al., 2018). The interviews had two main goals, first, to understand motivations behind impulse buying, its frequency, and any connections to Sustainability. Second, to generate Personas as a way to visualise the learnings from the interviews and as a tool that would inform the development of a service in a future scenario. These interviews helped us test initial assumptions and provided deeper insight into behaviors, motivations, and opportunities related to impulse buying and treats.

## 4.3.2.1 Pilot Survey

To build the interview guide a pilot survey on Impulse and treat purchasing was done as we wanted to test our initial definition (see Appendix 9). The survey was done on Instagram with three closed questions and two open questions that were shared between our contacts through Instagram Stories (See appendix 10). The pilot survey had 66 participants, 40 of whom were female and 26 male, and no restrictions were considered when defining who would be a part of the research or sampling. The approach to sampling was done in the simplest way, convenience sampling meaning that the responses are not representative (Stickdorn et al., 2018), but it helped us create a better focus for the interview questions and participants. First, it helped us confirm theories like, the time of planning of an impulse purchase, to confirm that people do plan a purchase and still consider it impulsive, as most people plan it through-out the day of purchase (N=25) or week (N=23). Second, understand behaviors, such as the patterns in types of food purchases and the importance of brands when doing impulse and treat buying. This was seen when asked about their last "guilty" food purchase, 44% mentioned a brand of the food consumed. Third, 60% of people go for sweet food when buying impulsively. Lastly, 83% of people buy food impulsively at least once a month.

### 4.3.2.2 In-depth interviews

With the learnings from the pilot survey and the desktop research we continued to design the interviews. During this step we interviewed nine people between the ages of 24 and 45 living in Europe, four men and five women. We used quota sampling to cover different characteristics between the people being interviewed (Stickdorn et al., 2018). The criterias were living situation (alone N=2, partner N=1, single parent N=1, family N=1, roomates N=2, or dormitory N=2), family situation (Have kids N=2, no kids N=7), gender (male =4, female N=5), working situation (Student or part-time worker N=4, full-time worker N=3, self-employed N=1, unemployed N=1) and different ages ranging from 24 to 46. The interviews were both done online (N=4) or in-person (N=5).

For the creation of the In-depth interviews, we developed semi-structured interview questions and two main tools, a journey and four situations, were used to support conversation. The creation of all of these were supported by the desktop research previously done when narrowing down the focus and the pilot survey. For the development of the interview questions we focused on impulse purchasing behaviors, personal perceptions, treats, with a special interest to test if the value of Sustainability or transparency played a role when buying impulsively (See appendix 11).

### 4.3.2.3 Co-Creative Tools

The interview had three sections, general questions on impulse purchases in the food context and values around it, the exploration of the last impulse purchase through a Journey Map (See appendix 12), and the evaluation of situations regarding impulse purchasing behavior types. First, the exploration of a Journey of their last impulse purchase, chosen for its ability to follow a user from the first interaction to the final outcome of a service (Stickdorn et al., 2018). For this step, three interviews involved drawing the journey, two used a digital format, and five relied solely on oral descriptions.

To finalize the interview, four quotes or situations were created to represent different possible impulse scenarios seen in the figure below (See figure 9). They were created by combining learnings from the Pilot Survey and the different clusters proposed by Duarte et al. explored in the desktop research when narrowing down (2013). In the case of cluster 5, instead of a survey finding, a theory was tested out. This cluster focused on people with conscientious behavior when shopping, where the focus on health and nutrition was replaced with Sustainability worries, reflecting back on findings from the Sensemaking where people expressed worries towards Sustainability when purchasing food, and problems around transparency and labeling. Additionally, cluster 2 and 3 were combined into one, as they both addressed buying behaviors because of external influences. For this one, we wanted to explore the buying of treats, as we believed that external influences, such as social media, could push towards more special snacks. Lastly, the importance of food types and brand aligned with cluster 4 from the research, the price-conscious consumer, so we created a brand and price conscious situation (situation 3).

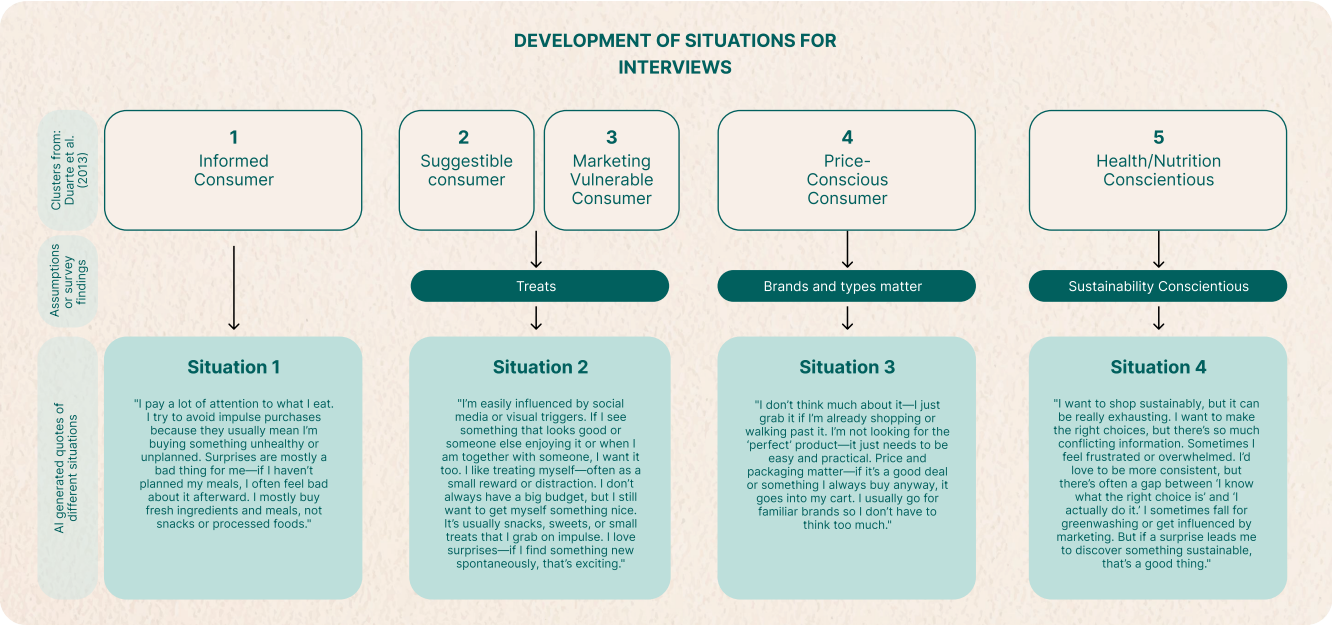


Figure 9: Development of situations for interviews

With the situations, we asked participants to read and comment which parts they identified with, to understand how each of these behaviors can be seen in different profiles. Interestingly, no one identified with situation 4, the Sustainability conscientious impulse buying quote. This aligned with what people mentioned when asked about values when impulse purchasing, were also no-one thought about Sustainability, leading us to believe that when buying impulsively, people don't think about Sustainability.

The interviews were later transcribed and analyzed using the Condens tool (See Appendix 13), where the data was organized into ten thematic categories. These included abstract themes related to our areas of interest, such as values, buying habits, rituals, emotions, convenience, events, or triggers, and concrete themes capturing specific data points like food type, brand, and definitions of impulse purchasing. Through the analysis of these categories we got to the interview findings listed below.

**Process Reflections:**
The use of journeys or stories during the interview to map the last impulse purchase was useful in most cases, as it helped participants remember and allowed us to ask specific questions about each step of the purchase. However, the mediums used to map the journeys were highly inconsistent, with some participants digitally mapping their experiences as customer journeys, others using drawings, and some relying on oral descriptions. Among these methods, drawing was the most helpful, as it allowed participants to engage more freely, reflecting on their purchase journey with greater detail and insight. Drawing offered a balance between freedom and restriction, encouraging participants to visually organize their thoughts while also recalling specific moments of the experience. This medium facilitated reflection, as it required both remembering and actively thinking through the process, in contrast to the more passive nature of verbal descriptions or digital mappings.

### Preliminary Findings: Research Question

- Values of Sustainability or transparency were not present when purchasing impulsively for any of the participants. They sometimes expressed thinking about price or health, but not about Sustainability with people saying things like: “I sometimes think, if it’s what I want, I am paying for my treat the same that I would pay for a full meal of better quality at the canteen at work. But Sustainability, to be truthful, no. It does not play a role there”. Meaning these values are most likely left aside when there is a crave or impulsive behavior occurs.
- Brands, specific products and rituals are bought and practiced frequently by participants, this was visible from the survey but was also confirmed in the interviews with people saying for example “So you are waiting, your turn comes and you start to put [things in the conveyor belt], but of course, the conveyor belt is, it's full. So you have to wait for your products. At this moment I always look at the big Kinder chocolate bar…and I always buy it”.
- There is a “treasure hunt” aspect to impulse buying that is shared with the TGTG experience with some participants expressing this feeling about TGTG like “it's kind of like when you go thrifting… that there's like a kick you get from finding something that's good value.” or “Sometimes when I'm out on the town I'll look if there's a too good to go bag around…like it's determined by fate.” and refer to general impulse buying of food with sentences such as “This is more a place. It's like a playground. Yeah, the supermarket becomes a playground.”
- Treats and impulse buying differ in both the products purchased and the processes behind them, and we aim to work with both concepts. Impulse purchases are typically less planned, with the product being less specific, while treats often involve more planned purchases, where factors like consumption rituals and the type of food play a more significant role. For example, one participant says when talking about treats to celebrate, “it matters in the sense that I want something above the ordinary because it's a celebration”.
- Treats and impulse buying is also an opportunity to try out new things. “I love surprises and if I find something new spontaneously that's exciting. Yeah. When it comes to candy, probably if I see something like a new sort of pastry, I am relatively excited about that. I will want to try it.”.

## 4.3.3 Scenario Workshop

For our upcoming workshop with TGTG, we’ve planned a session to explore various speculative scenarios based on Dator’s four archetypes (1979), and to co-create Journey Maps together (Stickdorn et al., 2018) . The primary objective of the workshop was to gain a deeper understanding of TGTG’s priorities, examine how these priorities would play out across a range of potential future contexts, and have a co-creation experience for a service to help us narrow down to an idea. In preparation for the workshop, we created various components: Contexts, Personas and User Journey templates.

## 4.3.3.1 Scenarios

Design Scenarios, as defined by Manzini, are driven by a clear motivation and are focused on practical steps to achieve a specific outcome. These scenarios are made to address particular design contexts, such as tackling challenges, solving problems, or exploring new opportunities (Manzini et al., 2010). In contrast, Foresight Scenarios aim to prepare for a variety of possible futures. They act as a tool to widen the 'possibility space,' encouraging the exploration of diverse future outcomes rather than fixating on a single scenario (Durance & Godet, 2010; OECD, 2014).

We used our identified Trends and their connected Signals (See appendix 4) to create future scenarios. The idea of alternative futures thinking, as emphasized by Inayatullah, highlights that while we can't predict a specific future with full certainty, focusing on a range of possible futures helps us better prepare for uncertainty (2008). To make these scenarios as realistic and useful as possible, we drew on the Trends and connected Signals to ensure that we were building on relevant data rather than personal ideas. This allowed us to create four distinct scenarios, grounded in the four archetypes from Dator: Continuation, Transformation, Limits and Discipline, and Decline and Collapse (Dator, 2009). Rather than constructing fully developed scenarios, we focused on creating Contexts that paint a broad picture of the future (See Appendix 14). For this reason, we will refer to these Scenarios as 'Contexts' throughout the remainder of the thesis. The goal was to provide a framework without getting too specific about every aspect, such as environmental, social, or value-based details. This approach leaves room for flexibility, ideation, and creative exploration. The intention was to offer TGTG a starting point for further development, to open room for imagination and discussion, not dictate a future.

Developed contexts:

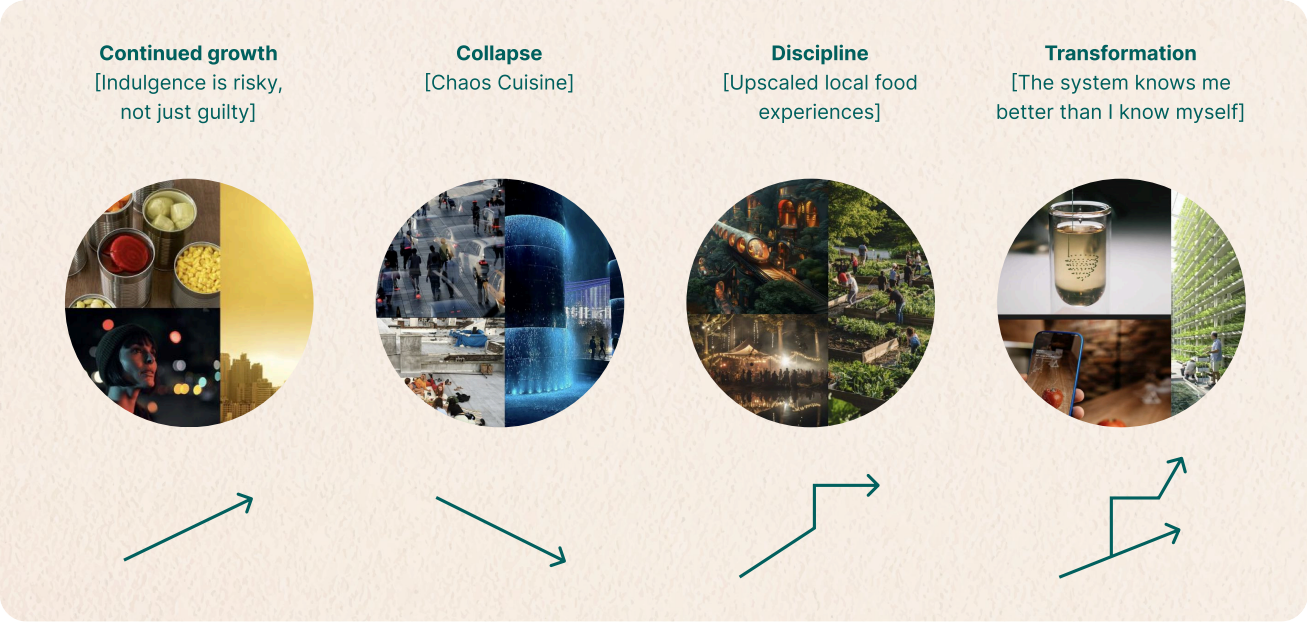


Figure 10: Developed contexts

Figure 10 illustrates the four Contexts we developed, each linked to one of Dator's future archetypes (Dator, 2009). "Indulgence is risky, not just guilty" imagines a future where strict health and environmental regulations make treats feel dangerous rather than enjoyable. "The system knows me better than I know myself" explores a world shaped by personal AI, optimized food systems, and bioengineered meals, where convenience replaces personal choice. Both are highly individualistic.
In contrast, "Chaos Cuisine" shows a future of climate crisis and inequality, where most people survive through sharing, growing, and rescuing food. "Upscaled food experiences" envisions a sustainable, seasonal food culture built on local resources and strong community ties. These two contexts emphasize collective living and support.

To make the Contexts engaging and easier to work with, we gave each one an interesting headline like that captured its essence. The context was written in the first person, presented as a letter, to make it easier for the reader to imagine the future experience of the person living in it. The narratives were generated with the help of AI, to make the writing close to science fiction texts that are short and immersive. Additionally, to help visualize the future, we created mood boards for each context, offering a representation of how each potential future might look or feel. Furthermore, we included characteristics of treats, impulse buying, and potential opportunities and threats within that context to make its consequences more tangible and easier to understand (See appendix 14).

## 4.3.3.2 Personas

Next, we developed four personas based on data gathered from the Pilot survey on impulse shopping, as well as the In-depth interviews and Desk research. The purpose was to give a face to the different motivations and behaviors, helping us better understand the diverse consumer types, and to make it easier for TGTG to work with them in the workshop. Furthermore, the use of personas helped to incorporate emotional and behavioral elements, making the scenarios more relatable to the Contexts for the participants (Fergnani, 2019).

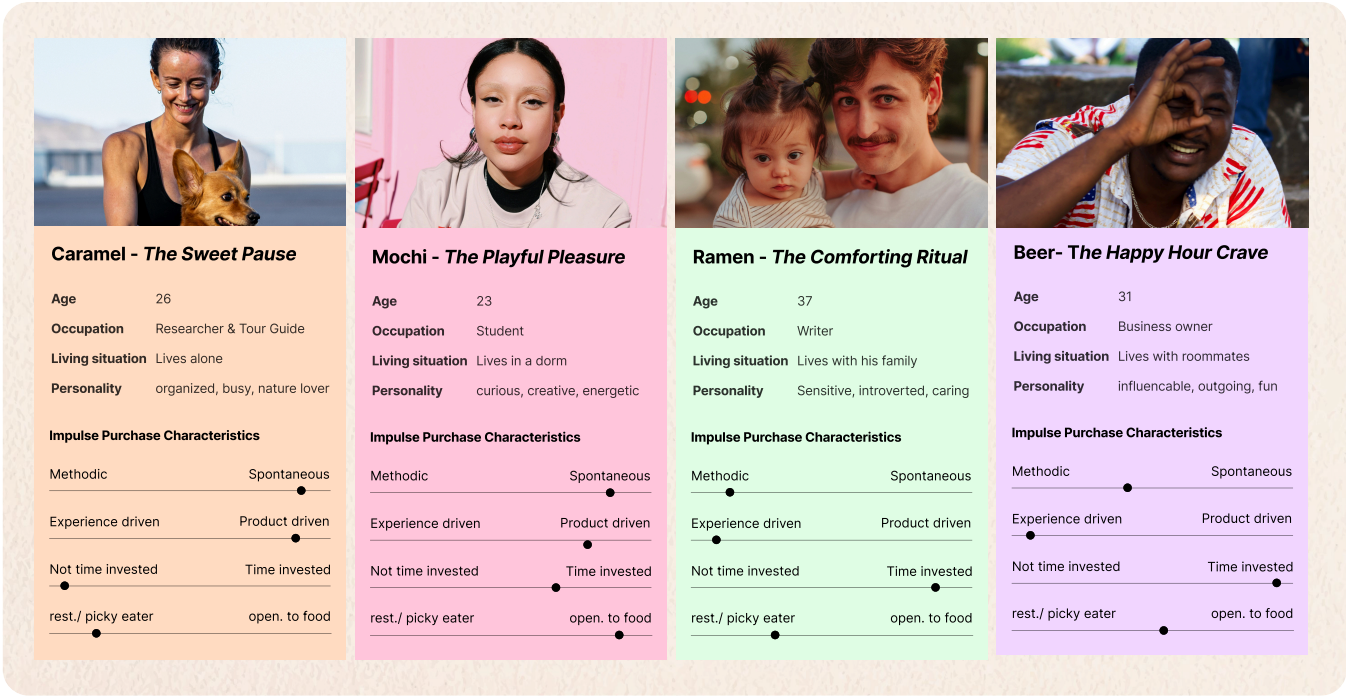


Figure 11: Personas overview

Personas are used in both Design and Foresight methodologies, but they are different. The first key difference lies in the dimension of time, specifically, when the persona is situated. Design personas focus on the present, capturing users' current needs, behaviors, and desires. In contrast, Foresight personas are oriented toward the future. They are built around anticipated needs and expectations, often shaped by the key characteristics of a future scenario and involve a degree of speculation. While Design personas address immediate challenges, Foresight personas explore how users might adapt and behave in evolving contexts over time. The second major difference concerns the nature of interaction. Design personas are typically used to represent specific user interactions within a specific design context. Foresight personas, however, are more exploratory. They illustrate how they interact with a variety of possible futures, offering insight into broader behavioral patterns (Pace et al., 2025).

We used the design persona approach, which focuses on present-day behaviors and needs, summarised in Figure 11 (See Appendix 15). However, during the workshop, we asked TGTG to create a future version of each persona. By placing the present persona in a future context, they were encouraged to rethink the persona's evolving needs and speculate on how this individual might behave in the future. We defined the personas along scales related to impulse purchasing characteristics, such as: Methodical to Spontaneous, Experience-driven to Product-driven, Low time-investment to High time-investment, and Picky eater to Open to food. The personas were named Mochi, Beer, Ramen, and Caramel, with each name reflecting both their personality and a food that reflects their impulse buying and treats behaviors. These fun names, much like the headlines for the scenarios, aimed to make them more engaging to work with during the workshop. We intentionally kept the personas detached from the company, including only emojis to suggest which TGTG bags each persona might use. Beyond that, we did not link the personas to specific motivations for using TGTG or to Sustainability concerns. This decision was made to ensure that the personas would work across all of the scenarios and allow TGTG to explore motivations during the workshop and have the space to change TGTG as much as they wanted.

#### 4.3.3.3 User journey

Finally, we prepared a user journey template for TGTG to complete during the workshop (See appendix 16). This served as a way to bring in principles from Service Design co-creative workshops, a type of workshop in which co-creation of journey maps, system maps, and personas are created. Journeys were chosen because of their ability to show how a customer engages with and feels about a brand, product, or service from the first interaction to the final outcome. The template is structured around key stages: Information Search, Evaluation of Alternatives, Purchase Decision, and Post-Purchase Evaluation. For each stage, the template prompts TGTG to define specific actions, needs and pains, and customer feelings, ensuring exploration of the user's experience throughout the journey (Stickdorn et al., 2018).

#### 4.3.3.4 Workshop

The workshop included three members of the TGTG's design team, two attended in person and collaborated closely, while the third participated remotely and worked independently. We began with a warm-up by asking the question: What if all living beings photosynthesized, and food was no longer necessary for survival? How would this redefine culture, mealtimes, and agriculture? This inspired them to think more imaginatively about how the world could evolve. Their ideas quickly took on a systemic perspective, touching on areas such as fashion, food systems, and religion.

Following this step, we presented the four different contexts and personas we had previously created. Participants were asked to select one context and one persona. The online participant made their selections independently, while the two in-person participants collaborated. While we acknowledge that, in Foresight work, scenarios are typically used to explore alternative futures (Inayatullah, 2008), we made the decision to allow them to pick just one. This was not to narrow the exploration, but rather to better understand their priorities and the reasoning behind their choices. We aimed to use this exercise to gain understanding of their priorities, which would inform how we could create a solution that works for them.

Finally, we introduced the Journey template, inviting participants to think about the Persona's challenges and opportunities within a specific context, and to consider how TGTG could offer a meaningful service in response. They were encouraged to explore the pains TGTG could address and the opportunities for innovation. After that, they worked through the Journey steps, using it to refine and develop their ideas. Finally, the participants presented their scenarios, sharing the solutions they had ideated and developed throughout the session. The two scenarios centered on themes of community and experience, one envisioned a communal dinner, while the other explored an underground service experience (See appendix 16).

This workshop provided insights into TGTG, deepening our understanding of the brand and its users. The main outcome was that it facilitated important discussions on their current audience and future goals. We learned that TGTG's believes their primary user today aligns with the persona Caramel, a structured person who sees TGTG as a quick, transactional stop in her busy day. In contrast, they identified Beer as their aspirational user, a social and fun person who seeks engaging and memorable experiences.

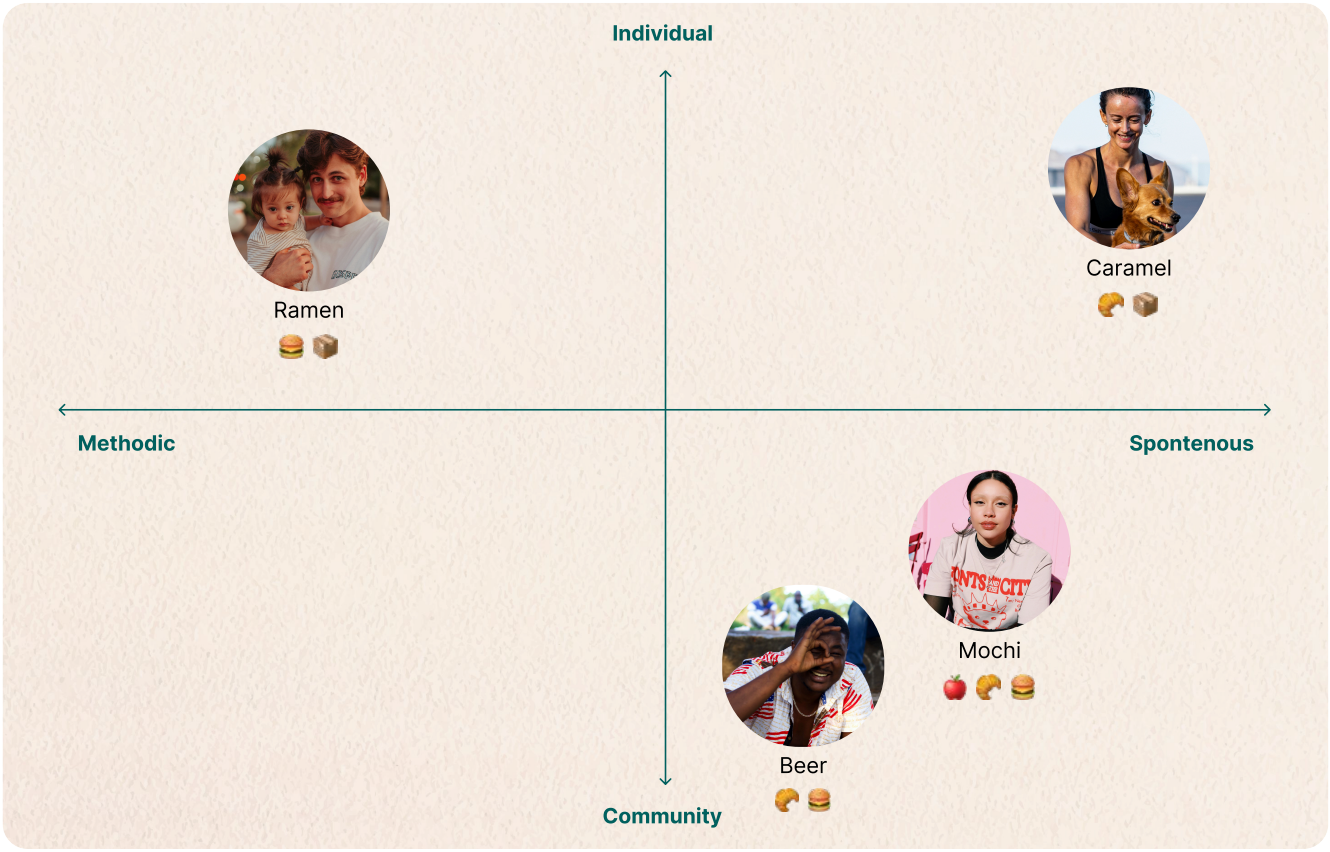


Figure 12: Persona Matrix

As illustrated in Figure 12 TGTG generally targets spontaneous users, since the unpredictable nature of the offers limits planning. Caramel fits well as the core user due to her spontaneous and individualistic approach, matching TGTG's current transactional nature. However, Beer represents the desired user, as he values community and experiences, traits that encourage strong brand loyalty. Targeting users like Beer would help TGTG become a more meaningful part of peoples' daily lives. Additionally, the persona Mochi was mentioned as a possible future user as well, who shares spontaneity and community-focused traits similar to Beer, reinforcing that targeting users with these characteristics could be a strategic goal for TGTG. This insight was a key takeaway from the workshop. TGTG's interest in a more community-based, experience-driven service to better connect with their aspirational persona led us to iterate on our HMW question by adding an experience focus: **How might we create experience driven impulse purchases and treats that support food waste reduction?**

**Process reflection**

Though the Contexts helped bring future and systemic thinking into the workshop, the resulting service concepts are close to the present. Possibly this is because the personas encouraged the participants to focus on current social behaviors. But, there was also value in the way they explored the services, as they managed to solve future needs without turning to technology but to values and social aspects. Meaning that although the ideas could work in the present, they were partly a response to a future need.

The Journey Map helped participants  structure the ideas, providing a clear direction. Whereas the Scenarios triggered valuable discussions that helped us identify TGTG's priorities, such as the interest in continuing in the business to consumer market.

Though the time frame given by the collaborator did not permit for us to explore the underlying trends behind the scenarios, we believe that making these more evident could have been useful for them to understand the relevance of each Context. However, withholding that information helped avoid overwhelming the participants, as the time of the workshop would have not allowed them to analyse all the information.

### Findings of the case: Key insights

- Caramel represents the typical current user, while Beer is the aspirational persona; there was also interest in Mochi.
- Participants expressed a desire for the service to be more experience-driven, moving away from its current transactional nature.
- TGTG aims to evolve into a cool and underground community-driven brand.

### Preliminary Findings: Research Question

- The context prompted participants to think beyond profit, placing a strong emphasis on Sustainability.
- The personas helped them identify and articulate their aspirational user.
- The team chose to let go of their preferred future scenario "Upscaled local food experiences", feeling that TGTG wouldn't be profitable in it. Instead, they selected a future that offered greater potential and fewer obstacles for the company, "The system knows me better than I know myself".
- Sustainability played a key role in shaping the journey. They even explored the idea of using sustainable actions as a form of currency or value exchange.

# How might we create experience driven impulse purchases and treats that support food waste reduction?

# 4.3.4 Ideation

Before starting with the ideation we listed the most important characteristics and themes the final concept should have. The idea has to:

- Have a surprise element to increase brand connection as TGTG expressed in the Scenario workshop and supported by our findings as an important user motivator.
- Create or bring communities together to increase brand connection as highlighted by TGTG.
- Prioritize experience over product, aligning with TGTG's interests and our research findings.
- Facilitate impulse or treat shopping, as we identified in our research.
- Should focus on a business-to-consumer market, as it was expressed in the scenario workshop.
- A service created to attract Beer and that could potentially be interesting for Mochi.
- Target bakeries and restaurants as we found this to match with the aspirational persona, Beer.

With these restrictions in mind, we followed the Crazy 8's ideation exercise, to create some idea drafts, with this tool that is good for outside-the-box problem solving (Knight et al., 2021). The tool consists of creating eight ideas in eight minutes (See Appendix 17). But, to make sure we included the main learnings we had from our research and had time to discuss the restrictions, we didn't follow the time limits of the tool.

From the tool, we realised that the eight ideas fell into two major clusters, the first being themed bags, such as "mood bags", and the second one being a secret or exclusive service within the TGTG space, such as a "pop-up member events" or a "TGTG hidden menu experience". After evaluating them we went with the secret or exclusive service idea as it had a bigger community aspect to it and it responded more to Beer's persona. Additionally, the themed bags cluster was more product oriented, contradicting the restriction of experience oriented ideas.

After having an initial concept we tried to define it further, thinking of four different approaches the secret or exclusive service could have and testing those out in the four
Contexts to make sure we chose the most future-proof idea (See Appendix 18). This was very helpful to understand which applications of the secret or exclusive service had more value. For example, we realised that special edition collaborations with influencers wouldn't work in all futures. To be concrete, when analysing this idea in the "The system knows me better than I know myself" context, the traditional advertising of influencers wouldn't work the same way. Because in this Context of technological transformation, artificial intelligence assists food choices to an extent in which an influencer would have no effect on a person's consumption, making advertising a business directly from brand to technology company with no consumers needing to be involved in-between.

The final concept we went with after testing is the creation of a secret service that provides access to some special offers and events. For this "club" we intended to start finding the local Beer's that we considered to be real-life influencers to their friend groups. Finding the "cool" people in the city to make this a space desirable for the aspirational consumer of TGTG. These real-life influencers could invite people from their circle, to create a closed community of engaged individuals.

As a part of the ideation, we made an AI Beer chat, where we could create texts in Beer voice. This was useful for example, to create the following text where Beer explains the service:

“Alright, here’s the thing, but don´t tell anyone I told you about this. Too Good To Go has this secret side most people don’t even know about. It’s invite-only, kinda underground, and once you’re in, you’re in. There are surprise drops like limited-edition bags from cool or new spots— but you gotta move fast, they disappear quickly. Then there’s The Glow… lowkey events, brunches, hidden hangouts with great food, great people, zero waste, and zero boring vibes. You don’t always know where or when, but if you are quick you can get a ticket and even bring a friend. Some of the members get handpicked by TGTG, others find their way in through this wild Reddit treasure hunt with hidden invite codes, and the rest have been invited to an event by someone else and get in that way. Either way, once you're in, everything tastes better.”

For this idea we had some references that inspired us:

- Secret Menus: We were inspired by the popularity of “secret menus” or unofficial customizations where customers modify standard items by adding ingredients or combining options and its growth through user-generated content shared online. In response, some restaurants and cafés have adopted these creations or created their own, offering off-menu items that are available by request, but not publicly listed.
- Pokemon Go: This AR videogame captured the world by creating enough expectation and novelty in the interaction. As rare Pokémon would appear at specific locations for limited periods, generating a sense of urgency and encouraging spontaneous gatherings. Creating a sense of localised focus, community, and urgency, as people came together to try to “catch them all”.
- Tipster: This Copenhagen-based food and beverage service employs exclusivity and scarcity by offering a limited number of curated items, which are removed from the site once sold out. The model reinforces anticipation and demand, aligning product availability with temporal and social value. This service also allows brands to create discounted packs or experiences without risking their brand perception, as the trace of a sale disappears once it's sold-out.
- Berlin party scene: The service concept draws inspiration from Berlin’s rave culture, particularly its emphasis on exclusivity and community. Key elements such as password-only entry, secret locations, and a no-phone policy informed the design, creating a sense of intimacy, trust, and shared experience among participants.

### Findings of the case: Key insights

- Good to Glow introduces TGTG the opportunity to engage with a new audience, through a secret service with a community and exclusivity component.
- For the development of this service we will focus on the exploration of exclusive offers and secret events.
- The idea explores the value of mystery that TGTG has, but upscaling it into an experience driven service.

### 4.3.4.1 Motivation Matrix

To further develop the idea we created a motivation matrix, a tool to map multidirectional synergies between the stakeholders (Manzini et al., 2010). For this tool we used the main stakeholders of the service; Beer, TGTG, and the secret collaborators. This helped us test if the service concept would work, and if everyone involved had enough motivations to join in. We found motivations for everyone involved, which could signify that the service would be an opportunity for all those involved.

Although the test was mostly successful, we identified a weaker point in attracting new collaborators, as their motivations mostly mirrored those for joining TGTG. Which led us to think further on how to motivate new businesses. We considered that other businesses might also be interested in reaching people who actively engage with communities and connect deeply with brands, such as Beer, which could be valuable for brands whose values align with TGTG. Additionally, we thought that keeping their collaboration secret or sporadic could encourage some brands to participate more willingly. On the one hand, particularly those that are more protective of their image or prefer not to offer many discounts, and on the other hand, those that would not be able to collaborate routinely with TGTG.

### 4.3.4.2 Journey Exploration

Also, to further develop the idea, we created sketches of journeys as a way to explore the step-by-steps of the service (See appendix 19). We started by creating a journey for the core of Good to Glow, the secret bag experience. This experience works outside of the TGTG app, using simple touchpoints such as text messages, emails, payment services, and codes. This was intended to build an out-of-the-system experience for participants and also to maintain secrecy and exclusivity. The first journey represents an ideal journey of a bag.

The second journey explores how the Good to Glow event would occur and the build-up to it. The exploration of the events is focused on building mystery and exclusivity. Through which we found the possibility of having the events in secret locations, sending passwords to the users to join, and creating a system in which participants can take a friend that would ultimately become a member too. There is not much focus on the event itself, as it would vary depending on the collaborator.

Lastly, the third exploration is a journey to follow an alternative way of being invited to the Good to Glow service. Considering TGTG's active following online, we thought that this could be a platform to find followers for Good to Glow, where people don't necessarily depend on being invited to get an invitation. This alternative invite also has a mystery focus and a localised focus. Limited invitations would be placed in collaborators' businesses, and people can find them, probably through Reddit. We believe this way of being invited has a lot of potential, as it would be a service that could match with our other persona Mochi.

**Findings of the case: Key insights**

- The service idea is a secret, invite-only experience, called Good to Glow, featuring limited-edition food drops and exclusive events. The access to it is limited, with members joining through hidden codes, personal invites, or being handpicked by TGTG, to create an outside of the system community with secret experiences.

**Preliminary Findings: Research Question**

- Future testing our initial ideas with the Contexts helped as a way to include future implications in the ideation process. We found some environmental aspects to be challenges, but mostly economic and political changes.
- We found it difficult to keep using Foresight tools after the context testing of the idea.
- After this moment, we also stopped purposefully considering Sustainability. Though the idea has a Sustainability goal, to make impulse buying and treats more sustainable by default.

# 4.4 Creating

The “Creating” phase represents the final stage of the design case. In this phase, the focus shifts to bringing the service idea to life by making it as tangible and detailed as possible. This involves refining the concept through testing and iterating based on feedback. Additionally, the final solution is mapped out to ensure it is understandable and ready for implementation.

## 4.4.1 User Testing

It was crucial to test our service idea in a real-life setting to determine how people would feel when using it to identify any aspects that might need improvement before developing a detailed solution and mapping it out.

In general, there are two main approaches to prototyping, prototyping to evaluate and prototyping to present. In our case, the goal was to evaluate the concept. We aimed to understand how participants would feel about the service, not just what they thought. To truly capture emotional responses and user experience, it was essential for participants to experience the service firsthand. To do this, we created an “experience prototype” which is a test that closely simulates the actual service. For this testing we focused on the invitation process, and a possible event service. We didn’t simulate the bag service as it was not feasible to create a realistic experience prototype for it. Instead, we created a concept video as an “imagine-like prototype”, a way of testing by helping users visualize and imagine the bag service experience, rather than interacting with the service idea directly. This allowed us to present the idea and gather feedback, helping us understand how people perceived this part of the service (Stickdorn et al., 2018).

For the testing, we did convenience sampling with some components of quota sampling (Stickdorn et al., 2018), as we invited our friends but selected those we think are close to the aspirational persona of Beer or Mochi and those who are TGTG users. We invited ten people, from which eight showed up. The ages ranged from 21 to 32 and we had a big gender disparity, with two men and six women joining.

### 4.4.1.1 Invitation

For the invitation testing, we set up a WhatsApp group with our selected friends, naming it “Good to Glow,” to mimic the service environment, the “Beer” AI voice helped us create some invitations that would set the mood for the event we also intentionally created a mysterious message were information such as location were omited. We specifically wanted to test how people would respond to the mystery and exclusivity:

“Heyyy, you’ve officially been handpicked for the Good to Glow Club! 🌟
We're hosting a secret event on May 11th, and you’ve got the chance reserve your spot. Just send me a message. But be quick — spaces are super limited and glowing away fast!”

Once five participants confirmed their assistance, we expelled the remaining members from the group and sent a congratulations message for those who stayed. To simulate exclusion and observe their reactions, particularly whether they experienced a FoMo, we sent a message to those who didn’t make it, rejecting them from the event and asking about their feelings connected to it. Some participants expressed FoMo, for example one participant wrote: “But now I have FoMo because this sounds so cool, whatever it is”. But some other participants didn't really understand what was happening. This was a limitation of the medium used, as WhatsApp would not send any notifications when being expelled from a group. After receiving some feedback about the feelings, we reinvited everyone to the event, so they could play a part in the testing.

As the event approached, we sent a reminder two days before to reveal the location. The message was the following:

🌙✨ Glow Alert! ✨🌙
Hey you ✨ chosen one ✨ — just a heads-up that the Good to Glow secret event is happening in 2 days! 🎉

📅 When: May 11th, 11 am
📍 Where: Holtegade 10, look for the green door 🟢🤫
🔑 Password at the door: “Let it glow” (yes, whispering it dramatically is encouraged 😉)

You can expect good vibes, tasty food, and a time you’ll not forget 🍽️🎶
You’re on the inside now. Get ready to glow, legend. 💥

## 4.4.1.2 Experience Prototype

For the testing, we bought food from TGTG and set up beautifully decorated outdoor tables to create a special atmosphere. The event followed the theme of “glow” with candles for a brunch garden party (See Figure 13).

Figure 13: Good to glow brunch garden party

We designed the testing experience with several key steps:

1. **The arrival:** When arriving, participants had to say the secret password to gain access. Once they did, they received a wristband and were welcomed with a mimosa. To start the event, we gave a brief speech to introduce them to the event, and set the tone. Each person was given a plate with a candle and a sign that read “Let It Glow.” Together, we lit the candles as a fun, interactive activity to create a sense of community and make the testing differ from a “hang-out”. The arrival also helped to build on the sense of exclusivity that would later be discussed.
2. **Picture time:** To add a more personal touch and make the experience even more memorable, we provided a Polaroid camera and encouraged participants to take pictures throughout the event. We believed this would make the event feel more special, with physical photos serving as tangible memories rather than just digital ones. Besides being an activity during the event, the Polaroid pictures were used as a measurable behavior, as they are limited in amount, to see if participants would consider the party worthy of taking special pictures (See Figure 14).
3. **Breakfast:** We shared food with the intention of seeing if the TGTG food would be perceived any differently when put into a special event and presented accordingly.
4. **Group questions:** We asked participants a series of questions about our service to gather feedback, which we will reflect on in the following section. To wrap up, we showed the exclusive offers video and we collected additional feedback on it as well.

In general we consider the invitation to the testing a success and that the mysterious nature of it helped attract participants. Eight out of ten people we invited attended, the two remaining were either not in the city or had friends visiting. Given that most of the participants were two weeks from delivering their thesis, we consider the turnout a strong sign of interest. One participant even asked to bring another guest with them, which even though it wasn't planned, hinted towards the organic growth of a community that creating events can generate.

Figure 14: Polaroid pictures

For the arrival, most participants except for two (that had to look it up) remembered the password and all went along with the role playing, following instructions and receiving the wristband before getting in. They also later expressed not knowing what to expect from the event as a good thing, and feeling excited when coming in.

For the pictures, we used them all and though there was some initial resistance of participants asking for permission to use it. Two participants wanted to keep the images as a memory, three shared pictures of the experience in social media, and another one asked to get pictures of the polaroids to remember by. This behavior leads us to think that they considered the memories to be special enough to be shared and cherished.

For the breakfast, participants ate most of the food and we believe that they thought it was special. One participant even shared that they would like to chip in for the food, as they thought it looked like a very expensive breakfast; when it was mostly TGTG bags and discounted fruit. Proving our idea that just changing the presentation and context of a meal can change the perception of it.

For the group questions and general reflections, different aspects of the service came up, but there was a generally positive response to the service and for many a strong interest in it. For the event experience, mystery played an important role in creating excitement and encouraging people to join. However, exclusivity was not seen as necessary. On the other hand, when it comes to the offerings, exclusivity played an important role and too much mystery was perceived as a negative thing. Additionally, when it came to the offers, there needed to be a balance between how much they would be willing to “detour” from their day and how special it is, where the more special the bag the more they are willing to make an effort.

We also managed to check how feasible it is to have a service like this one for a company. One participant, who asked for them and the company to be kept anonymous, shared that because of their high engagement with a streaming platform they are now a part of a secret program runned by a major streaming platform. As a part of this program, they sometimes get early access to films and are even paid to review content. This valuable information showed us that similar services already are in place, even if most people don't know about them and validates that our idea aligns with current real-world practices. What was most interesting about this was how to make this service useful for the company itself, in this case as a way to reward the most engaged users and is used as a way to test out new products with their community. Knowing this opened up new questions about the Good to Glow, such as, should members be asked to keep it a secret? How did they get invited (by email, notification, etc)? And are there any other benefits users can receive? Though these questions were useful for the process, not all of them could be addressed in our service proposal, but we think that if this service were to exist they could all be included in it.

Lastly, finding the service invitation or offers through a puzzle was mentioned by the participants. Though we hadn't shared our idea of a Reddit treasure hunt invitation, they were highly interested in a component like this one for the service, which provided initial validation for this concept.

**Process Reflections**

Because of limited resources, we tested the concept with friends rather than strangers. This wasn't ideal, since friends may have joined partly out of support or just to socialize. Still, inviting strangers wasn't realistic at this stage, as the event was not real and we don't yet have a well-known brand like TGTG. Additionally, testing with our friends could create some external pressure for them to be less critical of what we present, as we are creating a double relationship with them.

It is also important to be critical to the fact that most of the participants, except for one, were all Service Design students. This has the benefit that they are also experts in the field, potentially opening the space for more complex reflections. But it also means that other perspectives are excluded from the testing, the testing of services with Service Designers can create a silo of thinking where other perceptions are not included.

Lastly, the use of WhatsApp was not the best tool, as it made some participants not understand the process of invitation, which was very important for our testing. As some of them couldn't follow the process of exclusion, the feeling of exclusivity or FoMo could not fully be tested.

## Findings of the case: Key insights

**Event Service:**

- Mystery is a key element as it builds excitement and drives participation.
- Exclusivity is not necessary for the event to be appealing.
- The event service should not be offered too frequently, maybe every 2–3 months is ideal to keep it special.
- A "plus-one" option is essential, as most participants are unlikely to attend a mystery event alone.
- Small activities make the event more special and unique
- There could be a focus on events that are connected to the specific city/country or celebrations to make the service more local.
- The Reddit treasure hunt idea could be interesting as a way to get in the service.

**Special Bags Service:**

- Exclusivity is important to create perceived value and attract interest.
- The bag service can occur as often as available
- Mystery is not useful here, it can create confusion and reduce convenience.
- Offers can be shared with others if the quantity is large and the pickup location is nearby.
- Convenience is critical, location-based offers could help ensure relevance and usability.
- There needs to be a balance between how much effort it takes to get an offer and how special it is.
- Some companies already run similar programs, offering early access or perks to select users.
- This model could also be used to test partnership quality, by having selected users try offerings in advance.

## Preliminary Findings: Research Question

At this stage of the project, we found that combining Service Design with Foresight was more difficult. Additionally, Sustainability no longer emerged as a central theme in our work. There could be several reasons for this shift. One possible explanation is that discussions around Sustainability tend to decrease when Service Design and Foresight are not integrated.

From the beginning, we understood that the main motivations for users of TGTG are primarily low prices and the appeal of trying something new, rather than environmental concerns. This could help explain why Sustainability did not play a prominent role in the development of our own solution.

# 4.4.2 Expert testing

The second testing was done with a Sustainability expert, to assure that beyond meeting users' needs, we also ensure that our service can actually be sustainable at the same time.
As an expert, we invited a design researcher from the Service Design lab at Aalborg University, who has over five years of experience in food waste.

For this testing, we first gave a brief summary of the TGTG brief, our research question, and our process milestones. Then, we introduced her to our personas Beer and Mochi, gave a short overview of our service idea, and explained possible ways to get access. This enabled her to give us feedback on our service, focused on Sustainability, rather than getting detailed feedback on the user experience of our service.

To present our service to the expert, we used the exclusive offers concept video for the exclusive offers from the User testing. Additionally, to introduce the secret events, tested during user testing through an "experience prototype", we created a separate secret event concept video. This allowed us to conduct the expert testing using an "imagine-like prototype" (Stickdorn et al., 2018).

As evaluation we asked following question:

- From your perspective, does the idea of a "secret food club" support or conflict with long-term food waste reduction goals?
- Could making food rescue feel exclusive or "cool" help change perceptions of surplus food?
- How can we make sure the emotional pull (excitement, surprise, community) leads to lasting food-saving behavior, not just a fun moment?
- How do we make sure that the Sustainability aspect is still responsible or transparent?
- Our target users don't care much about Sustainability, they care about saving money, food and trying out new things. Is that okay?

**Feedback about Sustainability**
Overall, she expressed her enthusiasm for our service idea and believed this could significantly contribute to achieving greater Sustainability. During the evaluation, we confirmed that making Sustainability the default choice can be effective, even if users' motivations aren't inherently sustainable. With her sharing this is important because it could support a shift from a small group of environmentally conscious individuals to Sustainability  becoming a default for a larger group. The expert agreed that focusing on impulse shopping is beneficial since it's a common behavior and often unsustainable. Moreover, she mentioned that changing the perception of food waste, as something cool, could have a positive impact. She suggested that attractive presentation and eco-friendly packaging could enhance this appeal.

**Feedback about our Service idea**
When sharing our treasure hunting on Reddit to gain entry into the "Good to Glow" club concept, she proposed the idea of a "golden ticket," similar to the one in "Charlie and the Chocolate Factory," which could be hidden in bags. This, along with our concept of a treasure hunt, would create an exciting experience encouraging brand engagement and additional purchase. She also highlighted the importance of carefully selecting event attendees to create a cool and exclusive atmosphere, which she thought could especially align to Copenhagen's culture. Additionally, she suggested that events could take the form of an annual festival where all new members are welcomed for the year.

Lastly, she mentioned that TGTG could collaborate with local Sustainability companies. While we found that this could have the potential to broaden TGTG's sustainable actions and business model, we decided not to develop this further, because of limited time and resources.

### Findings of the case: Key insights

- Our service is sustainable, even if people don’t care about Sustainability.
- Secret events should only happen once a year, but they could be bigger, and promoted as a festival.
- Offline methods to access the club, such as a ‘golden ticket’, could be engaging and generate more purchases.
- Developing the Service idea further, collaborations with already sustainable businesses could be considered

# 4.4.3 Final Delivery

To finalise our service idea we explored different visualisations and Service Design tools, first, to test out the final details of the service, and second, to prepare a pitch presentation for TGTG.

## 4.4.3.1 Journeys

To analyse the user's experience from beginning to end (Stickdorn et al., 2018), we created two journeys, one the core experience of Good to Glow, the exclusive offers, and another one to explore the events, as an important component for new members to join the secret service. This exercise was very helpful to go through every touchpoint to discuss the best option for them, and to understand where the value and positive emotions of the experience lay.

The first journey we did (See Figure 15), explores the exclusive offers, the core experience of the service. In this case the journey is a probe of Beer’s experience getting some pizza offers from a special pizzeria that he will share with his friends for a Saturday night wine and art dinner he is planning. For this journey we focused on the key events in the timeline, the emotions, and Beer’s thoughts. Since this is a more individual experience, we thought that exploring his thoughts could serve as a way to analyse his motivations while still exploring the social interactions that are a crucial part of the service.

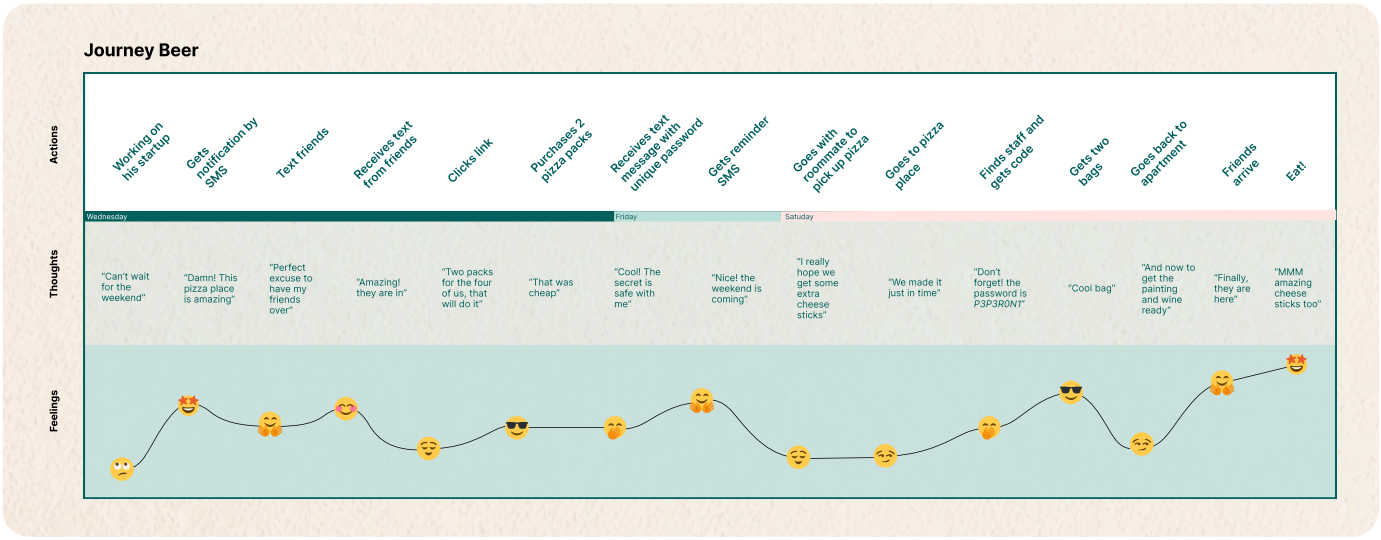


Figure 15: User journey Beer

This journey helped us re-evaluate if Good to Glow should be a part of the TGTG app, or if it should stay separated. We believed that the text messages (SMS) made the service feel more mysterious, a characteristic we found was interesting for participants from the user testing, but at the point of purchasing and pick-up the lack of it could create a challenge.

We also discussed the notice time the offers could have, the service could rely on weekends as moments to create more offers, as people tend to be more social and have more time for picking up offers during this time. This moment of the week could be a potential time span in which Good to Glow could work often. We also think this moment has benefits for the local collaborators because of the high offer that could potentially generate more food waste and the possible break on Sundays or Mondays, that can be a time in which food can spoil.

However, we also think that having short notice offers could be interesting for the audience too and tap into more unplanned and emotional impulse purchases. Because of the logistical challenges this would entail, we considered that TGTG could do “fake” short notice drops to build up hype and encourage impulse buying even more.

The second Journey (See Figure 16) explores Mochi’s experience, the other persona that TGTG showed interest in (See appendix 15). She could interact with Beer, as a way to explore someone getting introduced to the service through being invited to the events. For this journey we focused on the key moments of the event timeline, the emotions, and Beer's and Mochi’s interaction through what they say, since the goal of this journey was to explore the interaction of inviting a new member into the service.

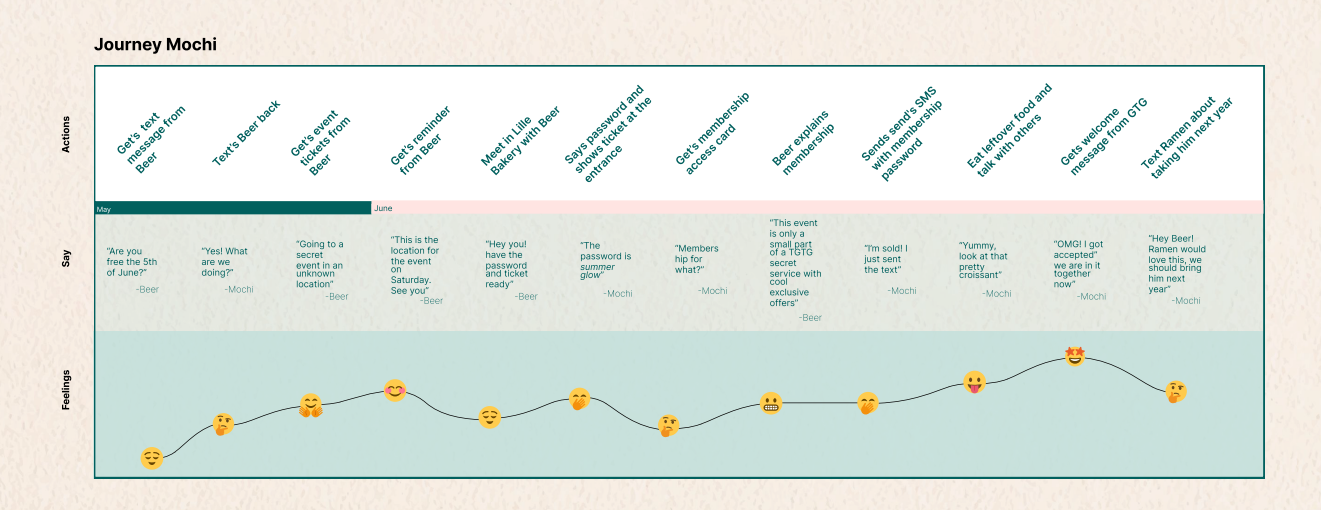


Figure 16: User journey Mochi

This Journey helped us think about how members could share their secret experience with others, and how the mystery is a key in the communication of the events. It also helped us test out the experience with our other persona and prove that the service could also work for her.

# 4.4.3.2 Blueprint

Blueprint was first introduced by Shostack, who emphasizes that modelling the service elements serves as a way to examine the structure of each element, preventing the failure of services that are often communicated orally (1982). We wanted to develop this tool to further explore the storylines analysed with the journeys, and believe that this could help us explore the backstage and frontstage further.

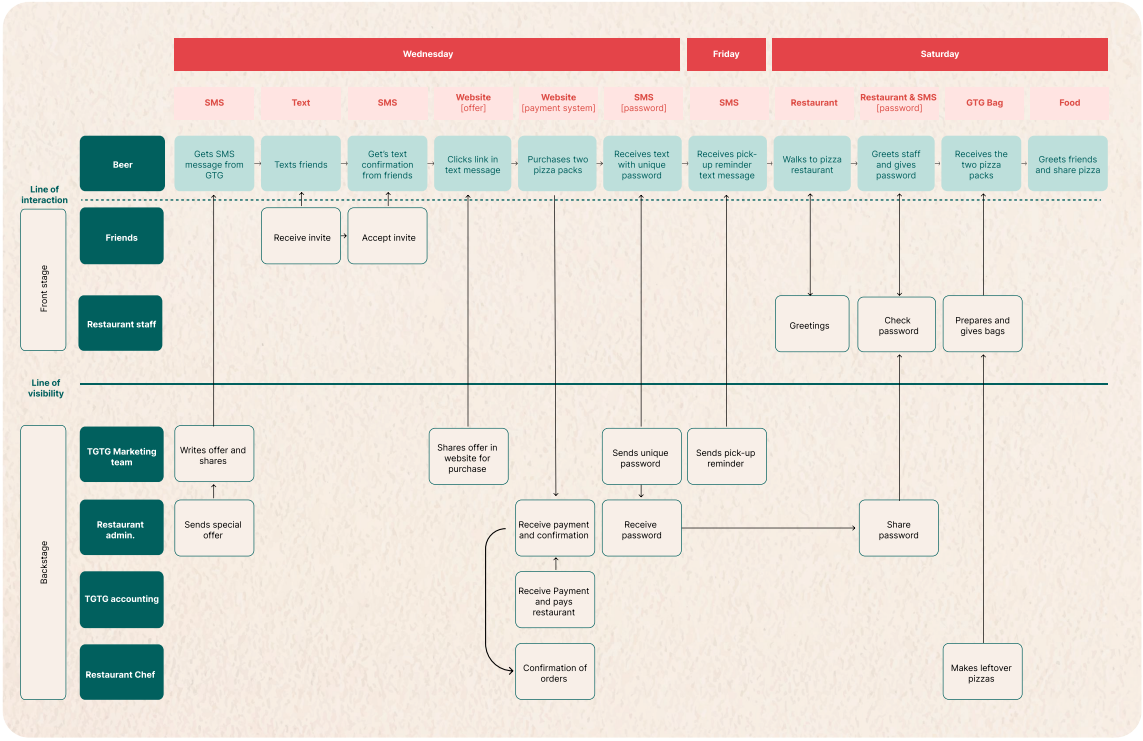


Figure 17: Blueprint Beer

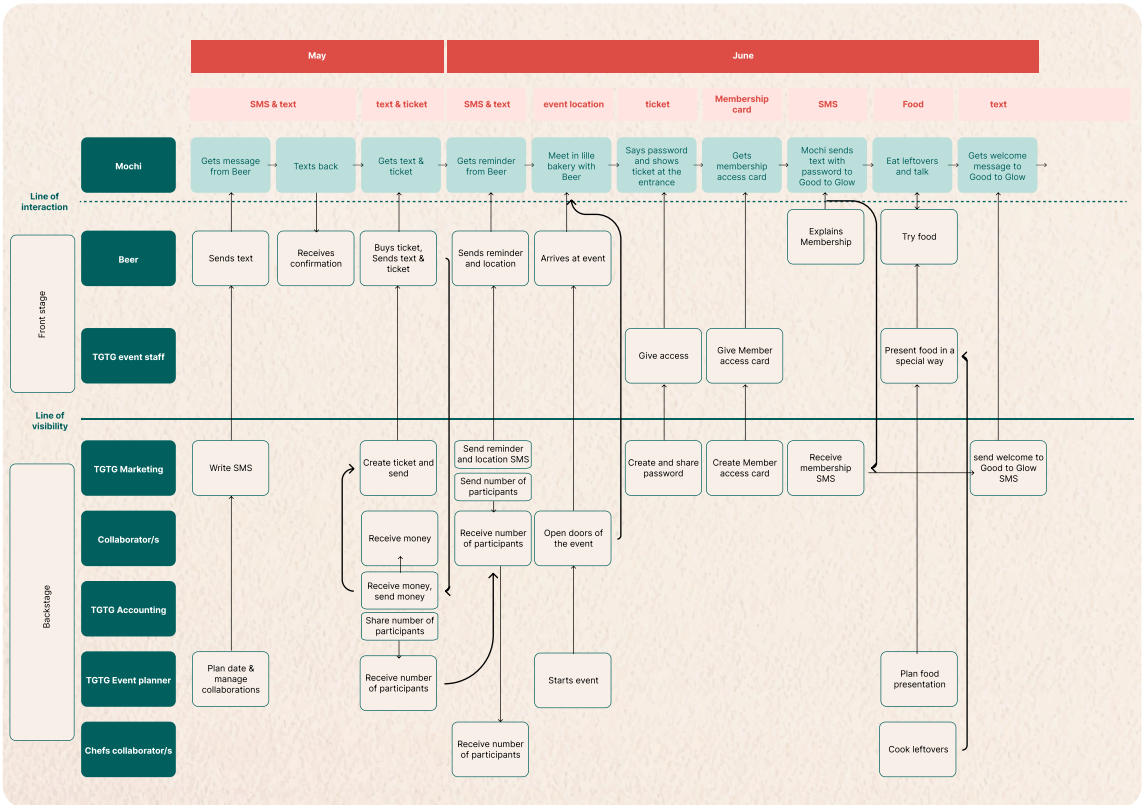


Figure 18: Blueprint Mochi

Both blueprints (See Figure 17 and figure 18) helped us confirm that the communication channels that the service should use are, SMS with the user and a website or purchasing system, and for the other stakeholders emails and texts. We came to this conclusion since part of the motivation for different collaborators to join this service is the flexibility of offers. Offering an opportunity that is different to the current app that is designed for recurrent offers, but does not work for those businesses that are not recurrent.

The Blueprints confirmed that the exclusive offers need less resources than the secret events, as planning events would require extra resources from TGTG. This validated the decision of hosting it once a year. Additionally, having these events annually, could help understanding the amount of people that would be able to get exclusive offers and delimitate the market.

### 4.4.3.3 Motivation Matrix

During the Develop phase, for the ideation, we had made an initial Motivation Matrix (see appendix 19), which had helped us understand the value of the service for the core stakeholders. This new Motivation Matrix includes all the learnings from the testings, and from the previous visualisations (See figure 19). This previous Motivation Matrix had helped us see a weak spot in the motivations for the collaborator to join, but by reducing the amount of work for the collaborator and creating alternative channels, we believe that the value is more clear as the effort is lower. Additionally, from the User Testing we learned the importance of the mystery for the user, which was added into this new visualisation. The value of mystery is something that TGTG could profit from.

| | GOOD TO GO | BEER [User] | SECRET COLLABORATOR |
|---|---|---|---|
| **GOOD TO GO** | • Appeal to aspirational user.<br>• Brand connection and community engagement.<br>• Explore mystery motivation for users further. | • Treats/impulsive purchases.<br>• New community.<br>• Feeling exclusivity and excitement.<br>• Out of the system experiences. | • Green perception and brand connection.<br>• Potential new users.<br>• Exclusivity.<br>• $ |
| **BEER** [User] | • Brand perception become "cooler".<br>• New users (as they bring +1's to the community).<br>• $ | • Meeting with friends and new people.<br>• Save money.<br>• Being a part of a think-alike community. | • Potential new users.<br>• Waste reduction.<br>• Extra purchases in events or at pick-up. |
| **SECRET COLLABORATOR** | • Makes them cool.<br>• Adds novelty to the TGTG experience.<br>• Increased price perception. | • Nice food.<br>• Trying out new places.<br>• Hang-out spots. | • Being green by reducing food waste.<br>• Active community involved (real-life influencers).<br>• Low effort. |

Figure 19: Motivation Matrix

## 4.4.3.4 Stakeholders Maps

Lastly, we developed a stakeholder map for the current service of TGTG and the Good to Glow service idea. We used this map, as it represents the stakeholders involved in the system (Stickdorn et al., 2018). We chose to do one for the current service and one for our proposal to specifically visualise how many extra stakeholders or touchpoints our proposal would need.

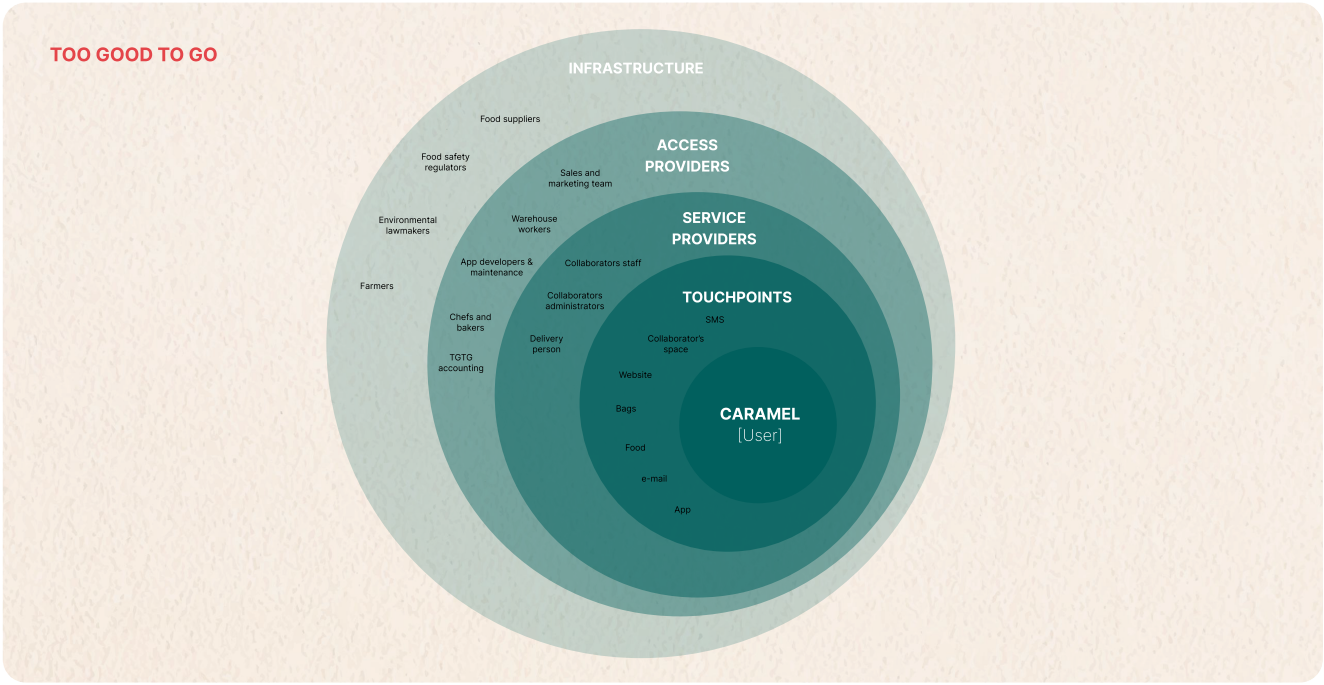


Figure 20: Stakeholders Map - TGTG

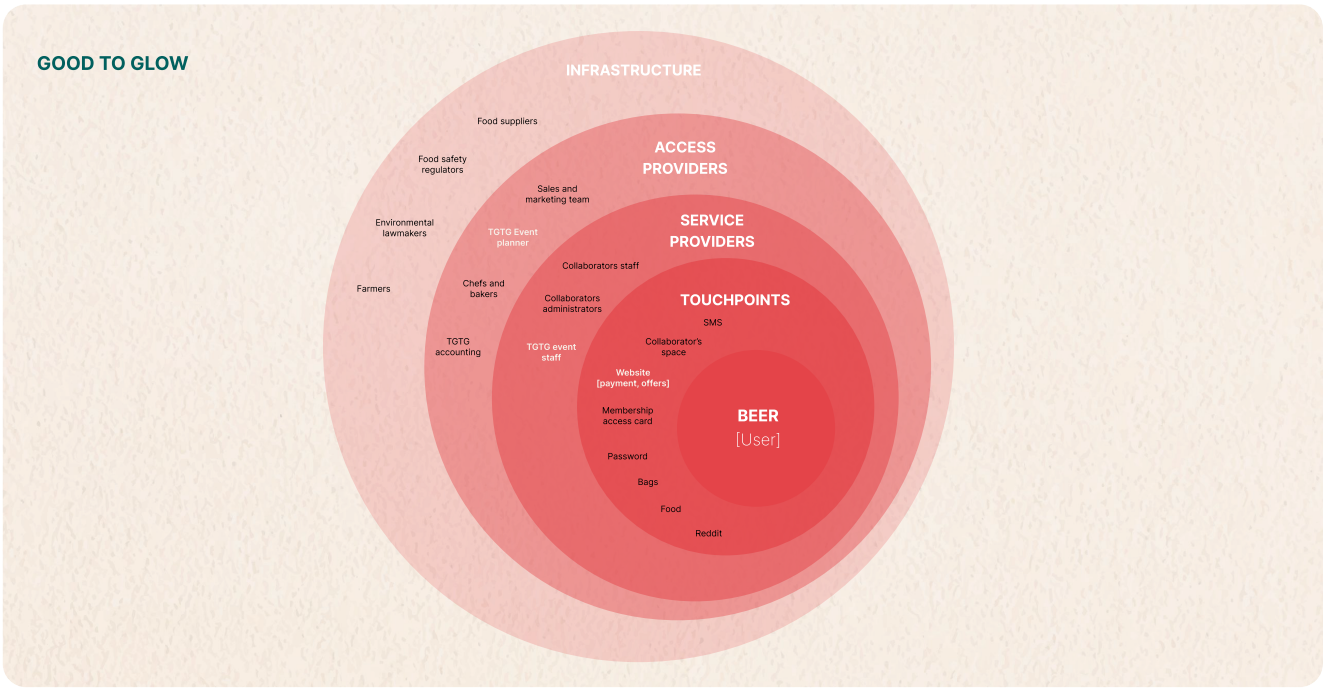


Figure 21: Stakeholders Map - Good to Glow

In comparing Figure 20 and figure 21 it is visible that few extra stakeholders or touchpoints are needed, as seen in Figure 21 with the white highlights. As a touchpoint, the Good to Glow service would only need a separate website. From the stakeholders, two extra would be needed for the events, the experience that requires more effort. The few extra stakeholders and touchpoints needed hint that this service could successfully be integrated into TGTG.

# 4.4.3.5 Service Structure

To communicate this service clearly we created two visuals that explain how to get in the service (Figure 22) and its components (Figure 23). These last visualisations would be key in the communication to the client for a future pitch.

Figure 22 represents the amount of people that are expected to join from each of the possibilities to get into the service. It is expected that half of the people getting into the service are invited by members, as a way to ensure community and create organic growth. This could mean that the work TGTG has to put in the community growth could be reduced year by year, as the system allows for a natural growth that can be controlled by the low recurrence of the events.

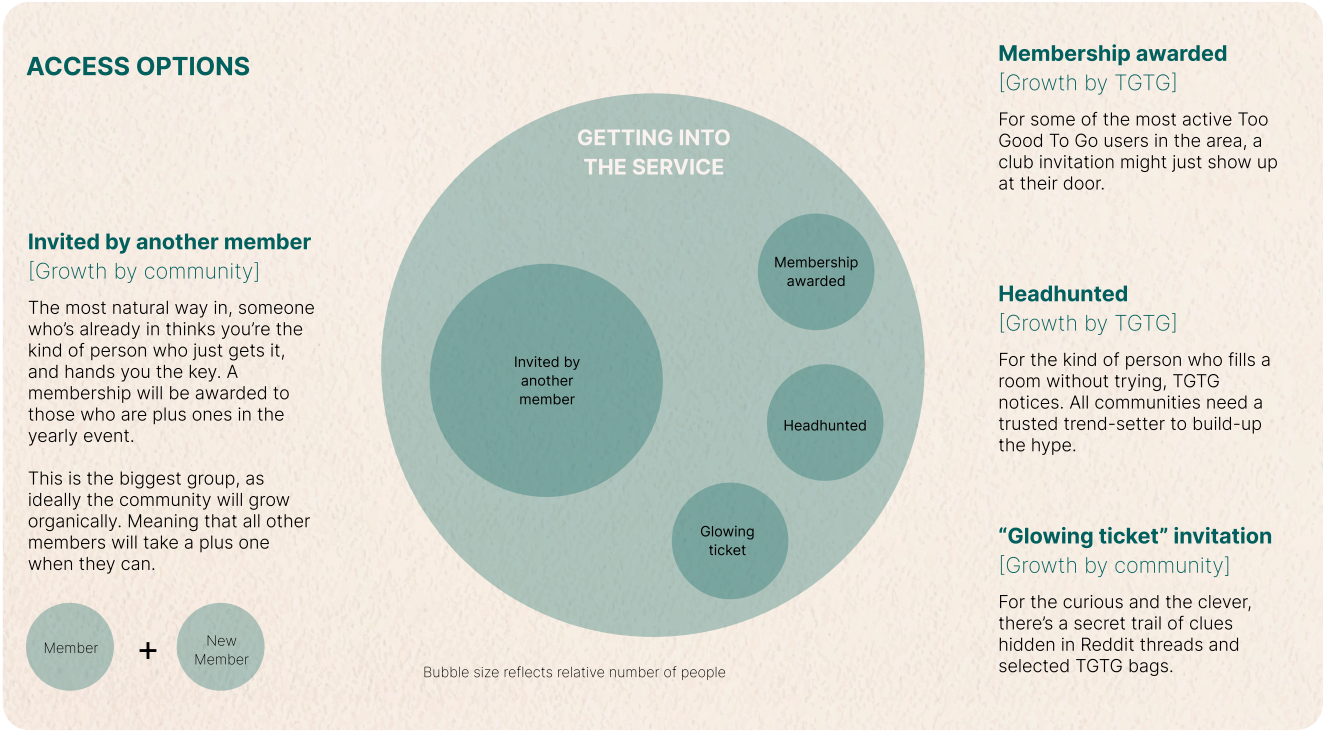


Figure 22: Access options

The second visual (Figure 23) offers two descriptions, one of the secret event and one of the exclusive offers. The visual shows the recurrence of the experience with the size of the bubbles.

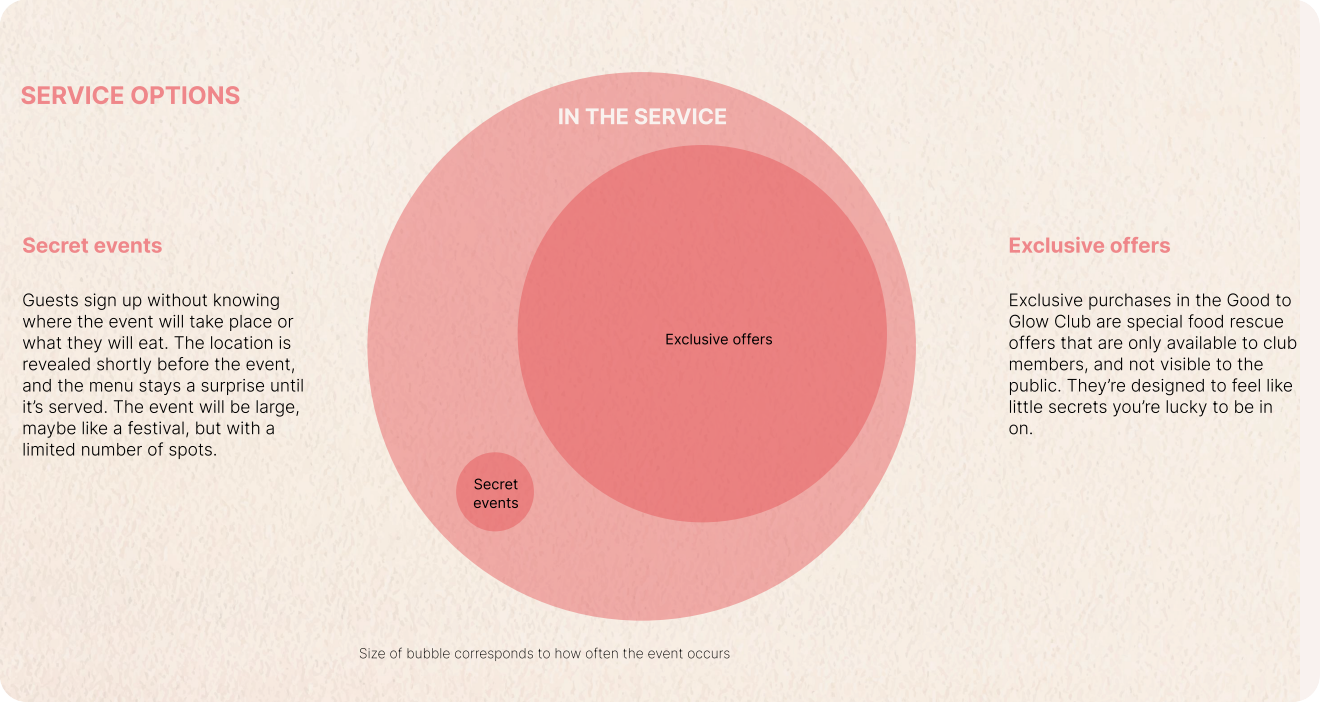


Figure 23: Service options

### Preliminary Findings: Research Question

During the final delivery, we did not include any specific Foresight tools or visualisations in the outcome. This failure to include them limits the extent to which the final concept can create further reflections on our research question, particularly in terms of how future-oriented thinking can help the end of a design process. We could have done a futures wheel to explore future implications of the idea (Bishop & Hines, 2012).

## 4.4.4 Pitch

Although we weren't able to present our concept to TGTG before the thesis deadline, because of scheduling changes, we still plan to do so afterwards. We expect to use this meeting for a presentation prototype (Stickdorn et al., 2018). We will reuse our video prototypes, the exclusive offers concept video and the secret event concept video, which were first made for testing. Additionally, we prepared a presentation using visuals from the Deliver phase of the project to pitch our idea to TGTG to help us explain the service idea in a visual and detailed way. Furthermore, we are curious to talk about the idea together, and ask for their thoughts and see if the idea resonates with them.

# 5. Discussion

The discussion reflects on how combining Strategic Foresight and Service Design influenced the design process and its outcomes. Reflecting on the design process through the analysing participation, and simplicity of tools. Discussing the results of our research question, reflecting on the potential of systemic thinking through the combination of Foresight and Service Design, the value of structure Foresight brings into Service Design processes, and the limitations. Also, we reflect on the official and personal learning goals.

The chapter is structured around the following sections:

5.1 Reflection on our Design Process
5.2 Reflections on our Research Question
5.3 Reflection on Learning Objectives

# 5.1 Reflection on our Design Process

## 5.1.1 On participants and relations

As part of our design process we successfully managed to engage participants that had no knowledge of Service Design or Foresight for a workshop, our sensemaking. This was a success, as during previous projects we had had many limitations when trying to participate with people outside the design sphere. Though this experience was mostly positive, it did bring a challenge in terms of the design tools and language. We found ourselves using terms such as “pains”, “trends”, or even “feelings” which people had trouble understanding within the context. We also found there were challenges understanding the process itself of creating a Future Empathy Map. It became more evident when within a group there was a person with design knowledge, such as the TGTG collaborators, and someone without, and the tools were especially excluding those people outside of academia. One participant even shared at the end of this workshop that they had trouble following some steps as they are neurodivergent. This made us realize that Design collaboration, as it is currently framed, is not fully accessible yet as it gives more power to those people within design, and those highly educated. Participation in the fields of both Foresight and Service Design are still biased towards those highly educated, neurotypical, design professionals, and creating spaces for collaboration takes intentional effort for inclusion, one could say they need to be decolonised.

Though with some extra explanations and more intentional facilitation we overpassed those challenges, it did make us realise that we could have changed some instructions and language to make it more easy to understand. We failed to see our own biases, where words and knowledge that now seems simple for us, may not be for others. After studying Service Design our way of thinking and perceiving problems has changed, so we need to start making intentional efforts to get out of this “bubble” to understand other perspectives and create for them, not for us.

Though we managed to work with people outside of design, looking back to the process we believe we fell into some biases because of lack of diversity in the participants. Even though we managed to work with people outside of the field in some cases, in many others we had a predominantly homogenic sample and often sampled by convenience. For instance, though our focus age was 20 to 45, we failed to have people over fourty in our testing, and had few in the interviews and survey participants. This age bias may have affected the process and path our way into a solution that works very well for young people, but may not be that suitable for the older part of our focus age.

We also learned the importance of building a close relationship with a client or collaborator, but the risks of having a single perspective from them. During the process we worked mostly with the same people from TGTG. This gave them the opportunity to follow the process closely, helping them understand our approach to the process and build a close collaboration. Working jointly with the same team also helped us understand their goals and interests, which we adopted in our project to bring more value to them. But, this also meant that we only had the perspective of the user research team, which in some points of the project came to be a challenge. To be concise, this limitation affected the results of our workshops with them, as they focused on the user only, having limited insights of other goals of the company, regarding other stakeholders or processes within TGTG. For example, we felt this limitation when doing the STEEP-V (See appendix 2), as many of the areas in the framework had perspectives of the user but not many from other stakeholders or even regarding emerging events on the area of food waste.

## 5.1.2 On the power of simple tools

During the process we found a lot of value in giving people a paper and a pen, this is a simple tool that helped us create spaces for expression and exploration with participants. Sometimes, for wanting to create something more specific we fail to see the power of simple tools like a piece of paper. This was the case for example, when doing in-depth interviews, where some participants explored a journey of impulse purchase as a part of the interview by drawing, while others did it digitally, and others only orally. This was one of the moments when we saw the potential of letting people explore their experiences by drawing, and how helpful it is to have a visual representation to ask further questions. We saw this along our participatory workshops, once participants get comfortable, giving them the opportunity to share their ideas and thoughts through paper has an amazing potential.

Storytelling tools were other tools that created a lot of value in our process, such as the use of Contexts, personas, and videos. Using narratives to create a vision of the future, a service, or a character, helped us imagine different possibilities and implications. This tool, highly used in Foresight, is also present in Service Design processes, but the combination of these disciplines, has the potential of expanding during more steps. Such, can be the use of Contexts during ideation to future-proof concepts, through the exploration of implications. This, even though it is not a defined tool, it helped us imagine implications of our ideas in the future and the world around them. Having a simple story or background to place an idea can help us see how it would play out. Another way this can go is with personas, they helped us think of how stories and situations would play-out around a character. Having the personality traits to the aspirational persona, Beer, helped us create the story around him, what he would say or do. For this, AI also helped us, as we found it to be very effective in creating a voice that matches a personality.

# 5.2 Reflections on our Research Question

## 5.2.1 On the Systemic Approach

Repeatedly through our process we found that the combination of Foresight and Service Design has complementary abilities that can help the process be more systemic, giving access to more perspectives. We agree with findings from Peruccon & Simeone as we found that the external perspectives that Foresight brings combined with the localised ones that Service Design has were helpful throughout the process (2023). Foresight helped us understand the world of Food Waste, the emerging patterns, the implications of changes in it and how those may affect the future, whereas Service Design helped us bring those patterns into the life of potential users to understand how they may feel, how behaviors may change, and how to create something that aligns with a preferred future. By using broad long-term future visions and bringing them into the near-future implementation of services we were able to think more critically and consider Sustainability both through environmental shifts and immediate user-needs (Løgager et al., 2022).

One of the reasons is how Foresight allows for the visualisation of patterns across the research landscape, where the same event or shift can be explored through different areas. Concretely, the STEEP-V was very useful as It helped us have different views of Sustainability, where in technology we saw many advances, in politics we found an institutional rise against Sustainability, and socially a very concerned young user. The understanding of the spectrum made our research findings more robust, as they are supported by our own research and reflect bigger patterns in the world, creating a deeper level of understanding.

Service Design helped Foresight findings be translated into feelings or user behaviors. In concrete, this could be seen when using combined  Service Design and Foresight findings. For example, in the Sensemaking workshop, participants had both Signals from Horizon Scanning and Localised Scanning in their section. Particularly, in the Relations group, participants chose to work with the trend of “Vanishing Food Affordability” to explore its implications through the Future Empathy Map, focusing on how economic insecurity is visualised in diets. Their user consumed treats out of emotional frustration and as a reward in difficult times. This situation, highlights both the chosen trend and some of the localised signals they had in their section, such as “TGTG as a companion for treats in economic distress” and “Access to Luxury Food at a Lower Price Makes Sustainable Eating More Attractive”.

Also, using Foresight for Sustainability related storytelling, creates a mindset that helps keep in consideration systemic environmental concerns when co-creating a service. This was the case in our Scenario Workshop, where participants expressed that having a Context that focused on environmental, social and economical effects of food waste, helped consider Sustainability constantly when creating a Journey Map for a service. The externalised perspective of a future Context was helpful for the TGTG team to think beyond profit and try to create value for Sustainability.

## 5.2.2 On Structured Processes

The structured nature of Foresight research helped create a more controlled Design process, which was found to be very important when working with an abstract concept like Sustainability. This helped maintain Sustainability in focus, and because of Foresight, making it an integral part of the design process (Floyd & Zubevich, 2010).

The value in using Foresight as a part of the process was visible from the start, since the Framing phase it helped us create a more thorough research focus, pushing to cover all areas of scope, reducing biases. This step is usually not a part of the Service Design process as the Double Diamond does not include it as a phase or activity within their framework (Design Council, 2015). Adding this simple step to a Design process when working with Sustainability can help create stronger results.

The structured approach that Foresight brings to the process extended to the research, where using Signal Scanning was even more effective and systemic than the usual desk research in a traditional Service Design process. Additionally, the format of a Signal of change (Dufva, 2019) helped create a structured way of writing, to make different pieces of information comparable and combinable, making it an effective way of communication within the research and with other collaborators. By using this structure for both Horizon Scanning and Service Design findings we created a deep interaction between all of our research.

Lastly, the tool of Future Archetypes (Dator, 2009) helped us imagine alternative futures for Sustainability (Neuhoff et al., 2022). Working with four different explorations, none of which are fully utopian or dystopian worked as a creative exercise that helped us understand different possible implications and question what each path could bring for the future of food waste. During this step we managed to think outside the present economical and political system, helping us visualise change from different dimensions. For example, when exploring the transformational archetype Context, “The system knows me better than I know myself” (See appendix 14), we wanted to create a future where the problem of food waste was solved, but quickly realised that to get to a point with no food waste there has to be a lot of personal sacrifice, food choices and personal preference can’t exist in a future with no food waste.

## 5.2.3 On Limitations for Sustainability

There are still limitations to consider in the combination of Foresight and Service Design for Sustainability. As Service Design has been created to respond to the current economic system (Vink, 2019), making it a tool for capitalism; and Foresight falls short in the perspectives it brings, as it mostly follows a dominant, western, epistemology and it’s still mostly expert based (Bisht, 2020). This creates a limitation, when working in areas that need systemic change and affect mostly those that are not represented by the dominant epistemology. We believe our process fell short in the inclusion of different perspectives outside current dominant logics, and Foresight and Service Design may need an additional component to work effectively towards Sustainability.

As Sustainability is a systemic problem and an abstract concept, there is a need for plurality in its exploration. Within the research we found limitations in the two disciplines. One big limitation from a Foresight perspective was the high reliance on desk research and secondary sources for the Horizon Scanning, as the biases within academia and the media are replicated in our Foresight research, as there is a higher concentration of dominant perspectives over those that are not. On the Service Design side, participants are often asked to empathise or take the role of another user, which we did in various occasions, as with the Future Empathy Map and the use of Videos in the testings.

This creates a filtered voice, where the representation of these other individuals is processed first by those present in the room. Both disciplines have this limitation, where plurality and diversity still comes from dominant systems, often creating filtered perspectives, keeping the perspectives within the system.

Lastly, there is a big limitation when working with Sustainability with a business, as profit will always be an underlying premise for its existence and will have to be prioritised over values of Sustainability. We saw this play a role in the Scenario Workshop, as participants were asked to choose a context, TGTG had trouble, as they said their ideal Context would be the discipline archetype “Upscaled local food experiences” but that they didn’t think TGTG would be profitable in that space. Resulting on them prioritising choosing the transformation archetype “The system knows me better than I know myself”. This hints towards a limitation Foresight and Service Design face when working on Sustainability, that there is no way out of the system when collaborating with companies. The amount of change that can be expected from within is limited, as it must at least maintain the existing economic model, (Vink, 2019) reducing the amount of actions that can occur towards Sustainability.

In addition, we realised that Service Design tools are created to work within that system. For example, Journey Maps, often following the steps of the template we used for the Scenario workshop (See appendix 16). The journeys are based on purchasing behavior, making money an underlying value behind the journey as a whole. From the start we understood that working inside the system had limitations, we are also believers that change must come from within, but echoing Vink, design is also unwilling to change the system (2019) and clients benefit from the system, so, can we even expect to make a change?

# 5.3 Reflection on Learning Objectives

## 5.3.1 Official learning objectives

First, this project was an opportunity to further explore and improve the knowledge we had built during the Master's and let us dive deeper into our specific areas of interest, such as Foresight and Sustainability. We believe that we took on a big challenge, as we decided to work with an external collaborator and with Sustainability, which is an abstract term that encompasses many different areas. Also, we took on the exploration of a research gap, addressing the lack of real-world cases combining Foresight and Service Design (Løgager et al., 2022). From the start, this tested our abilities as Service Designers with the collaborator, as we took the role of the experts and expected to be able to challenge their thinking and create something valuable. Also, it pushed us to further explore literature in Service Design that was specific for the small intersection we wanted to work with.

This brought a lot of value, especially as we were able to explore another discipline, expanding our expertise into Foresight too. The knowledge we gained helped us build capabilities to be critical and work in more creative ways. By understanding deeply the discipline of Service Design, we were able to change, combine, and even create new tools that will hopefully bring value to other designers.

This takes us to our second reflection, which is the skill to be able to understand when and how to use different tools in a Service Design process and sense when it is necessary to change or create new tools. This was especially visible in our workshop designs, where we independently developed workshops with different research goals throughout the stages of our process.

Third, the thesis was also an opportunity to develop competencies we believe are important for our profession as designers. From the beginning, we knew we wanted to work collaboratively, this meant that we would have to create and facilitate workshops ourselves, engage people, and learn how to manage stakeholders and clients. This was a particularly successful learning area, as in our previous projects we had found it to be difficult to engage with people, especially those who are not students, which many times led us to work with classmates as participants for a lack of more appropriate people to participate. Contrary to our previous experiences, we managed to work with many people outside of our class. This effort culminated in the Sensemaking workshop, where we had nine participants joining, from which only one was a part of our class. These workshops especially felt closer to a real-life challenge, as we learned a lot from how to facilitate.

It was also important for us to learn how to work with a client and manage stakeholders. From the start, this meant sending a plan of workshops for the whole semester to them, meaning that from the beginning of the project we needed to know at what point of the process we would need expert collaboration, for what and for how long. This was helpful in pushing us to keep the process collaborative, as having set dates for meetings with TGTG helped us constantly have in mind how their participation could help our process. This recurring collaboration also meant that we needed to balance the findings and interests of TGTG, other stakeholders, and ours. Luckily we always found a way to balance different needs and interests.

## 5.3.2 Personal learning objectives

For our personal learning objectives, our perspective on Sustainability was further developed. We learned about the emerging landscape of food waste, and how it is interconnected with every other aspect of the human system. It also helped us see other emerging issues within Sustainability that need attention, such as polarisation, institutional retraction from Sustainability, and climate anxiety in younger generations. This was not surprising but it did increase our motivation to keep working within this field, as it cuts across all aspects of human experience and can be worked with from many different perspectives. Our sense of urgency and motivation for justice was only accentuated from a deeper understanding of the field.

As a preparation for our future profession, this experience was highly valuable. We successfully developed a Service Design process with a client, developing skills to creatively independently create projects and combine our two main areas of interest. This project helped us gain the knowledge and confidence to work with clients and apply our learnings from the Masters into real-world problems.

# 6. Conclusion

# 6. Conclusion

## 6.1 Key Findings on the Research Question

This thesis explored how the integration of Foresight and Service Design can help embed Sustainability more deeply into the design practice. The research was carried out through a design case in collaboration with TGTG, a company that focuses on reducing food waste through a digital platform. The project investigated how Foresight and Service Design tools could be combined to create services that are focused on present contextual findings and respond to emerging societal shifts.

The design process followed a four-phase structure divided by the phases of Framing, Exploring, Developing, and Creating, which were inspired by the Double Diamond model and the Thinking About the Future framework. Throughout the phases we combined tools from both disciplines, such as STEEP-V analysis, Horizon Scanning and Localised Scanning, Scenarios and Personas, in order to balance the externalised perspective from Strategic Foresight with localized insights from Service Design.

Through this process, several key findings emerged. First, the combination of Foresight and Service Design bring complementary strengths that help to have a more systemic approach to Sustainability. Foresight helped us understand the broader world of food waste, the emerging behaviors and events, and shifting patterns, while Service Design brought the research close to the context translating those patterns to a personal level. Through the combination of both perspectives, we created deeper findings that respond to the TGTG system and the broader landscape of food waste.
Introducing a Framing phase inspired by Foresight helped us define the challenge more clearly and avoid early bias. Through adopting an approach that uses tools that intentionally frame a project systematically, such as the STEEP-V, the research landscape is framed in a way that facilitates the exploration of different, relevant, perspectives. This is usually not a part of the traditional design process, but it helped us build an intentional foundation to the research, something that is often missing in Service Design.

We also saw that Foresight introduced more structure to the design process, which was especially helpful when working with an abstract concept like Sustainability. These structures pushed us to research from different perspectives concisely, which gave us a deeper knowledge of Sustainability. For example, Signal Scanning supported deeper and more comparable research than traditional Service Design desk research. This method also improved communication and clarity between ourselves and other stakeholders.

Service Design tools helped us make sense of emerging trends by connecting it to individual experiences. For instance, during the Sensemaking workshop, participants used Trends and Signals to co-create Future Empathy Maps, revealing how abstract futures, like economic instability, could be experienced emotionally and behaviorally by a single stakeholder.

Although Sustainability was central early on, it became less visible in the later stages of Developing and Creating. After the Context testing, we stopped actively using Foresight tools or revisiting Sustainability considerations, even though the concept itself aimed to support more sustainable impulse buying. This gap may reflect the difficulty of integrating both disciplines consistently when narrowed down to a concrete solution.

In that way, this work contributes to ongoing conversations about the role of design in shaping change. It suggests that designers can play a more active role in imagining and enabling alternative futures, and that tools from Foresight and Service Design, used together. It also raises questions on how much change Design can have, as its epistemology favors the current unsustainable system

## 6.2 Limitations and Further Research

**Limitations**
A key limitation of this project is the collaboration with TGTG, a company whose service offering is based on Sustainability. This made it difficult to evaluate the distinct contribution of combining Foresight and Service Design, and what is an effect of the culture they have as a company or an extension of their current system. The added value of the approach is therefore harder to isolate in such a context, making the findings limited for organisations with different values.

Additionally, Sustainability itself is a broad and abstract concept, which complicates its measurement within a design process. While the thesis embraces a systemic understanding of Sustainability, exploring environmental and social dimensions, the effects are difficult to measure concretely. Resulting in challenges to assess the impacts of the methods used, making validation of outcomes largely context-dependent and subjective.

Despite involving participants outside the design field, we encountered barriers related to language, tools, and process accessibility. Some participants struggled to understand terms or follow methods like the Future Empathy Map. This revealed that design collaboration still favors the highly educated, knowledgeable in design, and neurotypical participants.

**Further Research**
Future research could explore this approach with a company that does not prioritize Sustainability, to better understand how Foresight and Service Design can introduce and influence sustainable practices in contexts that are not within the field. Additionally, There is potential in integrating Systems Thinking into the methodology, drawing from the reflections, these two fields combined, result in a systemic understanding of externalised to localised perspectives. Meaning the strengths of Systemic Thinking can help enhance the results even further. While elements of systems thinking were implicitly present, particularly through tools like the STEEP-V analysis and Stakeholder Mapping, a more intentional integration could improve the ability to understand complexity and support systemic change within the Design process.

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