

## Designing a digital service to improve the user experience of conference organizers

Master's thesis in Interaction Design and Technologies

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# Designing a digital service to improve the user experience of conference organizers

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Cover:

Two screens of the digital service and Willy, the virtual assistant. Read more about it in section 6.4.

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# Abstract

Event management has become a huge global industry and has evolved in many different areas, from business to social events. The demand for digital solutions in relation to event management and participation has increased and there is a great variety of existing solutions targeted for event planners and attendees. As events are unique in nature, “the attendee is looking for a ‘lifestyle experience’ (Allen et al. 2011) and something that he will remember as ‘interesting’, ‘memorable’ and ‘exciting’” (Bladen et al. 2012). Therefore, there is a need to understand what are the attributes that influence the event experience and how a digital solution can support the entire journey.

This master thesis investigates the factors that contribute to improve and reshape the user experience of event management and participation and how they can be integrated in a digital solution. For this purpose, extensive research, user modelling and an agile methodology to ideate and test the prototype has been undertaken. From the results of the research and user modelling phases, a concept for a new digital service, built around a virtual assistant, has been developed and tested. The factors that answer the main research question of this thesis, has been defined throughout the project and integrated in the designed solution.

**Keywords:** Event Management, Human Centered Design, User Experience, Design Factors, Virtual Assistant, Google Sprint Methodology, Interaction Design

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# 1. Introduction

This chapter generally introduces the motivation, the research objectives and the aim of the thesis. It presents the research question and aim, deliverables, delimitations, introduces the stakeholders and ethical and societal considerations.

Interaction design is an emerging field and affects many different business sectors. Nowadays, It is important to use digital solutions to improve and to reshape the overall experiences of people in many different fields and ways. By interaction design here we mean “designing interactive products to support people in their everyday and working lives. In particular, it is about creating user experiences that enhance and extend the way people work, communicate and interact. (*Preece et. al., 2002*)”.

Events management is an area where there is an increase demand for new digital solutions. The role of an event manager is to organize and coordinate the activities that are required to achieve different and wide objectives of the planned events. On the other side, event attendees have different motivations than the organizers do and therefore, there is a need to identify the needs and requirements of both perspectives before, during and after the event.

There are a lot of digital solutions that are targeted towards events planning and management. However there are no specific guidelines related to the personal experience. One part of it is because of the complexity of the services: they often include a huge variety of activities, which make it more difficult to analyze. Another part, is that planning an event requires many different skills and considerations which results in an information overload and logistical complications.

Re-shaping and improving the user experience in relation to the entire process of an event lifecycle is challenging because there are a lot of attributes that must be considered in order to address both attendees and organizers needs. Therefore, this thesis will analyze the most important factors that influence the user experience of an event and develop a service that address them in a specific use case.

## 1.1. Research question and aim

The project proposal suggested by Humblebee, the company that this thesis is being developed with, was initially formulated as: “a conference app to support the attendee during the entire journey, before during and after an event”. To gain a broader knowledge of the domain, the research phase has been carried out around event management, planning and experience on a more general level. This allowed us to explore all the aspects that are involved and that influence the event experience. In a later phase, the focus has been narrowed down to a specific type of event, conferences, to reflect the relevant factors into a practical solution. The project followed an iterative human centered design process. This was achieved by including the target group as early as possible during the research phase as well as during the validation and testing phases.

The first research question considered for this project was:

“How ICT technologies can improve the user experience in relation to planning and attending conferences?”

As it is formulated, even if the goal was to focus on the user experience, the final solution was going to answer directly the question asked and therefore it has been changed to:

“Which factors should be considered when designing a digital solution to enhance the experience of planning and attending conferences?”

The research question was changed again because it focused on the design of the digital solution more than the overall consideration of factors that influences the whole user experience. As a consequence, it has been changed to:

*“Which factors to consider in order to improve the user experience in relation to events management and participation?”*

To succeed in answering the main research question some supporting questions have been formulated as follow:

- What are the attributes that event organizers need to include in their event management activities?

Our hypothesis is that, given the amount of factors and activities that need to be considered in relation to participating and organizing an event, then designing new ways of interaction with a focus on personalization can positively meet different expectations of both attendees and organizers.

## 1.2. Deliverables

The main deliverable of this thesis project is a fully implemented digital product or service created together with developers and designers of Humblebee. From our side the deliverables are:

- Different phases of event planning and management.
- A list of functionalities that can be integrated in a digital service.
- A list of factors to improve the user experience of event organizers
- High-fidelity mock-ups with a particular focus on the interaction, overall flow, navigation and information organization of the content and features.

## 1.3. Stakeholders

This thesis project has considered two main stakeholders: Chalmers University of Technology and Humblebee, a creative digital studio founded in 2012 and based in Gothenburg, Sweden.

*Humblebee* provides services and solutions for agencies and brands. They mainly focus on creativity, design, technology and interaction in order to build digital solutions with great user experiences through ideas, concepts, design and production of applications, sites and installations. This is achieved by putting the users in the centre of every project, by identifying and fulfilling their needs. This project is developed at their office with their constant support and help throughout the process.

*Chalmers University of Technology* is responsible for the academic and research outcome of the thesis and it's the examiner of it. A well-written report with valuable findings is expected.

## 1.4. Delimitations

In order to meet the defined objectives of this thesis research. The event industry is a really broad area and different types of events attract different target audiences, different motivations and expectations and different stakeholders. This thesis will delimit the focus to a specific type of event, which is conferences, that are usually held over one or more days and target a specific audience.

## 1.5. Ethical and societal consideration

Working on a thesis project together with a company might arise ethical implications regarding the revelation of sensitive data. This is important to consider while working on the thesis report. Also, there might be conflicts between our intended outcome and the company's one.

There are many different event types and the design will not be able to fit the experience for all of them. For example, an attendee of a music conference has different motivations and expectations than an attendee of a medical conference. A general standardized design solution will not be able to meet all of these different motivations and expectations.

Another important consideration is that some people might not have a smartphone when they are attending a conference. So, they will miss out part of the intended or planned experience. Kuniavsky (2010) notes that since designers have the most control over the details of an experience design, they "have a special responsibility to make that impact a net positive one". The focus to use technological solution as an alternative way to achieve specific tasks might not be the best way to help attendees achieve their goals. For example, people whose main motivation is to network face-to-face with others.

## 1.6. Thesis outline

This thesis is divided into eight chapters. Chapter one introduces the research question and its aims. Chapter two presents the background of the domain and brief introduction to the related work. Chapter three presents the design theories that has been considered for this thesis project. Chapter four presents the methodology and design methods that were considered to be carried during the project. Chapter five presents the process that was followed in order to accomplish the intended results.

Chapter six presents the different results for main and supporting research questions. Chapter seven presents discussions regarding the design process, concept development, the results with its limitations and recommendations for future work. Finally, Chapter eight presents the conclusions of the project.

## 2. Background

This chapter covers an introduction to the domain. It presents a brief history of events and defines the events management industry with a focus on corporate events. The expectations of event's attendees and how technology is supporting the event lifecycle are then explained. In the end, a brief overview of similar solutions and their main features are presented.

### 2.1. Definition of event and brief history

In order to define the concept of events management, 'event' should be defined first, Getz and Pages (2016) define it as "an occurrence at a given place and time; a special set of circumstances; a noteworthy occurrence." While Matthews (2015) define it as "A gathering of human beings, generally lasting from a few hours to a few days, designed to celebrate, honor, discuss, sell, teach about, encourage, observe, or influence human endeavors". A principle that applies to all events is that they are temporary and that "every such event is unique, stemming from the blend of management, program, setting and people (Bowdin et al., 2011)". There are many types of events, usually grouped or categorized by size, form and content, including areas as diverse as sports, music, the arts, corporate events, tourism and voluntary sectors (Bladen et al. 2012).

There has been a crucial role of events in human history until the present day, although it is unclear when exactly it started. For example, Mastermen (2009) argues that "first events began more than 2000 years ago. There is evidence of these occurring in ancient Greece, China and Egypt, with the first Olympic Games held in 776 BC". It has been developed into a fast-growing industry, taking many different forms throughout the years. Allen et al. (2008) state the birth of the industry to the 1980s where "several seminal events set the pattern for the contemporary event industry as we know it today". Getz and Pages (2016) argue that it is impossible to quantify the numbers on a global scale, because most countries do not have statistics on events numbers. But Long et al. (2004) noted that 'in recent years there has been a clear increase in the number of festivals and events, taking place across the world.

### 2.2. Events management

Event management is defined as "the organization and coordination of the activities required to achieve the objectives of events. (Bladen et al. 2012)". The event planning

and management industry has grown exponentially and it has become an industry of specialized companies who can handle any type of event. As stated by Getz (2007), event planning involves a number of factors such as themes, settings, consumables, services and programs that influence the overall experience of the stakeholders and attendees involved. In the last decade, there has been a shift of events from passive experiences, where guests showed up at the event to get a drink and listen to a keynote speech, to active experiences where the audience seek for more interaction and engagement in the entire process (Dubin, 2001). Changes have touched different aspects related to event management such as goals, means of traveling, transportation logistics, technology used, insurance and contracts terms. Every year it becomes increasingly harder to impress guests with innovative experiences that they've never seen before and event managers must be able to track the results to be able to justify their budgets. Digital technology is perfectly suited to achieve this goal since every single newsletter, tweet or invitation can be tracked and statistics can be created to collect the overall result.

### 2.2.1. Corporate events

"The B2B sector of the corporate events industry has seen the most significant growth over the last two decades (Bladen et al. 2012)". Bladen et al. (2012) state that the growth of such types of events was influenced by a combination of internal and external factors. Internal factors such as driving sales and improving staff morals, and external factors such as globalization of markets and technological advances. Companies are nowadays planning and organizing events in order to achieve different goals: attract new clients, launch products, recognize an increase in sales, receive media attention, attract sponsors, create or increase public awareness, appreciate employees, clients and sponsors or bring a lot of people together. Corporations are therefore looking for event organizers who are not only specialized in strategic planning, logistic, timing and budget management but who are also efficient in creating events to market and brand the company and differentiate it from the competition (Allen, 2009).

## 2.3. Attendees expectations and digital technologies

Technology has affected wide aspects related to different areas of businesses including events management. The past decade has seen a huge change in the event technology landscape and as a consequence, a lot of digital solution have entered the marketplace to support event planning, onsite management and attendee engagement processes (Meeting Professionals International, 2015).

One big part of satisfying the users is to meet their expectations. The expectations, of event audiences, are higher than ever before. For example, they expect events to have their own websites or pages and the possibility to purchase tickets online. Event attendees want to be engaged and gain personal and organizational value from their attendance at the event. Technology advancement within the last twenty years has also changed the way people communicate, by overcoming the barrier of time and space and introducing several tools that allow people to be always connected. These emerging technologies need to be embraced in order to deliver an enhanced experience for event attendees (Harper, 2013).

As Bowdin et al. (2011) note, technological innovation impacts on many aspects of event management. Some recent technological developments, such as video presence and high-speed data networking, have had a particularly significant impact on the design, marketing and delivery of corporate events. For example, there has been an increasing number of webinars and videoconferencing (Davidson 2010). Holden (2008) also notes that “web-based applications are still evolving but they are already essential tools for event managers.

“Despite certain alarmist suggestions that web conferencing may end ‘real’ conferencing completely, it tends to be used more as a supplement to face-to-face contact, rather than its replacement (Bladen et al. 2012)”. One of the main motivations for attending conferences is meeting face-to-face because it’s the best way to networking and therefore there is a small chance that remote conferences may take their place. This was confirmed by a survey of 600 executives conducted by Hilton Hotels, which found that face-to-face meetings are still considered more effective and productive than those utilizing recent innovations in communications technology (Arvey 2009). Technology should improve the experience of attending the conference, not to be used as a whole replacement to the overall experience.

The event lifecycle can therefore be supported by mobile technologies and social media to achieve a more frequent and relevant engagement level with the audience. In the past, the event cycle would consist of predefined steps, as a one-way communication between the organizers and the attendees. These steps contains: invitations, registration, the day of the event, the post-event surveys and follow-ups (Harper, 2013). Nowadays, attendees are expecting more from this event lifecycle and organizers have to engage with their audiences before, during and after the event by utilizing different communication tools such as social media, email, mobile

and other platforms. In this way, every message can be targeted and customized based on their users at different moments in time to create buzz and drive engagement.

A digital website is generally a hub of information for the event in order to communicate details about location, date and time, schedule and convey the message long before the event takes place. Social media are then a valuable support and communication channel to increase the engagement level of the audience other than providing a real-time system to keep users always updated on news and changes related to the event and react to their instant feedback.

Digitalization is pushing into event management processes and influences entire business areas in several ways, including virtual reality glasses, event information through mobile applications and digital tickets available on smartwatches (Buller, 2016). This rapid technological progress forces organizers to rethink the way they organize an event and all the activities related to it. However, even if there are amazing new technologies available on the market, only the ones that address the needs and expectations of both attendees and organizers should be embraced. Attendees, for example, don't have time to prepare for the event so they expect that the relevant information is conveyed to them through appropriate channels. Moreover, the networking opportunities between attendees are considered to be just as important as the event program itself (Buller, 2016), therefore, digital solutions to address this need are required, such as social network or special event apps.

From online registration and ticketing to event management and marketing systems the communication is becoming easier and easier (Harper, 2013). In fact, there are several benefits for using IT solutions in relation to event planning and management for both attendees and organizers. For example, information accessibility, data collection, data analysis and cost reduction.

## 2.4. Related work

There are several existing desktop and mobile applications aimed at conferences and events. The majority of the services focus on a specific part of the event like planning, ticketing, check-in or polling and some other combines different phases of an event into their systems. Platforms like Planning pod ([no date]), are mainly designed to help organizers during the planning phases while some others, like Whova (2017),

are an all-in-one event management software which covers more aspects of the process.

As regards mobile applications, most of them focus on either the attendee or the event planner side, not many do both. As stated in the Event Bible (Solaris et al., 2016), a study explained that there is a low number of providers offering project management (59%), task management (38%) and budgeting tools (32%). Several solutions have been designed to boost attendees' engagement and facilitate information accessibility, registration and ticketing processes, polling and social media integration in a single platform. Moreover, there are a variety of services which allow the creation of the event app directly from a web-based service in order to decide which features should be included and customize the content and style.

## Planning pod

Planning pod ([no date]) is a web-based planning framework that is used by events managers to plan different events. The framework has three different interfaces: desktop, tablet and smartphone. The framework consists of five different tools:

- Attendee management tools, whereby the event manager can take care of registration, floor plans and seating, attendees/guest lists and keep track of ticket orders.
- Productivity tools that can be used to create the schedules, keep track of the budgets, follow up on different tasks, create checklists and organize worksheets.
- Collaboration tools that can help different parties involved in the organization of the event to work together. This framework helps organizers to share files, build forms, send messages to each other, take notes, track how much time is spend on every event and create vision board of different photos and graphics.
- Business management tools that help organizers to create and track proposals, manage invoices, prepare contracts, organize contacts and book venues.
- Customization tools which provide different templates for features like to-do lists, itineraries and budgets. It also contains dashboards that help organizers get an overview of what's happening in their events. Moreover, it helps organizers customize their accounts with custom logo and brand elements.

## Whova

Whova (2017) is an all-in-one event management software that combines event registration, name badge generation, onsite attendee check-in, live polling, event marketing and mobile event app, all in one place. Whova offers services in four areas:

- Event app, which includes personal agenda, interactive maps, document sharing, note-taking, splash pages and offline access. The app aims at boosting the attendee engagement with push notification, live polling, surveys, Twitter outlets, smart profiles and networking tools to facilitate the communication between users. Moreover, there are sections designed to highlight sponsors and exhibitors with profiles, giveaways and targeted lead generation.
- Online registration to manage registrations and ticketing with a dedicated platform. It's possible to create different types of tickets like early birds or group discounts. A ticketing web page and embeddable widgets are available for easy sharing and tracking tools allow sales and registrants analysis.
- Management tools include an agenda center to manage both web and mobile agenda from one place, polling to collect votes and create engagement, name badge generation, live event slideshow to visualize event activities on a big screen, attendee check-in and post-event report to discover and share useful analytics.
- Event marketing tools to attract more attendees, including smart email campaigns with templates and marketing consultants to help with the content creation, automatic event listing service which post the event on well-known event listing websites and social media management services to create buzz directly from the dashboard.

## 3. Theory

This chapter will first present the design theories that has been considered for this thesis project, specifically design thinking and human-centered design. The concepts of emotional design and user experience are then described, with a focus on the elements that define a good user experience. Finally, some theory related to the event experience and the information architecture in digital solution are introduced.

### 3.1. Design Thinking

Design thinking is described as “building innovators who can use the design thinking paradigm to transform ideas into reality, to transform the organization, and to transform all aspects of life (Meinel and Leifer 2015)”. It is usually associated with solving something that is initially ambiguous. Every solution has its own path, with different learning outcomes, that depends on the choices that will be made during the way (Meinel and Leifer 2015). And therefore, there should be different ways to prepare people with the equipment to have successful journeys. Meinel and Leifer (2015) present different rules that define design thinking: human rule, ambiguity rule, the re-design rule and the tangible rule.

1. **The human rule:** it is crucial to solve problems that will satisfy human needs and goals. To succeed through design thinking, it is important to go back to the “human-centric point of view” (Meinel and Leifer, 2015; Brown, 2008)”.
2. **The ambiguity rule:** design innovators should always be prepared to explore new possibilities. Meinel and Leifer (2015) explain that different design possibilities will create alternative futures and this will lead to find good solutions.
3. **The re-design rule:** technological and societal circumstances change rapidly so it is “imperative to understand how needs have been addressed in the past and by whom (Meinel and Leifer, 2015)”. This will help in understanding how others have tackled similar problems in order to be able to learn from them.
4. **The tangible rule:** being tangible is essential because “we have to learn rapidly in order to produce well (Meinel and Leifer, 2015)”. Conceptual prototyping is an essential activity in design thinking and it will enhance communicating different Ideas.

## 3.2. Human-centered-design

Brown (2012) states that the design process is described metaphorically “as a system of spaces rather than a predefined series of ordinary steps”. There are different types of activities that are associated with the design spaces. “The usage of different activities will form the continuum of innovation (Brown, 2012)”. This process differs from the linear milestone-based one. The difference lies in the nature focus of the questions, insights and activities with the people for whom the product, system or service is intended (Giacomin, 2014). Brown (2008) indicates that “each project invariably has its own contours and character”. But no matter of the design challenge that exists, the movement will go through the design spaces.

When working on new projects, designers usually choose a design thinking methodology or framework to produce different solutions. Over the years many methodologies and approaches appeared and evolved to work with the complexity of the problems in hand (Giacomin, 2014). Human-centered-design is an ‘approach to systems design and development that aims to make interactive systems more usable by focusing on the use of the system and applying human factors/ergonomics and usability knowledge and techniques’ (International Organization for Standardization, 2010: 2). (Maguire, 2001; Giacomin, 2014) describe the core attributes of human-centered-design as:

1. Active involvement of users and clear understanding of user and task requirements
2. Multi-disciplinary design teams
3. An appropriate allocation of function between user and system
4. Iteration of design solutions
5. User-centered evaluation driven/refined design.

## 3.3. The four space model

“It’s important to gain a full understanding of the human experience of space when designing technologies that will pervade and become an integral part of our physical environment” (Ciolfi, 2004). Nowadays, with the growth of context-aware systems, the physical world is considered as part of the system or the interaction, in the way that they have to respond to what state the real world is and what users really want to happen (Pederson, 2003). The real world context is not considered as only the

physical space but also the social domain, which seems to be more difficult to focus on in the design process (Pederson, 2003).

The Four Space Model (Eriksson, 2011), is an analytical tool that can be used during different phases of the design process and aims to highlight that all four design spaces are equally important: interaction, social, physical and digital. The interaction space is considered the one between the technology and the human abilities; the social space is where the human act, live and co-operate and analyzing it will lead to understanding people's habits and behavior; the physical space contains all types of visible things where the system meets the user; the digital space is where different computational things communicate with each other and with the users. All these aspects need to be considered when designing IT solutions in order to gain a broader perspective and create meaningful experiences in that specific context of use. Therefore, "there is a need in interaction design for understandings of how both the augmented and the physical spatial layout affects the user's experience, behavior and social relations" (Eriksson, 2011).

### 3.4. UX as an evolving field

The term UX, user experience, was first introduced by Don Norman during the late 1990s. The field has some origins in human factors and ergonomics, as well as computer-human interactions (CHI) (Rosenzweig, 2015). UX has evolved quickly to become related to many different fields and areas. The impact of UX has become huge in many different aspects that are related to people and their lives. Prior to that, the main concern of human factors was primarily related to the interaction of humans and machines, from a physical point of view (Rosenzweig, 2015). There has been a link between pioneers in industrial design, human factors, ergonomics and UX. This is because industrial design field focuses on the ergonomics of a machine, which shifted into the foundation of UX (Rosenzweig 2015). The term 'user experience' is associated with many different meanings (Forlizzi and Battarbee, 2004), stretching from traditional usability to other attributes like affective, beauty, hedonic or other aspects that are related to the use of technology.

#### 3.4.1. What defines a good user experience?

The user experience of a product or a service is not just about how usable it is. It is also not only about how aesthetically appealing it is. It is important that the product provides good layout and ease of use, but understanding just a little bit of what motivates people will result in a better user experience. "A great experience stems

from something more -- an awareness of why people could or do care (Anderson, 2011)". Anderson (2011) introduces a user experience hierarchy of needs model, which proposes that most technology and service experiences go through six levels of maturity. It consists of six aspects that resolve a lot of different ideas regarding what is important to an experience. The six levels, in the hierarchy of user experience model of a product or a service, as shown in Figure 1, are 'functional', 'reliable', 'usable', 'convenient', 'pleasurable' and 'meaningful'.

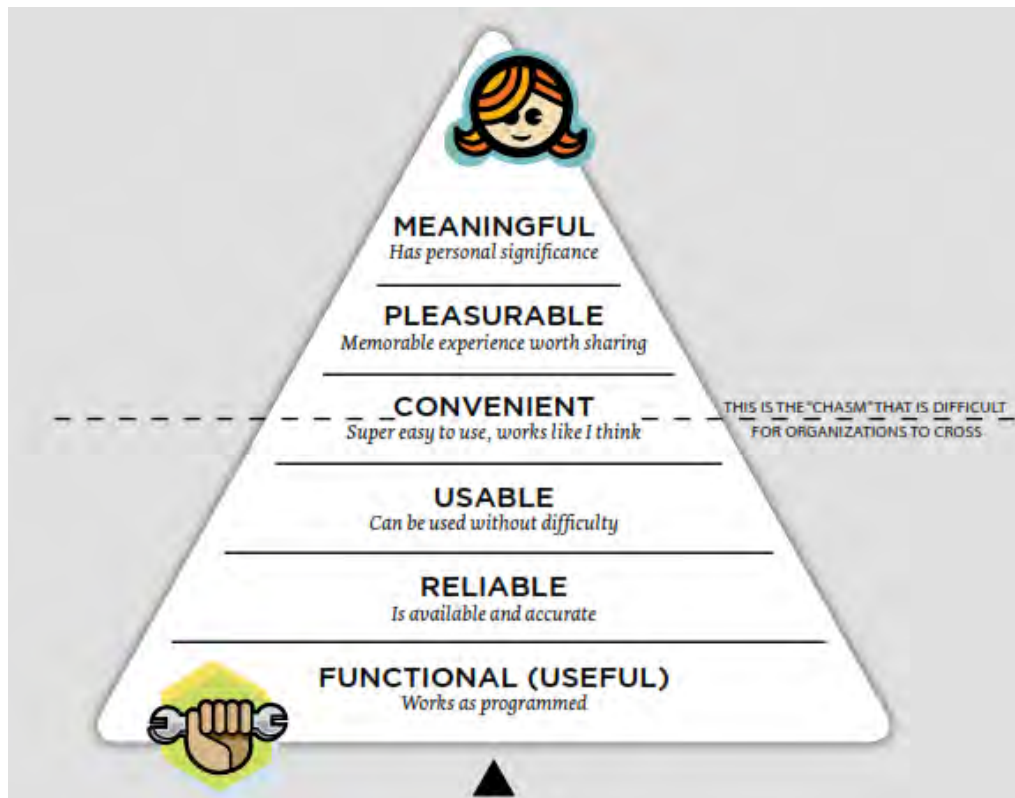


Figure 3.1. Users experience hierarchy of needs model (Anderson, 2011)

The first level, functional (useful), focuses on the usability of the service or product on solving a specific problem. Reliable focuses on both the reliability of the product as well as the integrity of data. Both usable and convenient revolves around the easiness of use. However, convenience is more related to finding the most natural way of achieving a task. Pleasurable is related to the associated effect and emotions. (Anderson, 2011) notes that there are several techniques that can help in creating more pleasurable experiences. The last level, meaningful, is highly personal and subjective. However (Anderson, 2011) argues that design for meaning can be achieved by "focusing on the preceding levels as well as shepherding beliefs and the communities surrounding the product or service experience."

### 3.4.2. Aesthetics and design

Aesthetics include everything that appeals to the senses. Anderson (2011) presents three dimensions that are related to aesthetic choices: cognition, affect, and associations. Cognition is the process of knowing. People learn about how to understand the environment around them based on patterns and experiences. Affect include the feelings and emotions that are triggered, and how it will influence the perception and usability of a service. "We make cognitive as well as emotional associations with just about everything processed by our brain (Anderson, 2011)". Thinking about the product personality, each visual element should be considered, in terms of type size, color and so on.

#### Three modes of beauty

(Bowles, 2010) proposes three modes of beauty, universal, socio-cultural and subjective that are hierarchical. Universal beauty is concerned with the fundamental principles of design, such as the golden ratio, harmony and symmetry. These principles are the foundation of well-defined designs. Socio-cultural is concerned with what people find attractive in a culture at a particular time. This is always changing and there are many trends every year that are different in different cultures (Bowles, 2010). Subjective beauty is concerned with what the individual find attractive based on his/her own personal taste.

(Anderson, 2011) argues that most of the people enjoy attractive things, and the important part is to consider the intended effect of the aesthetic choices. In order to achieve specific behavior goals, it is important to consider the different styles of design.

### 3.5. Emotional Design

"Emotion is not a luxury: it is an expression of basic mechanisms of life regulation developed in evolution, and is indispensable for survival. It plays a critical role in virtually all aspects of learning, reasoning, and creativity. Somewhat surprisingly, it may play a role in the construction of consciousness" (Antonio, 2004).

Emotional design is related to designing products or services with the intention to evoke or try to prevent triggering certain emotions. Emotions play an important role in our lives, and knowing how to trigger specific emotions for a specific reason will enhance the overall user experience (Fokkinga and Desmet, 2013; Norman, 2004). Emotions are subjective in nature (Norman, 2004) and this means that there will be

different levels of satisfaction, experienced by different people, for the same design. There are different frameworks that try to incorporate the use of emotions in interaction design (Fokkinga and Desmet, 2013; Norman, 2004).

Norman (2004) proposes that there are three design levels, interacting with each other in a complex way, that affects our cognition and emotions in relation to experiencing interactive products. The most basic, visceral level, responds to aesthetics of an object, and the feeling is usually immediate. Norman (2004) adds that the individual differences, in the degree of a visceral response, are large. The second level, behavioral design, responds to the pleasure and effectiveness of use. This level is mainly about the usability of the product. The final level, reflective design, considers the “rationalization and intellectualization of a product” (Norman 2004). Long-lasting emotional feeling takes time to develop; Norman (2004) argues that it will be developed from sustained interaction with the product.

### 3.6. Event experience

Experience is related to an event or occurrence that influences someone. Morgan (2006) states that ‘experience’ is used to describe the essence of what customers are seeking and paying for. Event experience is clearly distinguished between attendees and organizers perspectives. According to Getz (2012), it is possible that events satisfy ‘visitors’ at one level, but at the same time fail to achieve the ‘organizers’ intended experiences. The event can be successful in terms of the desired outcome such as brand recognition, but the experience of attendees are negative. As events are unique in nature, “attendees are looking for a ‘lifestyle experience’ (Allen et al., 2011) and something that they will remember as ‘interesting’, ‘memorable’ and ‘exciting’” (Bladen et al., 2012). The experience of an event is identified by many factors that are not only related to the keynote speakers and/or overall theme but also to the many other factors that will occur before, during and after the event. Despite the relationship between services quality and customer's satisfaction, O'Neill et al. (1999) note that, it is hard to measure, “because many of these event experiences are considered ‘intangible’”. It is crucial to capture the attendees’ feedback during and after the event, to get a better impression about their level of satisfaction (Bladen et al., 2012).

The experience of each attendee differs from one to another. Balden et al. (2012) argue that attendees will always form their own personalized experience, which will often be as a result of stimuli generated by the different activities that are planned

and carried by the event organizers. These experiences' outcome is analyzed with the achievement of the planned event outcome. Therefore, "it is the responsibility of the event designer to ensure that the experience, which is personalized by each attendee, mirrors these event objectives as closely as possible." (Bladen et al., 2012). According to Prahalad and Ramaswamy (2004) the experience of an event is not only affected by the goods, or created by the services, but the actual personalized experiences are affected by how attendees participate throughout the event.

Bladen et al. (2012) split events impacts into three categories: personal, organizational and external impacts (see Figure 3.2). The impacts can be positive and/or negative and there are different factors for different parties. In the following table, some impacts that can be included, are shown (Bladen et al., 2012).

	Positive	Negative
<b>PERSONAL IMPACTS</b>	<ul style="list-style-type: none"> <li>• Perceptions that the event met or exceeded expectations</li> <li>• Satisfaction, happiness</li> <li>• Attitude change (towards events, sponsors, causes, or events in general)</li> </ul>	<ul style="list-style-type: none"> <li>• Perceptions of poor value-for-money</li> <li>• No intent to repeat event experience</li> <li>• Lack of satisfaction</li> <li>• Failure to meet expectations (Getz, 2007)</li> </ul>
<b>ORGANIZATIONAL IMPACTS</b>	<ul style="list-style-type: none"> <li>• Financial impacts – revenue generation, profit- and loss-making activity.</li> <li>• Human resource impacts – recruitment and retention, motivation of staff, training opportunities.</li> <li>• Impacts on organisational capacity – growth, skills development, client acquisition.</li> <li>• Marketing impacts – profile-raising, word-of-mouth, media attention.</li> </ul>	
<b>EXTERNAL IMPACTS</b>	<ul style="list-style-type: none"> <li>• Economic impacts - including the construction of venues as well as their supporting infrastructure, such as roads.</li> <li>• Social impacts (Small, 2007) - Inconvenience, factors on the community, where the events takes place, as reduced available parking or increased queueing time.</li> </ul>	

Figure 3.2: Personal, organizational and external event impacts

### 3.7. Information architecture

Information architecture is the structure of information in any medium. The importance of arranging information is to make it easier for users to understand and navigate. The structure is more to "address the non-visual design problems of logical structure and flow of content" (Cooper et al., 2012). There are some rules that describe the way humans see patterns in visual displays. Gestalt laws translate these rules into a set of design principles to be considered when designing to communicate information (Ware, 2012). Gestalt laws consist of eight different principles which are:

proximity, similarity, connectedness, continuity, symmetry, closure, relative size, and common fate.

*Proximity* is one of the most useful principles in design (Ware, 2012). It is principle that things that are close together are perceptually grouped together.

*Similarity*, the principle that similar elements tend to be grouped together. “This technique can be useful if we are designing so that users can easily attend to either one pattern or the other (Ware, 2012)”.

*Connectedness*: the principal that shows the connection between graphical objects by connecting them with lines. “This is fundamental to the node–link diagram, one of the most common methods of representing relationships between concepts (Ware, 2012)”.

*Continuity*: this principle is usually applied to the drawing of diagrams that consists of many different nodes to make it easier to identify the connections. “people are more likely to construct visual entities out of visual elements that are smooth and continuous (Ware, 2012)”.

*Symmetry*: the principle that symmetrically arranged shapes are perceived to be organized together. “A possible application of symmetry is in tasks in which data analysts are looking for similarities between two different sets of time-series data (Ware, 2012)”.

*Closure*: the principle of closure applies when “we tend to see complete figures even when part of the information is missing (Ware, 2012)”. This principle is used to portray overlapping relationships among different components.

## 4. Methodology

Wicked problems have been defined as a “class of social system problems which are ill-formulated, where the information is confusing, where there are many clients and decision makers with conflicting values...” (Rittel and Webber, 1973). When tackling these problems, the design process doesn’t follow the linear model of design thinking, which consists of the problem definition that will lead to the problem solution. Instead, *indeterminacy* dominates the concept, since there are no definitive conditions or limits to design problems (Buchanan, 1992). As stated by Rittel and Webber (1973), wicked problems have no definitive formulation, there can always be more than one possible explanation, their solutions can only be good or bad not right or wrong and they have no stopping rule.

When investigating a wicked problem, a design methodology that uses an iterative approach and puts the human in the center can be used. There are many approaches that can be adapted to the design process. This project will follow a human-centered design approach in order to better understand people and their needs in relation to the design (Crown, 2008). There are many different models that have been constructed, in order to provide structure and steps in how to carry the process of human-centered design. Google Sprint, the 5-steps model developed by Google to solve and test design problems, is a good model that was inspired by the iterative, time-bounded and user-focused aspects of Agile Development and Design Thinking (Google developers, [no date]).

### 4.1. Design process

Jones (1992) describes the design process as “a sequence of steps to follow for getting from initial brief, or intention, to a finished design”. Design processes and methodologies have changed and still changing rapidly in order to cope with the evolving technologies (Lawson, 2005). Despite that evolution, there are underlying characteristics of most of the processes that are related to user experience design, such as iterative design, convergence and divergence. The design process has taken many different shapes in order to capture and deal with the ambiguity of the problems at hand.

Jones (1992) divides the design process into three different phases: divergence, transformation and convergence. In divergence, the problem space is widened by

gathering information, that will be explored to find a solution. In transformation, patterns are created to make sense of the problem and boundaries are fixed in order to be able to scope down. In convergence, different alternatives are evaluated until a final solution is chosen. First, we diverge as we check design options, then we converge by making choices to narrow it down. Cross (2000) explains the relation between divergence and convergence as “the overall aim of a design strategy will be to converge on a final, evaluated and detailed design proposal, but within the process of reaching that final design there will be times when it will be appropriate and necessary to diverge, to widen the search or to seek new ideas and starting points”. Therefore, the overall process is convergent, but with containing periods of purposeful divergence.

During the design process, there are a lot of uncertainties and the best way to figure out the problems is to test and evaluate the ideas and then iterate. Iterative design focuses on dividing the timeline into smaller steps to better understand and test the hypothesis. The idea of iterated conceptual representations is described by (Gabora, 2005) as: "Creative thought is more a matter of honing in a vague idea through re-describing successive iterations of it from different real or imagined perspectives; in other words, actualizing potential through exposure to different contexts". The advantages of breaking down the process into iterations are that, with each iteration, the design will be refined and new insights will be considered.

#### 4.1.1. Google Sprint

Google has developed a methodology to make the design process more effective and to give valuable insights by analyzing, prototyping and testing a feature or a product in only one week. “The sprint is a unique five-day process for answering crucial questions through prototyping and testing ideas with customers. It’s a greatest hits of business strategy, innovation, behavioral science, design and more - packaged into a step-by-step process that any team can use” (Knapp et al., 2016). Moreover, “a design sprint is a simply structured brainstorm based on design thinking and agile development” (Google developers, [no date]).

According to this methodology, the first day should be focused on mapping out the problem and choosing a target to focus on. On the second day, the team should sketch possible solutions on paper and on the third day these ideas need to be turned into testable hypothesis. On the fourth day a realistic prototype, of the best idea chosen the day before, is created to be tested out with real potential customers on the

last day of the process. This methodology is used to make rapid progress and know for sure if you're headed in the right direction (Knapp et al., 2016).

As shown in Figure 4.1, each sprint goes through the six stages of design thinking.

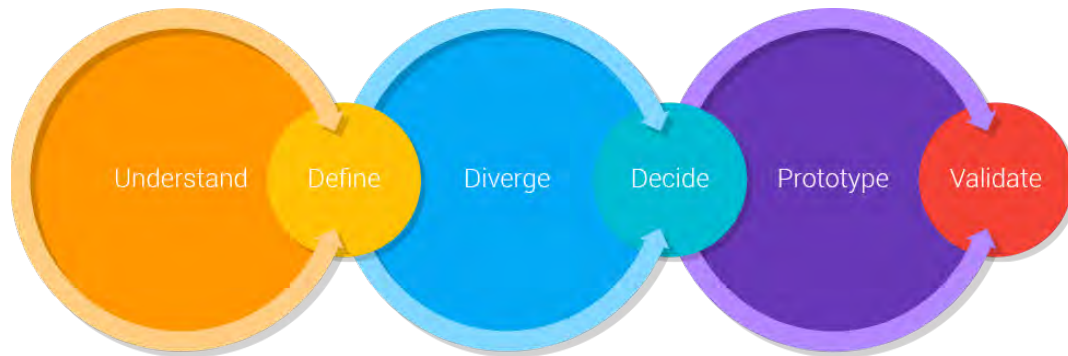


Figure 4.1. The six sprint stages (Google developers, [no date])

The first stage, understand, provides a foundation upon which team members can create ideas and prototypes by understanding user needs, business goals and technology capacity. The define phase starts with developing a focus and key strategy by creating a journey for their potential customers. The diverge phase encourages the team to generate as many ideas as possible by creating individual sketches and then vote together to decide which one is the best. This is the decide phase, where the team can vote up to 3 ideas that they want to develop more in the following phase. The prototype phase consists of rapid prototyping to test the idea without spending too much time, money and resources in order to see if it has some potential or not. The final phase, validate, is used to determine if the idea is any good by conducting testing the prototype with users, business stakeholders and technical experts.

This project is not going to follow exactly the timeframe suggested by this methodology since it will be adapted to the specific features ideated for the service. However, it will follow the structure of the sprint as described in the paragraph above.

## 4.2. Design methods

To achieve the intended outcome of the project, different design methods can be used during each phase of the sprint.

## 4.2.1. Understand

In this phase, different methods are used to understand the domain, goals and user needs. After that, a focus for the sprint will be defined by analyzing the findings collected.

### 4.2.1.1. Literature review

This method is used to explore and understand the context in which the design problem is framed. It combines collecting information from different sources, like books, scientific articles or journals, and capturing the finding from previous research or projects as they might inform the current project (Hanington and Martin, 2012). The information captured in this phase need to be relevant and collected from reliable sources, by being particularly cautious when it comes to online websites and blogs. The relevant information identified should then be converged in a synthetic way and connections between sources can be drawn (Hanington and Martin, 2012). Moreover, all the sources used, need to be referenced using a consistent bibliographic style.

### 4.2.1.2. Observations

Observation methods require “attentive looking and systematic recording of phenomena-including people, artifacts, environments, events, behaviors and interactions (Hanington and Martin, 2012). These methods are mainly used for two reasons: the user doesn’t always want to describe problems, requirements and wishes or he’s not able to provide that information due to different factors. As stated by Engelbrektsson (2004), observation studies are useful to observe behavior in order to “get access to problems of which the user is not aware and therefore cannot verbalize”. Observational methods are characterized by their degree of formality and their intended goal. Regardless of methods used, every study should be well documented through notes, sketches or photographs and the observation should not be biased by the natural tendency of “find what you are looking for” (Hanington and Martin, 2012).

### 4.2.1.3. Interviews

Question-based methods are used to elicit quantitative and/or qualitative data from users. Interviews are commonly used method to elicit qualitative data. It can be used early in the process to learn more about the target group and their needs. And it can also be used later on to get feedback regarding a specific concept. Personal interviews can range from highly structured interviews to unstructured, where the

output is more directed by the interviewee (Engelbrektsson, 2004). Most interviews fall somewhere in between (Wilson and Corlett, 1990). Engelbrektsson (2004) consider “the adaptability and the possibility to probe deep into the thoughts of the user”, to be the main benefits of conducting interviews. Cooper et al. (2012) also point out that using ethnographic interviews early in the process will help designers better understand users’ needs and motivations.

#### 4.2.1.4. Contextual inquiry

Contextual inquiry is a field research method that is used to gather information about the target users within their real environments. Raven and Flanders (1996) state that, inquiry is based on three principles. First, data gathering must take place in the context of the user’s environment, secondly, the interviewer and the user should collaborate to explore issues together and lastly, the inquiry is based on a clear defined set of concerns, not a specific list of questions. The main advantage, of using this method, is the ability to capture the details that are usually missed using regular interviews (Raven and Flanders, 1996).

#### 4.2.1.5. Focus group

Focus group is considered a kind of interview, but instead on conducting it with one person, it is conducted with a group of people (Langford and McDonagh, 2003). Focus groups are a qualitative method that can be used to get insights from a group of people on a defined area of interest (Hanington and Martin, 2012). The session is usually guided by a moderator who is responsible for the flow of the session. Focus groups can be carried out to evaluate existing solutions with users in order to identify different problems and/or to stimulate new ideas or concepts with them. Hanington and Martin (2012) note that the "results of the focus group, is usually determined by the skills of the moderator and the dynamics of the group”.

#### 4.2.1.6. KJ analysis

The KJ analysis method is commonly used to help teams organize different types of information (Hanington and Martin, 2012). The method can be applied by having each member write all the research findings or insights on sticky notes, followed by organizing related sticky notes into groups. KJ method is considered an effective way to allow each member of the team express his/her insights, findings and opinions (Hanington and Martin, 2012), and this will help team members to come together.

#### 4.2.1.7. Personas

Cooper et al. (2014) describe personas as a method that creates descriptive models of users, from the intended target group. When designing for people, it is important to understand and visualize their motivations and surroundings. That is why personas is considered a powerful tool to realize research findings into concrete examples that can be used to shape design decisions (Cooper et al., 2012). It will also help to identify and prioritize different types of users that will inform different design choices (Cooper et al., 2014).

Cooper et al. (2014) divide personas types into six categories: primary, secondary, supplemental, customer, served and negative personas. Primary persona, is the main target of the interface design and there can be multiple primary personas. The secondary persona has specific additional needs that should be accommodated without interfering with the primary persona. Supplemental personas, "which their needs are completely represented by a combination of primary and secondary personas and are completely satisfied by the solution we devise for one of our primaries (Cooper et al., 2014)". Customer personas, that can also be treated as secondary personas, address customer needs that are not related to the end users. Served personas, are constructed for non-users who will be directly affected by the product usage. Negative personas, sometimes referred to as anti-personas, are similar to served personas and they are constructed for non-users. Moreover, it should communicate to different stakeholders that the product is not being build for that user group. Cooper et al. (2014) recommend that the design solution should be limited to a small number of personas in order to maintain the design focus.

#### 4.2.1.8. Customer Journey Map

A customer journey map is a "visualization of the experiences people have when interacting with a product or service, so that each moment can be individually evaluated and improved" (Hanington and Martin, 2012). By mapping the experiences in a chronological order, a story is created about an individual's actions, feelings, perceptions, and frame of mind—including the positive, negative, and neutral moments—as he or she interacts with a product or service over a period of time (Hanington and Martin, 2012).

User journeys' help designers to take personas through secondary paths where the service or product helps them achieve their goal (Cooper et al., 2014). In fact, the map can help understand what users are feeling, thinking and doing at any specific moment in time when they are interacting with the service or product. The journey

map takes also into consideration the intersections between the user's expectations and the business requirements, allowing all stakeholders to understand how the experience is built across different channels by involving all parts of an organization. Kalbach (2016) states that to create great user experiences, the optimization of individual touch points is not enough because it's necessary to define how those touch points come together into a unified whole.

"Some typical elements of CJMs include actions, goals, emotions, pain points, moments of truth, touch points, satisfaction, and opportunities" (Kalbach, 2016). Grocki (2014) states that there are five must-haves in order to create the visualization: personas, timeline, emotion, touch points and channels. These aspects are then mapped out on a table with connection links between them to visualize the steps that the user goes through while engaging with the product or service.

## 4.2.2. Diverge

In this phase, many different ideas are sketched in order to identify possible solutions. By the end, a specific concept is decided to be investigated further later on.

### 4.2.2.1. Brainstorming

Brainstorming is a process that allows a group to generate a lot of ideas on a given topic without stopping to talk about it or evaluate each idea as it is written down within a given time (Kelsey and Plumb, 2004). Brainstorming methods are used to explore possible solutions with an open-minded and flexible approach (Cooper et al., 2014). It is used to "blue sky" ideas early on a project or to solve a tricky problem that's cropped up later on (Kelly, 2000). From the findings of the research phase, all the ideas need to be brought up and stored to be analyzed, thrown away or picked later on. A brainstorming session needs to have a clearly defined problem statement shared between the team members. All the ideas created around this topic cannot be critiqued or debated until the session is over. Usually, a brainstorming session is held for around 60 minutes and the energy must be kept at a high level by the help of a facilitator. There are many different ways to hold a brainstorming session such as, for example, reserve brainstorming and sticky notes brainstorming.

### 4.2.2.2. Reverse brainstorming

In traditional brainstorming, several possible 'solutions' to the problem are identified, but in reverse brainstorming 'questions' are asked in order to generate criticism or problems rather than solutions (Wilson, 2011). Reverse brainstorming is

used to explore new ideas by looking at the problem in new different perspectives. It is usually used along with other brainstorming methods (Wilson, 2011). The main advantage of using this method as described by Wilson (2011), is the easiness of carrying this method because it is usually easier to criticize than to come up with new ideas. However, in order to make use of the method, the generated negative ideas should be converted to positive ones, and this requires more time (Wilson, 2011).

#### **4.2.2.3. Sticky notes brainstorming**

Another brainstorming method to use is sticky notes brainstorming. It is usually carried by “different group members writing their brainstormed ideas on sticky notes, and then place the notes on a wall” (Kelsey and Plumb, 2004). Although it is a group method, it can also be carried silently to give the space for people who does not like to talk about their ideas in front of everyone (Brown, 2009). During the session, similar ideas are usually grouped together on the wall, providing a visual representation of the most mentioned ideas by the group. It is important that the moderator makes sure that people write legibly. One of the advantages of using this method is that it is easy to grab the notes by hand and re-arrange them in any order. Another advantage is that, when people move, the energy in the room increases, which will result in better mood and atmosphere (Brown, 2009). However, by the end of the session, “the notes can become cumbersome and transcribing them at the end can be tricky (Kelsey and Plumb, 2004)”.

#### **4.2.2.4. 6-3-5 Brainwriting**

The 6-3-5 method, allows a group of six people to generate different ideas each for a period of five minutes. King and Sivaloganathan (1999) note that the title ‘6-3-5’ is misleading because any combination of numbers would describe the method. The method is carried by giving each member sticky notes and pens. Then silently, each one will write different ideas for five minutes, followed by a group discussion. The main advantage of using this method over other brainstorming methods is that “it minimize individual dominance (King and Sivaloganathan, 1999)”. However, the requirement to produce certain number of ideas in a set time can lead to boredom and frustration (King and Sivaloganathan, 1999).

#### **4.2.2.5. Paper sketching**

Buxton (2010) demonstrates that the act of creating paper sketches can “help an individual designer work through concepts and refine ideas”, thus allowing them to explore different possibilities. Paper sketches are used to test ideas quickly, by

creating rough sketches in a short amount of time. The level and detail of the sketch depends on which part of the process it is carried. Buxton (2010) states that the amount of details will influence the type of feedback that will be received. Paper prototypes can also be seen as "a concept proposed for constructive review and timely feedback for iterative changes (Hanington and Martin, 2012)".

#### 4.2.2.6. Crazy 8s

Crazy 8s is a method used to transform ideas into paper sketches. The method is carried by each member of the team "rapidly sketching eight variations of a specific idea in eight minutes (Knapp, 2016). The method is usually applied by giving each person a folded sheet of paper. Then, the moderator, will start a timer for 60 seconds per section, and everyone should start sketching. The main advantage, of using this method as Knapp (2016) states, is that it pushes people to elaborate quickly on a certain idea by considering different alternatives. However, this can possibly lead to some members to feel stuck on a certain idea and therefore ignore exploring others (Knapp, 2016).

#### 4.2.2.7. Storyboards

Storyboards are narrative prototypes that illustrate how the product or service fits the context of the actual user's tasks (Arnowitz et al., 2010). The storyboard usually has a storyline that shows, how the users are going to interact with the system. Storyboards are used to "help teams flesh out the convergence of ideas to assure that everyone of the team is on the same page (Arnowitz et al., 2010)". Different storyboards can be created to demonstrate different aspects of the solution to different stakeholders involved in the project (Hanington and Martin, 2012). Storyboards can be created in a simple or a more complex way. The complexity of the storyboard is decided by the complexity of the use cases explained with it (Arnowitz et al., 2010). Storyboards can be enriched by "adding different factors such as dialogue, visualizations or even video (Arnowitz et al., 2010)". It is important to validate the storyboard with different stakeholders of the project.

### 4.2.3. Deciding methods

There are several methods to help teams decide on which ideas or sketches to test further. It is important to plan time to evaluate different ideas before picking one to explore further, (Wulfen, 2012) indicates that "one of the most frequent mistakes is spending a lot of time generating ideas, leaving hardly any time in the ideation workshop to converge, select and improve them". There are some methods that

require teams to discuss before voting such as the speed critique method (Knapp, 2016) and others that are carried silently such as the hundred-dollar test (Leffingwell and Widrig, 2000). Usually a combination of deciding methods are used before choosing an idea.

#### 4.2.3.1. The hundred-dollar test

The hundred-dollar test method is carried by giving each team member a hundred dollars of 'idea' money to spent on different ideas (Leffingwell and Widrig, 2000). Then each participant is asked to pay money on different ideas. Sometimes, members want to spend all money on just one idea so, as (Leffingwell and Widrig, 2000) points out, it is important to define limitations for spending. The main advantage of using this method is that each member of the team has an equal opportunity to decide. However, it is not recommended to use the same technique more than once in the same phase of the project, because "participants will bias their input the next time around" (Leffingwell and Widrig, 2000).

#### 4.2.3.2. Speed critique

Speed critique is a group deciding method to discuss different solutions and make notes of standout ideas. The method is guided by a facilitator to narrate the sketch, so everyone can understand the context (Knapp, 2016). In order to carry the method the group should gather around each sketch for three minutes to discuss it while, the scribe takes notes (Knapp, 2016). It is important that the person who created the sketch does not defend his/her idea, because as Knapp (2016) notes that, this will "save time, removes redundancy, and allows for the most honest discussion".

#### 4.2.4. Prototype

In this phase, methods are used to rapidly prototype the selected concept in many different forms. Prototyping is used to create a physical realization of a product or an interface concept by translating the research and ideation results into a tangible form (Hanington and Martin, 2012). This will help in getting feedback from users in order to validate the designed solution. Menotti (2011) describes the characteristics of a prototype as "an object critical of its own function. It is not finished; it may not work and it is used to test and evaluate ideas". Prototypes can be used to demonstrate a concept in the early phases of the design process, to test details at a later stage and sometimes as a specification for the final product (Benyon et al., 2010). Moreover, as stated by Benyon et al. (2010), prototypes stimulate reflections, and designers use them to frame, refine and discover possibilities in a design space. Prototypes can take

many different forms, based on their level of fidelity, from low-fidelity prototypes to more finalized digital ones.

#### 4.2.4.1. Low-fidelity prototyping

Lo-fi prototypes are more focused on the content, form and structure, the 'tone' of the design, key functionality requirements and navigation structure (Benyon et al., 2010). They serve mainly as an internal development purpose, to share concepts within the team through sketches, storyboards or mock-ups. In addition, they are also used as tools to test early ideas with potential users in order to receive constructive feedback and make changes iteratively. By shortening the prototype-evaluation cycle, the design team can evaluate more alternatives and iterate several times, improving the likelihood of finding a solution that meets the user's needs (Sears, 2008). However, it's really important not to spend too much time on the details of a lo-fi prototype since the main goal is to low the investment on prototype building and quickly test the product or service for potential changes. The level of details needed in a lo-fi prototype is enough when a potential user is able to use the prototype without the designer helping (Benyon et al., 2010).

#### 4.2.4.2. High-fidelity prototyping

After reviewing paper prototypes, tone and detail can be applied to take them further (Buxton, 2010). Hi-fi prototypes are more refined, usually representing the look and feel of the final product (Hanington and Martin, 2012). Usually, hi-fi prototypes require a level of performance that cannot be achieved with the rapid prototyping techniques and they are intended to evolve into the final product (Sears, 2008). These prototypes can be developed using applications which allows to test them with potential users. The main advantage of using hi-fi prototype is that it can "test the expected user experience in terms of aesthetics, interaction, form and usability" (Hanington and Martin, 2012). Moreover, hi-fi prototypes can be used in "usability studies to establish whether people can learn to use the system within a specified amount of time" (Benyon et al., 2010). Accurate details in these prototypes are vital because the potential users perceive them as 'real' and a simple error can ruin the expectations. In addition, technical feasibility studies need to be carried out before the features are implemented in the prototype because, if they are not doable, alternative solutions need to be created.

#### 4.2.4.3. Video prototyping

Video prototyping is a method used to illustrate how users are going to interact with the new system (Sears, 2008). By using this technique, the aim of the design team is

to refine a single design and the videos can be created using either the paper prototypes or a more digital one. A video prototype can elicit comparable user feedback as a high-fidelity one, but it's usually cheaper and quicker to produce (Preece et al., 2015).

#### 4.2.5. User testing

Usability testing is a method “that allows teams to observe an individual's experience with a digital application as he or she walks through the steps of a given task” (Hanington and Martin, 2012). *Summative evaluations* (Nielsen, 1994), are tests conducted on final products in order to evaluate the solution with real users and see if it helps them to reach their end goals. *Formative evaluations*, instead, can be conducted throughout the design process with an iterative approach to receive early feedback from potential users or members within the team. However, the solution tested with real users should be detailed enough to give them something concrete to respond to (Cooper et al., 2014).

“Usability tests are good at identifying major problems with the interaction framework and at refining things like button labels and activity order and priority” (Cooper et al., 2014). They are usually created around specific tasks or user scenarios that represents a typical goal of the target audience and they shouldn't influence the participant to solve the problem in a certain way.

There are several methods that can be used to conduct usability testing, and based on the formality, different preparation times will be required. “Customer feedback gathered from usability testing is most useful when you need to validate or refine particular interaction mechanisms or the form and expression of specific design elements.” (Cooper et al., 2014). From the results of these tests, design issues that gives users feeling of frustration or confusion can be tackled if there are enough insights collected from the usability session.

## 5. Process

### 5.1. Planning

This thesis project started on the 16th of January 2017 and it lasted for 20 weeks. The structure of the design process is displayed in Figure 5.1.



Figure 5.1: Structure of the design process

#### Research

The research phase was conducted from mid-January to mid-February. It consisted of literature review (Hanington and Martin, 2012) and similar applications to explore the domain, interviews to collect user insights and detailed analysis to validate the assumptions and identify user needs. In particular, the qualitative research was carried in order to gather all the required information that created a solid basis for the entire project. Moreover, in order to analyze the findings from both the literature reviews and interviews, KJ method (Hanington and Martin, 2012) sessions were used to analyze the data and group together similar insights.

## **Concept and Ideation**

The concept and ideation phase was conducted from mid-February until the third week of March. It consisted of creation of user journey mapping and personas for both organizer and attendees, brainstorming workshop and prioritization matrix workshop to select the most valuable features that should be developed further. Since the area of research was complex and included many different tasks carried by both attendees and organizers, the user journey mapping (Cooper et al., 2014) was a key method to define, in details, touch points and attributes that are included in both journeys. After that, personas were created to model the target group and keep the focus on how the service fits within their context. A brainstorming workshop was then carried to ideate on different features that can be useful for a digital solution as well as a prioritization matrix workshop to converge the findings and define the next phase.

## **Design sprints**

Five different design sprints were conducted from the end of March until mid-May. The design sprint has been structured by following the Google Sprint Methodology (Knapp et al., 2016) with some minor changes to adapt it to the needs and requirements of this particular project. From the list of features defined in the concept and ideation phase, the resulting macro-categories were used as a basis for the different design sprints. In each sprint similar methods has been used in order to diverge with different solutions and then converge on a selected idea that was prototyped and tested with potential users afterward. Moreover, the feedback received during each user test was then taken into consideration for the following sprints and to modify certain aspects in the design of the service.

## **Reporting**

Throughout the entire period, constant documentation has been used to keep track of the findings, answer the research question and develop the concept.

## **5.2. Research**

Since the domain of events planning and management was new and ambiguous, an extensive research was carried early in the process. The main goal of the research phase was to understand the attributes that are related to both people who organize conferences and the ones who attend them. The main methods that were carried out are literature review, KJ analysis, interviews, user journey mapping and personas.

### 5.2.1. Literature review

A literature review was carried in order to identify the different aspects that are related to the event experience, learn about the target group, study existing solutions and try to identify the main problems and frustrations that people encounter. Most of the literature found was related to events management in general, which is bigger than the scope of this thesis. However, there were findings that can also be related to conferences as well.

The event planning and management books cover the main aspects that need to be considered when organizing an event: from defining the goal and requirements of the event, to create agreements with third parties and send the invitations to all the attendees. These guidelines can be helpful for event organizers to help them create a structure and don't forget anything in relation to the overall planning. The event experience has also been explored by some authors who describe the most important factors to create a memorable experience both from attendees' and organizers' perspectives.

A selection of online articles and blogs were selected to explore the needs, expectations and requirements of attendees when participating in events. Moreover, the services and technology used by participants before, during and after an event were researched in order to identify their channels of communication and touch points during the user journey.

Similar solutions were researched in order to identify what is already out on the market. Early in the process, the main focus was to find out about how existing solutions can help guide attendees before, during and after the event period. Later on, the focus of the solution was changed to focus more on helping organizers plan and manage conferences. Therefore, another research was carried in order to find how existing solutions help organizers in the conference industry.

### 5.2.1. Analysis

After familiarizing ourselves with the domain, insights were collected and analyzed using the KJ method. This analysis was helpful to make more sense of the research and also to help in preparing the interviews that were conducted later on. The method was applied by firstly writing all the insights on post-its silently and then discuss them together one by one. After having all the post-its on a wall, similar ones

were grouped together and labeled with different category's names as it is described below and visualized in Figure 5.2.



Figure 5.2: KJ Analysis and categorization

- **Event organization:** all the activities defined when setting up the event. Within this category, there is the event vision, which is a list of requirements that shapes the style and content of the event, function sheets, timeline and guest lists.
  - *Activities:* requirements needed, map out an overview of the main aspects and consider weather, festivities and time.
  - *Technology goals and desires:* needs and expectation of organizers in relation to the different tools and services used.
- **Stakeholders:** third parties such as staff, sponsors, media and PR services with their needs and motivations in relation to their participation in the event
- **Food and beverage:** suggestions for organizers such as making sure that there is enough liquor, being creative with the menu, taking into consideration meals for latecomers and including vegetarian or gluten-free alternatives.

- **Location (venue):** several attributes related to the venue like capacity, online reviews, facilities and services available, network availability, accessibility, parking and public transportation, availability and nearby attractions.
- **Hotels:** attributes such as available services (airport shuttle) and capacity. When the venue selected for the event is not a hotel, then nearby hotels have to be considered.
- **Transportation:** when it's included in the package of the event, can be arranged by land with buses, trains, cars and boats or by air. In any case, it should be enjoyable and part of a memorable event.

This analysis was carried in two iterations in order to define the categories and subcategories further on. The analyzed data was used to help in defining what to focus on when collecting information from the target group. The possibility to attend and observe how people interact at conferences was discussed, but with the available time and options, there were no conferences available. Accordingly, interviews were planned in order to learn more about the target group and dig deeper into specific aspects.

### 5.2.2. Interviews

Semi-structured interview questions were prepared for both attendees and organizers. All the questions can be found in Appendix 1. The main reasons for choosing semi-structured interviews were to have the flexibility of digging deeper into specific areas and to allow the interviewees to lead the conversations. The duration of interviews for the attendees was planned to be thirty minutes, while for organizers it was planned to be forty to fifty minutes.

The goal of interviewing attendees was to find about the main problems that they encounter before, during and after attending a conference. In order to do so, the questions were formulated to cover, how do they find out about the conferences that they have attended, what were their main motivations for attending and what do they remember the most out of these experiences. To achieve that, the questions were structured to start from a general level moving towards more defined areas. On the other hand, the goal of interviewing organizers was to understand more about their decision making process in order to plan and manage a conference. To do so, the focus was on how do they choose different services, what are the attributes they are looking for, how do they communicate with different third parties and what tools are

they are currently using. Therefore, the planned questions covered different aspects, before, during and after a conference takes place.

Five interviews were carried out with organizers and five interviews with attendees. The interviewees were selected from different companies, with the help of Humblebee, and they had different roles within those companies. The participants were selected based on their roles in the companies, number of conferences planned in the last two years for organizers and number and types of conferences attended in the last two to three years for attendees. An important aspect was to have a relaxed environment for the interviews, therefore, eight interviews were conducted in quiet conference rooms within the company building. The other two interviews, instead, were conducted through the phone because of the availability of the participants. The interviews were not recorded because some people might feel not comfortable when doing so. The session was set up with one of the team members asking the questions and the other taking notes to document the answers given. The one who was taking notes was also allowed to ask some follow-up questions when needed.

After all the interviews were conducted, the data was analyzed using the KJ method. Similar insights were then collected together, marking the points that were brought up in different interviews, to put more emphasis on them. After that, this analysis was combined with the first one from the research phase in order to refine it further, as visualized in Figure 5.3.



Figure 5.3: Combined KJ Analysis from research and interviews

The main tools and softwares used by organizers while planning an event have been explored during the interviews and they were grouped as a separate category. The main services used are excel files, collaborative environments, email and CRM (content relationship management services). Excel files are used to keep track of all the tasks, deadlines, activities, expenses and lists of attendees with related preferences or allergies. Collaborative environments are used to share files between the team and the main one used is SharePoint. Email is the main channel used by organizers to communicate with third parties and attendees and CRM services are used to manage the internal employees' data.

In the end of this analysis, the most important aspects that attendees remember the most out of attending a conference were identified as: speakers, venue facilities, venue location, learning outcome, mingling party and any unexpected event that takes place.

**Six important factor to consider, in order to improve the overall experience of attendees, are:**

- ***Choice of speakers:*** speakers are one of the most remembered parts of a conference, therefore, organizers should cherry-pick them based on the content and relevance.
- ***Venue facilities:*** services and activities available during the event are highly considered by participants. For example: if the organizer will include a spa in the event then this might positively affect attendance.
- ***Venue location:*** in terms of city, style or popularity affect the choice to participate or not in the event.
- ***Learning outcome:*** participants value if they can learn new things at the event.
- ***Mingling party:*** used to connect with other participant and discuss different topics presented at the conference. Organizers should facilitate the networking sessions and create appropriate atmospheres in terms of setup and choice of food.
- ***Unexpected event:*** unusual activities or entertainment sessions create energy and positive reactions from attendees. Organizers should have great care into choosing activities that will be remembered.

### 5.2.3. User journey mapping

There are many different activities that need to be carried to both plan and attend a conference. Early in the process, in order to organize and simplify the journey, the activities were divided into three different phases. Before an event takes place, during an event and after an event. However, after further analysis, it was clear that breaking down, even more, the journey phases was needed. Therefore, two journey maps were created, one for the attendees and one for the organizers. This helped to compile the findings that were collected from the research phase.

#### 5.2.3.1. Attendee's journey map

The attendee's journey map is divided into six different phases: know, register, prepare, travel, attend and conclude, as visualized in Figure 5.4.

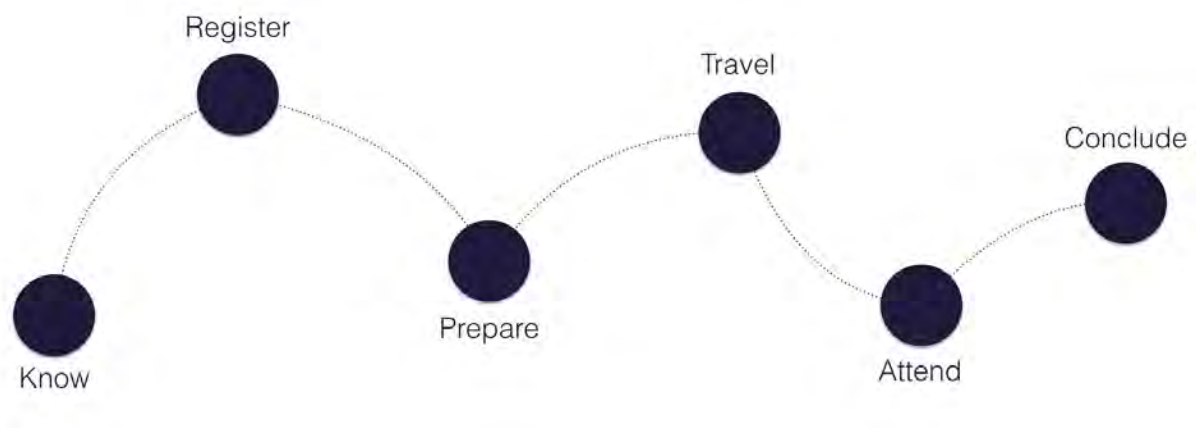


Figure 5.4: The phases of the attendee's journey map

The *know* phase includes the attributes that will help the user decide whether to go to the event or not. If the attendee wants to participate, he/she needs to communicate personal data, preferences and select available options, these attributes are grouped under the *register* phase. Sometime before the event, it's time for the *prepare* phase where the user collects everything he needs in order to go to the event. The *travel* phase, instead, includes the information that the user need to know in order to reach the location. The day or days of the event are grouped in the *attend* phase and all the post-event activities are considered part of the *conclude* phase.

#### 5.2.3.2. Organizer's journey map

The organizer's journey map is divided into five main phases: define, plan, act, follow-up and maintain, as visualized in Figure 5.5.

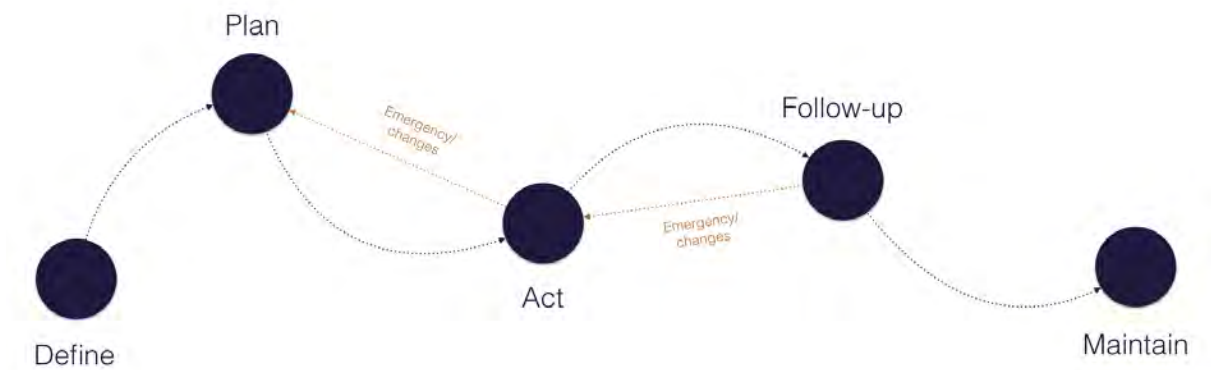


Figure 5.5: The phases of the organizer's journey map

The organizer starts with the *define* phase, where essential attributes of the event are defined, from the goal to the target group that should be reached through the event. These attributes are then used to *plan* all the aspects that will build the event, such as speakers, venues or photographers. The *act* phase is then used to put the plan into action by creating agreements with third parties and communicating with attendees. The day or days of the event are grouped under the *follow-up* phase where the organizer needs to make sure everything runs smoothly or take action in case of emergencies. The last phase, *maintain*, includes the activities used to maintain the relationship with the attendees after the event.

By the end of the research phase, a decision was made to shift the focus from creating a companion app for attendees, to create a planning tool to help organizers plan and manage an event. The decision was made after identifying that there is a huge need for event organizer to have a service that can help them manage all the aspects of an event from one place.

#### 5.2.4. Personas

In order to model the target group, two different personas were created from the findings collected during the different interviews.

The primary persona, as visualized in Figure 5.6, was created to model the organizer who is going to be the main user for the designed service. This persona is a receptionist of a medium company who is responsible, among other tasks, to organize two internal and one external conferences per year. The goals, activities, desires and frustration has been identified by focusing on the tasks she carries when planning these events.

# ANNA ERIKSSON



**Age:** 36

**Occupation:** Receptionist

## Short intro

Anna is an extrovert, active and always organised woman who lives in Gothenburg. She always need to have her phone or laptop next to her in order to keep track of all the tasks and make sure everything runs as planned. She organises 2 internal events and 1 customer related conference per year. The size of the events range between 50 and 500 attendees. When the number of participants is higher or the venue is abroad she asks for support from an external agency to help her organise the transportation and accommodation. If something unexpected happens, she usually don't have a plan B, but she always solve the problem.

## Goals

- Being on top of all tasks (everything runs smoothly)
- Make sure that everyone get the relevant information
- Fulfil tasks that she gets from the manager
- Achieve the intended goal of the conference
  - Plan the conference without any obstacles

## Main activities

- Plan tasks related to the event (meeting, milestones, agenda)
- Tracking
  - Sending out invitation
  - Handling registrations (allergies, preferences, who is coming)
  - Set and keep track of the budget
    - Finding and contacting venues, caterings and speakers
  - Who is responsible for what
- Communicate with different parties
  - Keep track of confirmations

## Feelings/Desires

- Being in control (time, tasks, communication)
- Keep info related to certain projects in an accessible place
- Remember everything /don't forget

## Frustrations/Problems

- Endless to-do lists
- Clear a task done by someone else
- People don't confirm receiving information
- Manage/ find contact info of different parties in different places
- All agreements should be communicated in a written form
- Lots of interruptions during the day

## Tools used



Excel



SharePoint



Email



To-do list



Google



Social media

Figure 5.6: Primary persona, Anna Eriksson

The secondary persona, displayed in Figure 5.7, was created in order to model the attendees whom the primary persona is going to communicate with. This persona is a project manager of a tech company who participates in one internal and two external conferences per year. His main motivations for participating in internal and external conferences are, respectively, networking with colleagues and business opportunities.

The persona is a powerful method to define the details of the target group and keep the focus on how the service fits within their context and knowledge. The two personas entail three different parts. The first part consists of personal information such as name, age, small introduction and role. The second part consists of goals that they are trying to achieve, main activities that they carry, desires that they want to fulfill and the frustrations that they encounter when trying to reach their goals. The last part is about the tools that they are using and how skilled they are with these tools.



Figure 5.7: Secondary persona, John Nilsson

### 5.2.5. Brainstorming workshop

A workshop was planned and carried together with a team from Humblebee. The participants of the workshop were: the main UX designer, two UI designers and us. It was important to have different competences to get different perspectives on the problem. The main goal of the workshop was to get as many ideas as possible in different categories that were selected beforehand. In order to do so, the method 6-3-5 was used with some modifications. Each participant had sticky notes and a marker in front of him/her. First, the problem/category was selected, then, the timer started for two minutes. Each participant had to write as many ideas as possible in that amount of time. When the two minutes were over, each participant said out loud his/her ideas while sticking the notes on the board. By the end of the workshop, there were many ideas related to different categories. Some of the ideas were similar, so they were combined together. Pictures were taken during the workshop and later on, all ideas were transcribed digitally.

By the end of this workshop, many different solutions for the main persona' problems were identified, as visualized in Figure 5.8. The solutions were categorized into different categories:

- **Plan seating:** to help organizers easily plan seating for attendees. This can be achieved by easily categorizing attendees and recommendation of different options on how to do so.
- **Information spread over different channels:** to help organizers have all the conference related information in one place. Some solutions here is to integrate their email address and group related parties in one place.
- **Finding third parties:** help organizers find different services for the conferences such as venues, catering and speakers. This can be done by providing different options on one platform, making it more easier for them to book services and track agreements.
- **Availability:** help organizers easily find out the availability of different services without the need to contact them. Some solutions that can help overcome this problem is to suggest different available services based on the conference date.
- **Cancellations:** how to effectively deal with cancellations from different parties. A solution can be to automatically notify the interested parties without the need of the organizer.
- **Updates and communication:** be aware of all the changes that might occur to the conference. Solutions here might be the possibility to get and send reminders to different parties. Another solution can be a chatbot that demands an answer on important questions.
- **Track allergies and preferences:** easily keep track of attendees' allergies and preferences. Solutions here can be to automatically connect attendees with the catering and/or registration can be done using a chatbot that daily reminds attendees to fill out missing information.
- **Time-consuming:** carry out main activities in less time. This can be achieved by providing different ready templates and recommendations of different activities.
- **Guide attendees during the event:** provide all the relevant information to attendees throughout the journey of the conference. One solution is to help attendees quickly check in for a conference without the need to stand in a queue, using their smartphones.



Figure 5.8: Brainstorming workshop

Three important factors to consider, in order to improve the overall experience of organizers, that were identified so far are:

- *Make use of existing services*: integrate services that organizers are already familiar with such as mail and excel.
- *Suggest different tasks*: help organizers have an alternative plan ready in case of any changes.
- *Reduce time to carry out tasks*: connect different parties together without the need to include organizers in between.

### 5.2.6. Prioritization matrix workshop

After the brainstorming session, the most valuable solutions for the target group needed to be selected, so a prioritization workshop was carried. The participants of the session were the main UX designer, UI designer, technical director from Humblebee and us. The workshop was prepared by writing down all the categories on sticky notes with their features on small pieces of papers grouped to it. Also, the main persona was printed and placed on the wall. After that, a matrix was drawn on the board with two main axes, customer value and implementation complexity with a scale from one to five. Quick prioritization of categories was carried to identify which categories to start with, in order not to rush important points in case there was no time left. Then, for each feature, a quick discussion was carried to identify how important for the main persona it is and how complex it is to develop. Based on the

result, that feature was placed on the matrix and next feature was then picked and discussed. The result is visualized in Figure 5.9.

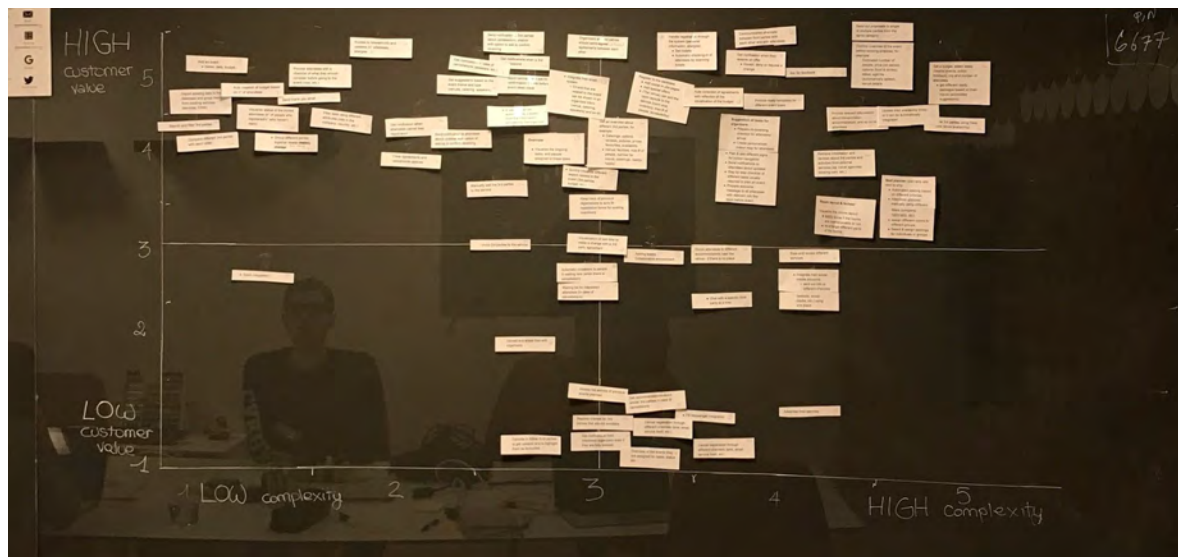


Figure 5.9: Prioritization matrix workshop

There were some quick discussions when someone of the team disagreed but having many different backgrounds and expertise made it easier and faster to map out all the features. After the workshop, all the features were added to an excel file with their respective customer value number, easiness of implementation value and macro-category to which they belong to. All the features with their respective values can be seen in Appendix 2. After that, all the data were analyzed in order to decide which features should be included, may be included and the features that will not be included. This helped in defining what to focus on when planning different design sprints.

### 5.3. Design sprints

From the list of features defined in the prioritization matrix, the macro-categories were used as a basis to plan different design sprints. The sprints were planned by applying the Google Sprint methodology with some minor changes in order to reflect the needs of the team and the requirements of this specific project.

Five different sprints were planned in order to focus on one specific aspect at a time:

1. Conceptualization of the planning service
2. Setup and overview of an event
3. Third party selection and confirmation
4. Invitations and guests management
5. The assistant and organizer relationship

The order of the sprints was arranged in order to build the main structure first and then to add specific aspects on top of it. The first sprint was a little different from the others since it focused more on a conceptual level. However, all of them had a similar structure, composed of six phases: inspiration, ideation and quick sketching, detailed sketching, decision, prototyping and testing. Each of these phases was carried by applying different design methods and some of them involved the participation of developers and designers as well.

The setup of each sprint involves placing on the wall the long term goal of the project and the personas, in order to keep the focus while working on the different sections.

### **Inspiration**

The inspiration phase is usually held to kick start the sprint. Everyone in the team researches and takes notes individually about different services or tools that they like and the reason behind liking it. After that, each participant presents the respective findings to the group while another member quickly sketches the ideas on a whiteboard. By the end of this workshop, different inspirational sketches are mapped out on the wall and they will be used for the ideation and sketching phases.

### **Ideation and quick sketches**

Followed by the inspiration phase, the ideation phase is carried to transform ideas and notes into possible solutions. It starts with the facilitator reminding everyone about the main goal of building this service, to refresh their minds on what to focus on. After that, each member starts collecting notes and initial ideas individually by looking at the material available in the room like inspiration sketches, research findings, long-term goal and personas. Then, each member creates individual sketches of different variations of the solution.

### **Detailed sketching**

In the detailed sketching phase, each member of the team chooses his/her favorite sketch from the different variations that were created before. Still individually, each member refines the sketch while working out the details. The main goal of using this method is to have a self-explanatory solution that is going to be presented and evaluated by everyone.

### **Decision**

After the individual sketching phase, for each category, all the solutions sketched by everyone are presented and discussed. After the discussion, each member picks his/

her favorite ideas from the different sketches. It can be the whole solution sketch or just a specific part of it. The decision is achieved by silently voting on the different concepts to choose the one to prototype further. However, the decider can always have the final decision even if doesn't have the majority of the votes.

### **Prototyping**

After deciding on the concept, an interactive lo-fi prototype is designed in order to test it later on. The lo-fi prototype is usually built by using an interface design tool. The main goal is to transform the concept into a more concrete solution by adding details and defining the user flow. The lo-fi prototype is then developed to be interactive in order to make it more realistic for the user test.

### **Testing**

In order to test the concept and get feedback as early as possible, think-aloud user testing is carried with one user. During the session, the user needs to follow some tasks that are identified beforehand.

The feedback identified during the user test is analyzed by the team and then incorporated in the prototype when appropriate.

## **5.3.1. Sprint 1 - Conceptualization of the planning service**

There were two tracks that needed to be explored in order to define the core of the service. The first track was to create a "traditional" planning service and the second one was to plan the service around a chatbot. The term *traditional* is used in this context as a way to define what is considered nowadays a planning service, a digital tool to help organizers plan their events by organizing files and keeping track of different tasks. This is usually achieved through to-do lists, CRM software and collaborative environments. On the other hand, a bot based services, is considered as a planning service where an organizer manage an event through the help of a virtual assistant. In order to see the potential of both concepts, a decision was made to quickly prototype both of them to test the overall interaction of the two concepts.

Since the first design sprint was planned in order to help us decide on which track should be developed further, two different sub-sprints were carried out, one for each track. For each sprint the following methods were used: inspiration method, notes gathering, paper sketching, storyboard, lo-fi prototype and user testing. In both sprints, the inspiration methods, notes gathering and paper sketching have been

done individually in order to combine data and create a complete solution by focusing on the overall interaction and flow. When everyone was finished with their respective paper sketches, a dot voting method was carried to decide on the best aspects. From that, a storyboard was created to explore different possible interactions and the overall flow with the service over time. The storyboard was created in a group session. The first scene illustrates how the persona might know about the service, followed by combining different parts from different solution sketches created before. The storyboard helped in creating a logical journey of a user interacting with the intended solution and it was also the basis for the lo-fi prototype that was designed later on.

### 5.3.1.1. Traditional planning service

The storyboard created for the traditional planning service is visualized in Figure 5.10.

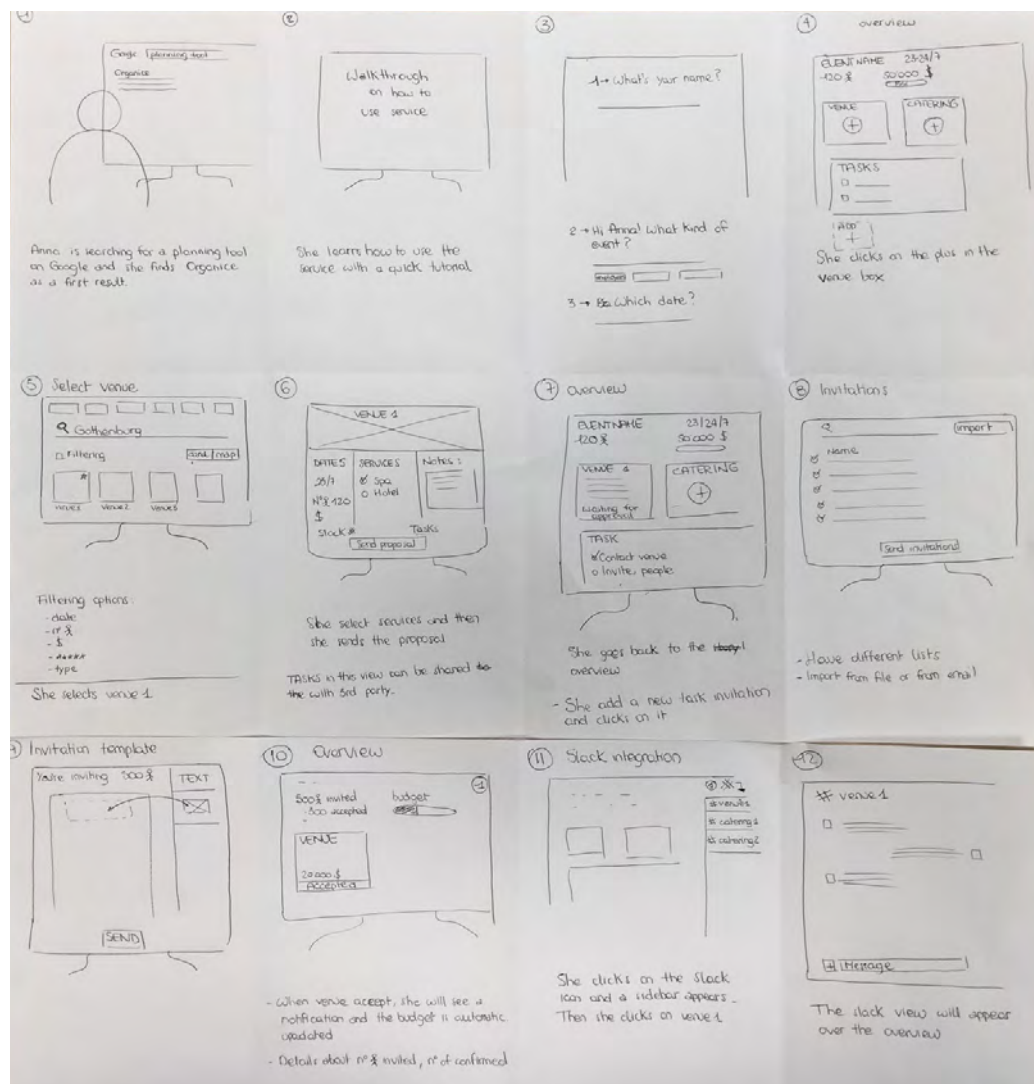


Figure 5.10: Traditional planning service storyboard

The first touch point with the service occurs in Google when the user discovers it for the first time. A walkthrough is presented on the landing page and then a quick form that will guide the user through the setup of the event. Here, some questions regarding the location, date, type and number of attendee expected are asked and the answers are then used to customize the main interface. The overview of the service is composed of dynamic blocks: event details, venue, catering and tasks. By clicking on the venue block, a select venue page is displayed where the user can look for alternatives and filter on them. When selecting a venue a detailed page is shown and after selecting the services wanted, it's possible to send a request for proposal. Back in the overview, the details about the contacted venue are shown in the respective block and the corresponding task, contact venue, is automatically cleared. A new block, guests is added and the attendees are invited to the event by importing a list of email addresses or by connecting the email account. After that, the invitation is designed by dragging and dropping components on the layout page. In the overview, statistics related to how many people registered for the event are shown in real time. In the header bar on top of the interface, a Slack icon allows easy access to the communication with different channels, one for each third party.

A lo-fi prototype was then created using the storyboard to define all the details and the overall flow. In Figure 5.11, some screens illustrate the main aspects of the service. From the low-fi prototype, a user test was planned in order to validate the assumptions through a list of tasks that the user completed during the session. The tasks that were communicated before were set to make sure that the user will test the whole concept. The results from the user test were interesting and there were a lot of thoughts about the feeling of using such a service. The trust in using this service was one of the biggest concern of the user tester in relation to booking third parties or sending hundreds of invitations from it. For example, one comment was: "I would feel uncomfortable sending invitations from here, they should be sent directly from my email". On the other hand, the user also said: "You want to get away from all those excel files, I see this as the future of booking and it's great the all the event information are here, in one place".

Three more important factors to consider, in order to improve the overall experience of organizers, are:

- *Create feeling of trust:* integrate reliable third parties and display sufficient information from different sources and reviews. And clearly state what will happen with the information that will be imported into the service.
- *Clearly communicate outcomes of actions:* inform the organizers with clear labeling and tips about what will happen as a result of a certain action, like a click on a button.
- *Aggregate information in one place:* allow easy access and management for different sources of information that are related to a specific event

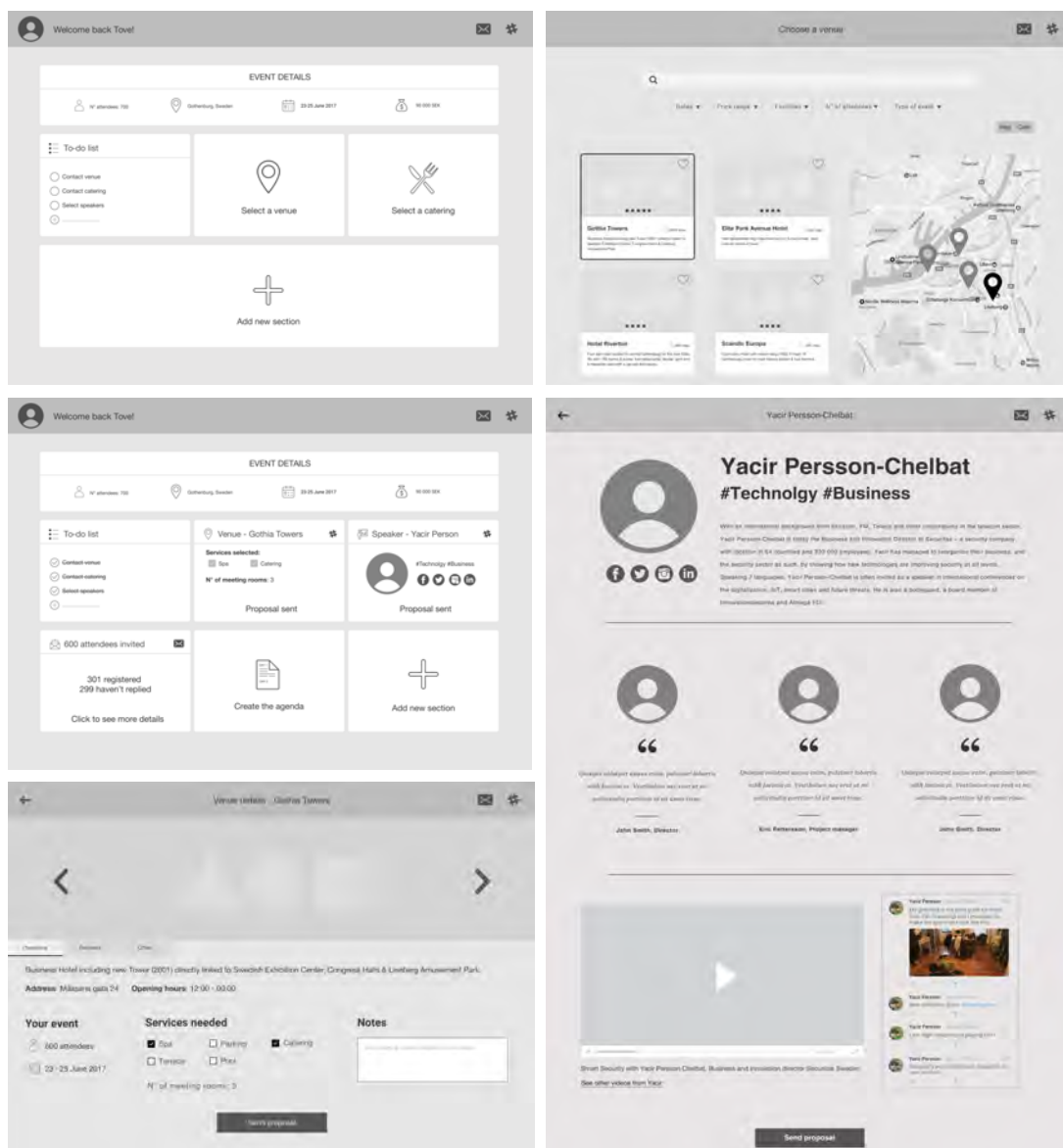


Figure 5.11: Lo-fi prototype of the traditional planning service

### 5.3.1.2. Bot-based planning service

The storyboard created to illustrate the interaction between the user and the chatbot to plan a conference is shown in Figure 5.12.

The main idea of this scenario is to plan a conference by chatting to a bot in a messaging platform like Messenger. In the scenario, the organizer receives a message from a friend who suggests her to try a new service to plan conferences. From there, she starts to communicate with the bot which asks her some basic questions like where does she want to have the event, when and for how many people.

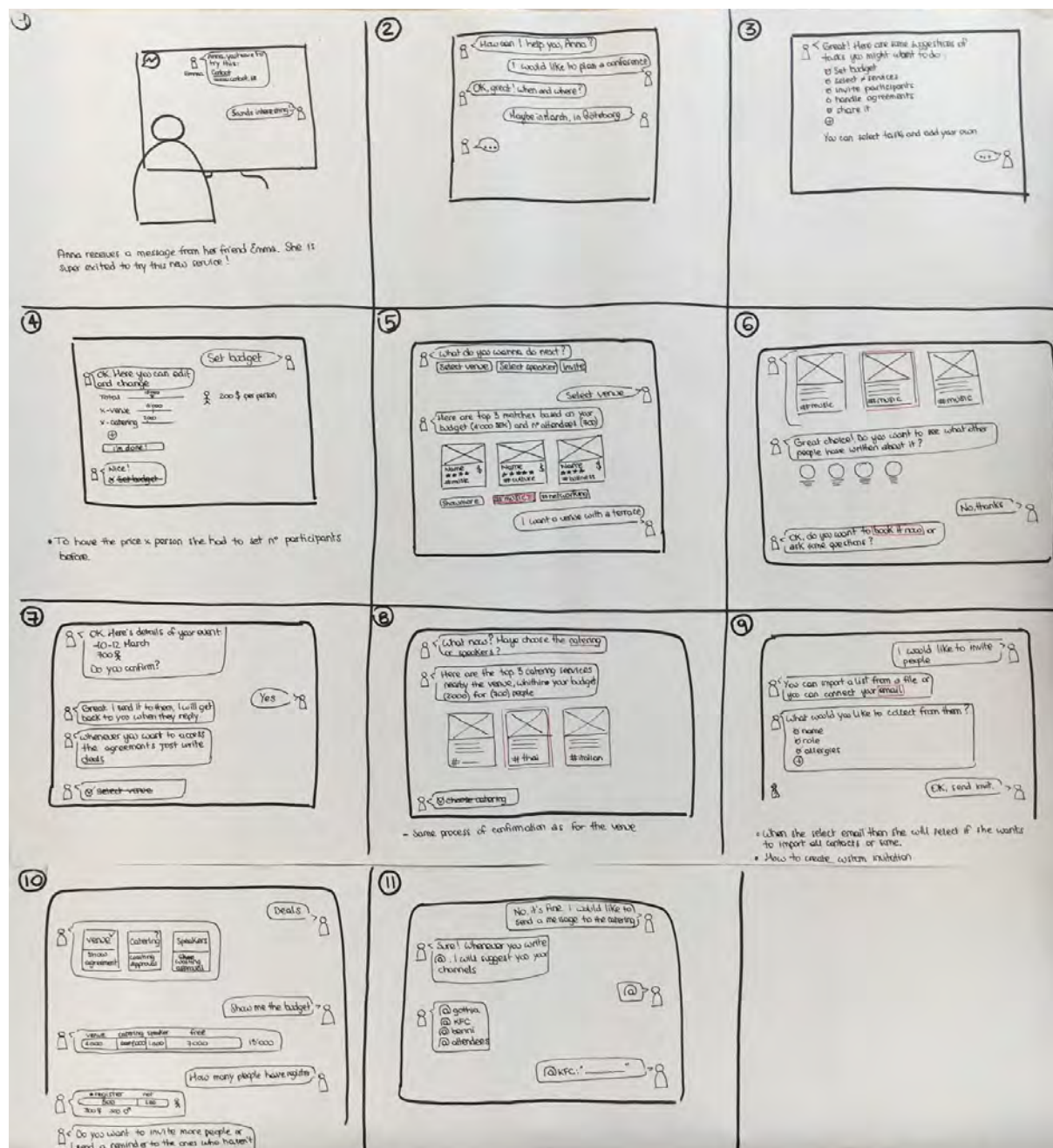


Figure 5.12: Bot-based planning service storyboard

Then the bot suggests some actions that the organizer can do in order to guide her through the entire process. For example, the organizer can type *select venue* and the bot will suggest three different options with relevant details. In the same way, the organizer can ask about speakers, catering services and other third parties and a selection of personalized alternatives is provided. By typing some keywords the bot is also able to provide an overview of agreements, budget or number of attendees who registered for the event.

When the storyboard was created, a group discussion together with a developer and a UX designer from Humblebee was carried out. Both storyboards, the *traditional* service and the bot based one, were taken into consideration in terms of efficiency and relevance for the organizer. As a result of this discussion some important aspects were identified: the chatbot should live in its own environment, like messaging apps, the event related information should be presented on a wider screen and the information should be accessible both manually or by asking questions to the bot.

To validate the assumptions defined in the group discussion a hi-fi prototype of the interaction between the assistant, the attendees and the organizer was created. This prototype shows four different scenarios where the assistant can be helpful. Some screens from the prototype are shown in Figure 5.13.

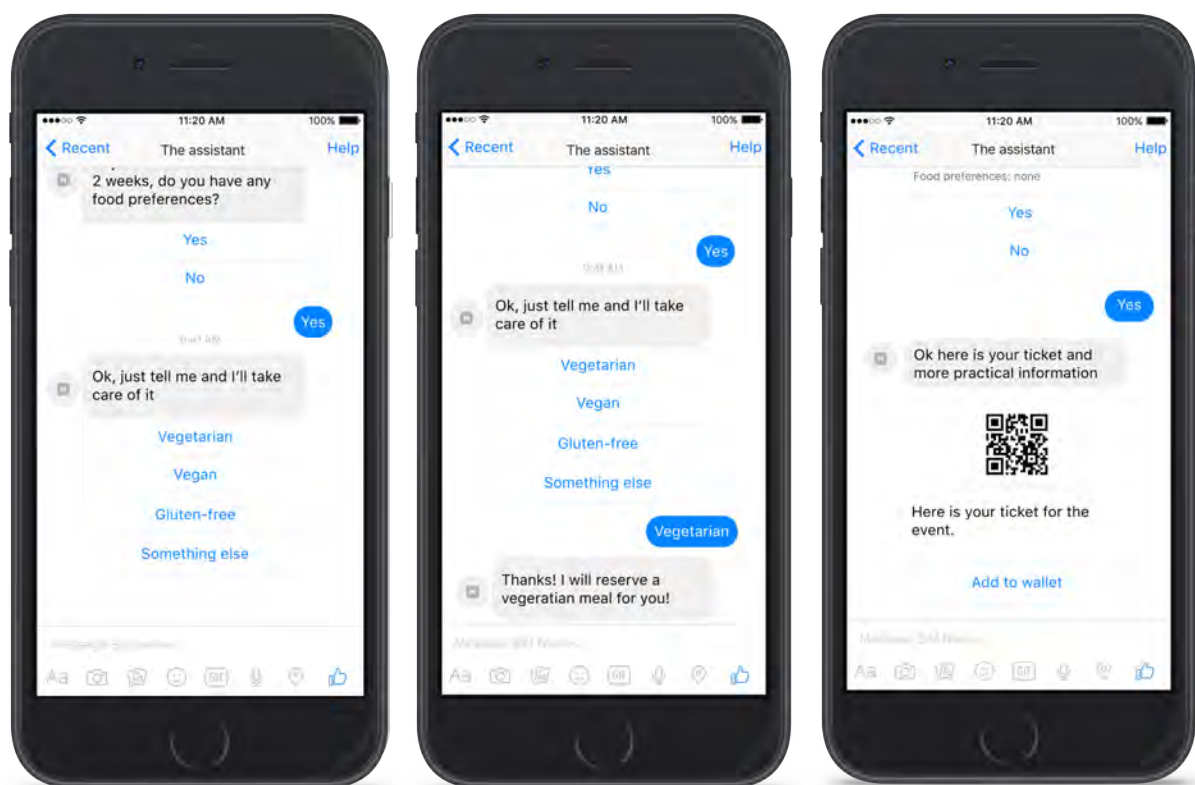


Figure 5.13: Hi-fi prototype of the bot-based planning service

This prototype, together with the one realized for the traditional service, was used to carry a user test. The user test was carried to first evaluate the traditional prototype, then to ask some questions in a semi-structured interview and finally to evaluate the assistant prototype.

During the first part of the user test, a lot of details were discussed in relation to details about third parties selection and privacy concerns when importing lists of contacts. In regards to invitations of attendees the user said: "I would like to see the preview there, send it to my email and also see it from my mobile phone. And then I will then send it to attendees". She also felt it was great to have always the budget in front of her and the results of the search based on the budget available for that service.

During the semi-structured interview, the user was asked to define the personality of a potential assistant to help her in her during the planning and management of a conference. The user was also asked to define which tasks will she feel comfortable delegating to him/her and which ones she wants to deal with by herself. The answer about the personality of this assistant was a humble and effective person with great knowledge about the domain that can manage attendees. The user also said: "It's very important that the guests feel 'invited' and 'welcomed'; they should feel that they are been taken care of". On the other hand, she said she wanted to be the one taking to the venue, deal with the budget and sign agreements.

In the last part of the user test, the hi-fi prototype that illustrates different scenarios between the assistant, the attendees and the organizers was used. The user was really positively surprised and convinced that this service can be extremely helpful especially for big events where there are a lot of attendees involved. Moreover, even if in the interview she said that she wanted to be the one dealing with venues, she said that it's great if the assistant does it and "it's good that you can see the conversation between the assistant and the third party, then if you have second thoughts, then you can always change them."

In the end of this first sprint, it was discussed that instead of a chatbot, the service should be built around a personal virtual assistant. This assistant will be responsible for dealing with both third parties and attendees but the organizer will always have control over it. The virtual assistant was named Willy, for its intrinsic willingness to help its users. Moreover, it was decided that the planning service should have a more *traditional* desktop based layout with an integrated assistant, Willy, that can provide

customized results, deal with third parties and communicate with attendees. Willy will communicate with attendees, through a messaging platform, in order to ask for food preferences and then communicate the results to the catering service as an example.

**Five more important factors to consider, in order to improve the overall experience of organizers, are:**

- *Let the organizer feel in control:* always provide a way for the organizer to know what's going on, get the latest updates and decide which action to undertake next.
- *Provide recommendations and personalized alternatives:* integrate tailored results that are based on the organizer's input, preferences and budget constraints.
- *Effective or 'empowerment' decision making:* help organizers make more effective decisions by analyzing the data and identifying patterns.
- *Notify the organizer about any changes:* create automatic reminders for last-day changes in relation to third parties with the ability to customize them.
- *Avoid information overload:* show only relevant information when needed and organize information into different categories.

### 5.3.2. Sprint 2 - Setup and overview of an event

The main goal of this sprint was to find the most efficient way to setup a conference and what information to show on the overview of that event. In order to do so, all the factors that were identified before needed to be considered while trying to find new factors that are specifically related to this section. The structure of this sprint was as follow: inspiration, ideation, paper sketches, detail sketching, decision, and finally prototyping.

#### 5.3.2.1. Setup an event

There were a lot of discussions about the best way to setup an event using the service. The first idea was to create a walkthrough to describe the benefits of using the service, and during the walkthrough the users can select different actions that they think are relevant. The main benefit of this idea was that the user will start learning about the service before starting using it. However, this might not be the most 'efficient' way to start planning an event, so it was decided to skip the

walkthrough in the beginning and focus on how to quickly setup an event, as shown in the following Figure 5.14.

Since it was decided that the service is built around a virtual assistant, it was really important to introduce Willy from the beginning. Therefore, the first interaction with the service is going to be with Willy through a conversational UI. This is achieved by directly asking the organizer questions related to the conference, such as date, number of attendees and budget range.

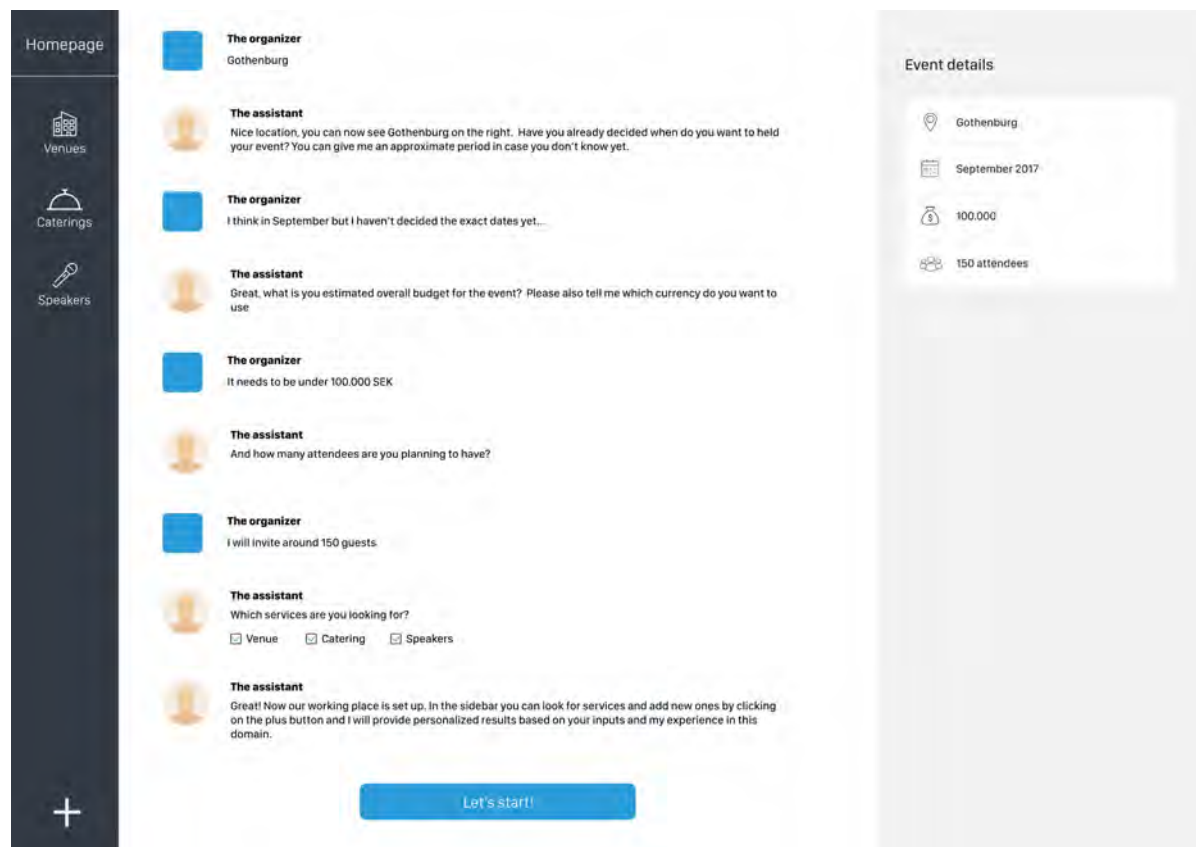


Figure 5.14: Hi-fi prototype of the setup event page

When appropriate, Willy can also provide personalized recommendations based on the user's input in order to help the organizer make informed decisions. After that, the organizer can select what type of services he/she is looking for and based on the selection, the overview is gonna be created in the background. This real-time creation of the overview in the background was designed to provide modeless feedback of the organizer's answers.

### 5.3.2.2. Overview of an event

The overview page created from the inputs of the organizer contains five different parts as shown in Figure 5.15: left menu, Willy's top bar, announcements, tasks and event details. The left menu contains the services that the organizer have chosen in the beginning, with the option to add new services as well. A decision was made to have Willy always available to answer any questions, so it has been placed on the top of the screen and the text visualized in the chat bar will change automatically to reflect any suggestions of tasks to carry. The announcements' section, which includes all notifications and actions required from organizers, are grouped together and can be accessed from one place. Since Willy can handle some tasks, its icon is visualized inside an announcement when it's taking care of it. Moreover, when an action is required from the organizer, the background color of the announcement becomes blue to visually distinct it from the others. The tasks' section, contains all the tasks that were automatically generated based on the input of organizers, with the ability to add new tasks manually. Finally, the event details are displayed with some live indications regarding the guests and current budget.

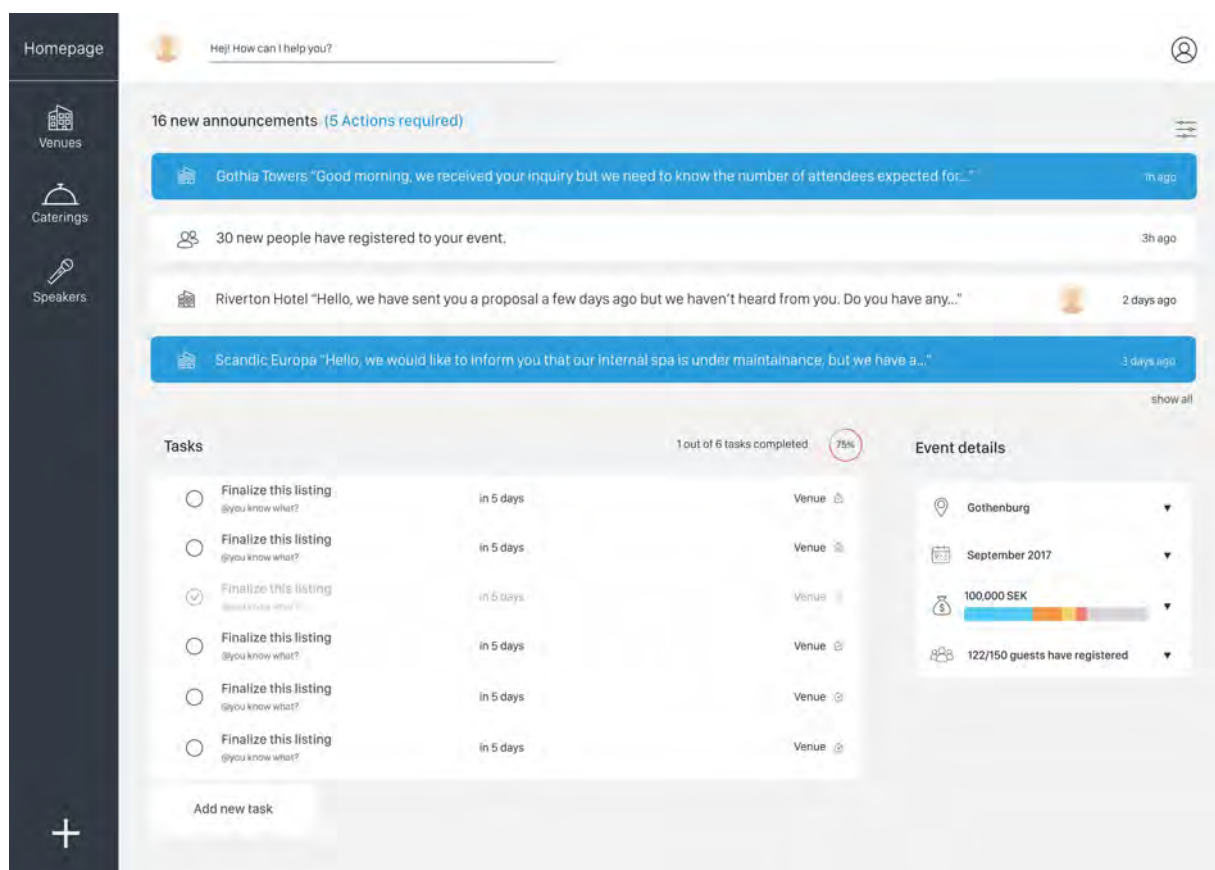


Figure 5.15: Hi-fi prototype of the event overview page

### 5.3.3. Sprint 3 - Third party selection and confirmation

The aim of this sprint was to define how organizers can search for different third parties, get recommendations from Willy, send proposals and create agreements. The focus, other than creating the most effective flow from searching to confirming an agreement, was to define how Willy can guide the organizer, provide personalized results and take care of the communication with the different parties. Under the label third parties, venues, catering services, speakers, photographers and other services are included. In this sprint, it was decided to focus on one of them, catering services, to limit the choice and create a concrete solution that can be adapted to the other categories later on. However, when applying this layout and design choices to other third parties, changes might be needed. The structure of this sprint was: ideation, detail sketching, decision and hi-fi prototyping.

In the detailed sketching phase, two different layouts for how to choose the catering were designed, as shown in Figure 5.16.

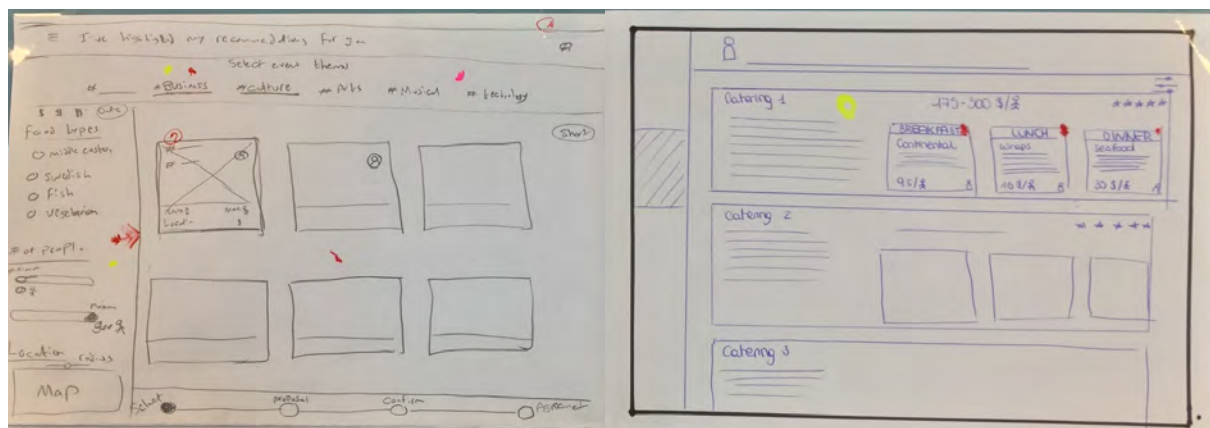


Figure 5.16: Catering overview detailed sketch

There are benefits and drawbacks for both of the solutions. For example, in the first example on the left, the organizer can see more options in one page and decide quickly if he/she needs to go into details. In the second one, on the right, the organizer can see fewer options but with more detailed information regarding these catering services such as pre-selected meals options. For these reasons, it was decided to go further with the second layout, because it can also clearly state Willy's recommendations on the different meal options. The resulting hi-fi prototype of the catering overview page can be seen in Figure 5.17.

Each catering card contains information such as, catering name, address, short description, ratings and a selection of recommended menus available. When Willy's icon is displayed next to a catering service it means that it's recommended based on different aspects such as ratings, guests satisfactions and availability for example. When Willy recommends a catering service, it's possible to directly click on the "Yes send!" button and Willy will take care of requesting the proposal to them. This option makes it easier and convenient for the organizer to ask for proposals, especially when he/she wants to contact more than one service at a time. In this case, a proposal request will be directly sent to the catering and the organizer will see an immediate feedback to reflect the status of the proposal.

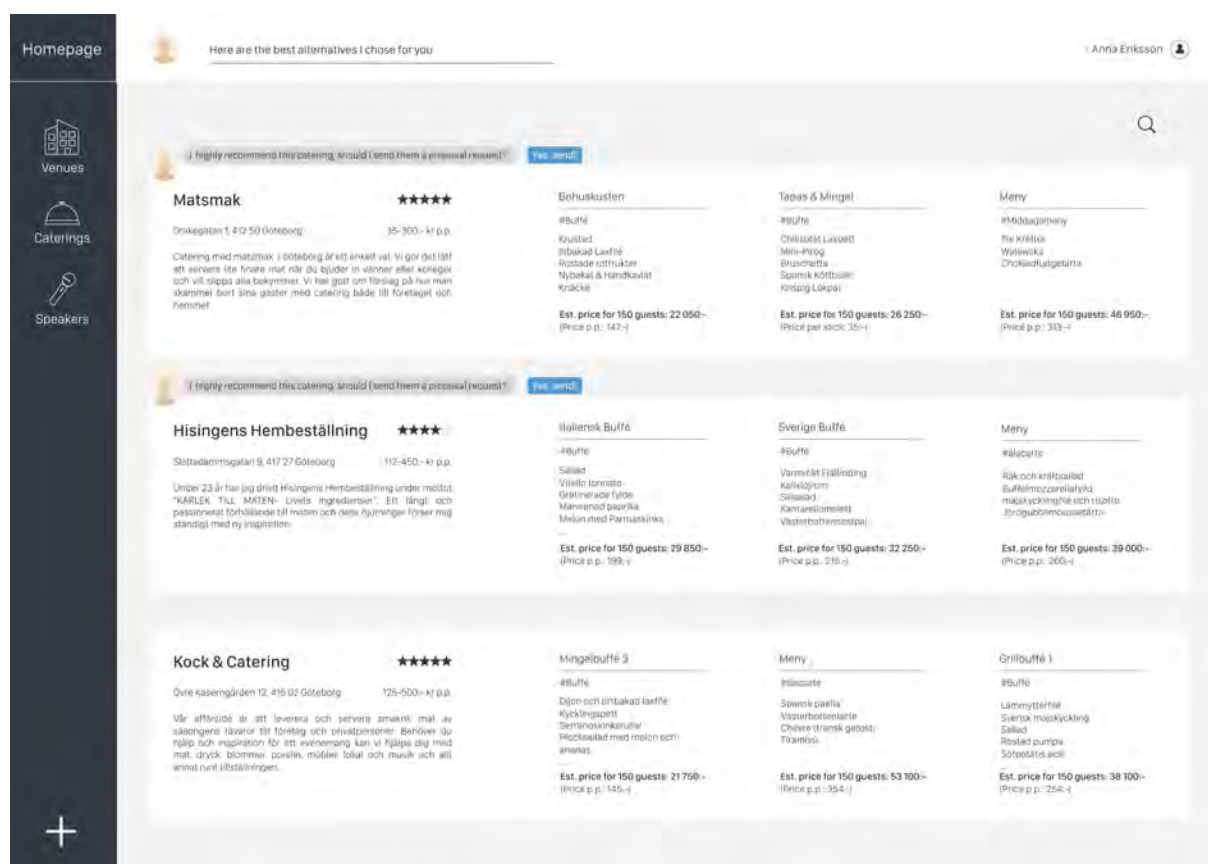


Figure 5.17: Hi-fi prototype of the catering overview page

At the same time, if the organizer wants to see more details regarding a specific catering service he/she can click on one of them and the catering page will be shown, as displayed in Figure 5.18.

In this detailed page, attributes like location on map, menu options, images, policies and reviews are visualized. The organizer is able to either accept what Willy

recommends or manually select meal's options for the desired amount of attendees previously inserted. Moreover, the card on the bottom-right sums up the current selection and the estimated total price before sending a proposal to the catering. If the organizer decides to request a proposal to a catering service, Willy will take care of the communication with it.

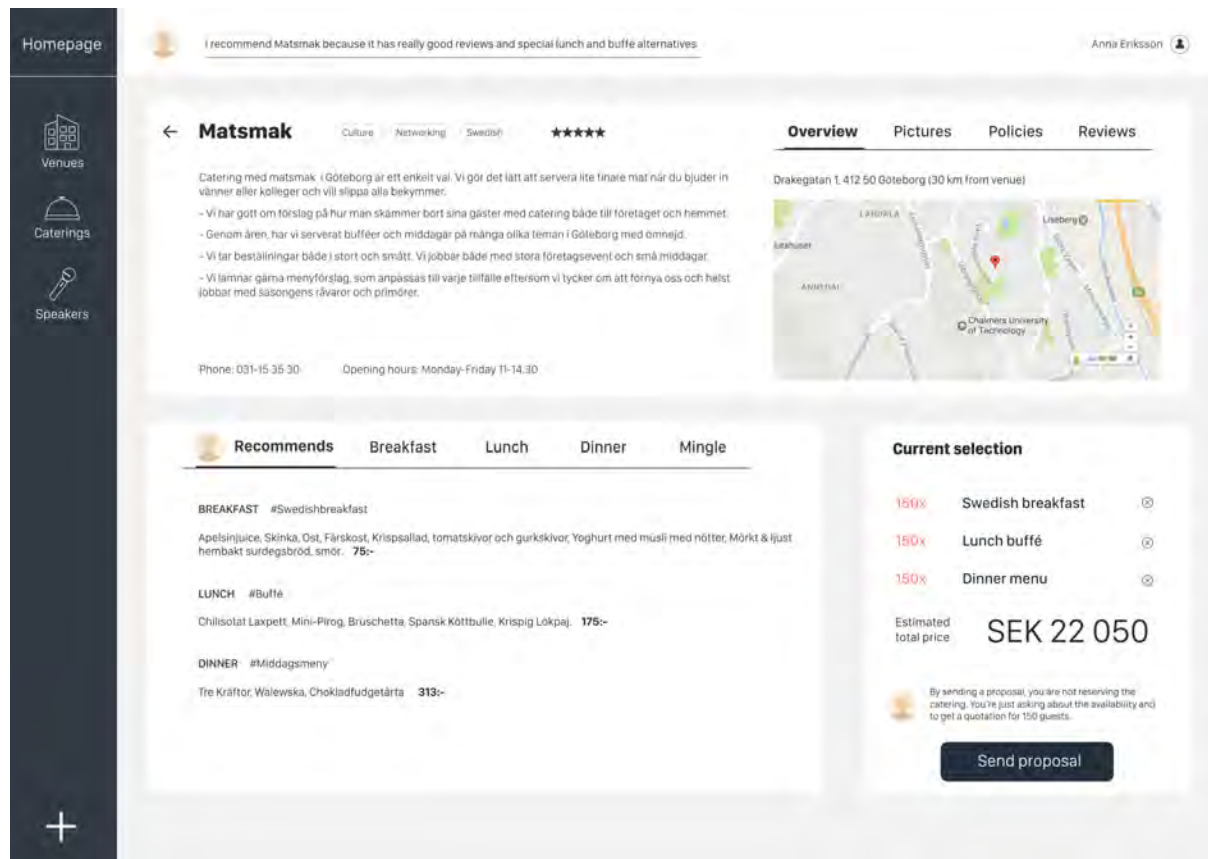


Figure 5.18: Hi-fi prototype of the catering detailed page

In Figure 5.19 an example of the interaction between Willy and the catering service is shown.

In this example, the catering service receives a text notification from Willy informing it about the organizer's request together with some event details, meal's options and the estimated total price for 150 attendees. Since Willy knows how much discount the catering usually offers for 150 people but the requested date for the event it's a really busy period, it suggests to decrease the discount. Based on this tip, the catering replies with a lower percentage of discount and Willy creates then the total price and the proposal in PDF that can be downloaded and sent to the organizer upon

approval from the catering. Willy is, therefore, providing tips to third parties as well and this might create a conflict of interests between the different parties involved.



Figure 5.19: Hi-fi prototype of Willy's interaction with the catering

Another factor to consider, in order to improve the overall experience of organizers, is:

- *Providing relevant information when needed:* give an overview of personalized results and detailed information upon request. For example, quickly show Willy's recommendations and provide more detailed information on why they are recommended when requested.

#### 5.3.4. Sprint 4 - Invitations and guests management

The goal of this sprint was to find out how the organizer should invite attendees to the event and how he/she should manage them afterward. In particular, the focus was on how to select a list of contacts, how to design the invitation and what information should be displayed in order to manage and communicate with the participants. The structure of this sprint was as follow: ideation, detail sketching, decision, hi-fi prototyping and user testing.

It was discussed to include pre-made templates of different invitation layouts in order to make it easier for the organizer to create a professional design. The feedback received in the user test during the first sprint was also taken into consideration, where the user said: “I would like to see the preview there, send it to my email and also see it from my mobile phone. And then I will then send it to attendees”. Moreover, it was discussed to include Willy consistently as in the other sections of the service, by having it proving recommendations and taking care of the communication with the attendees. The result of the detailed sketching phase, as visualized in Figure 5.20.

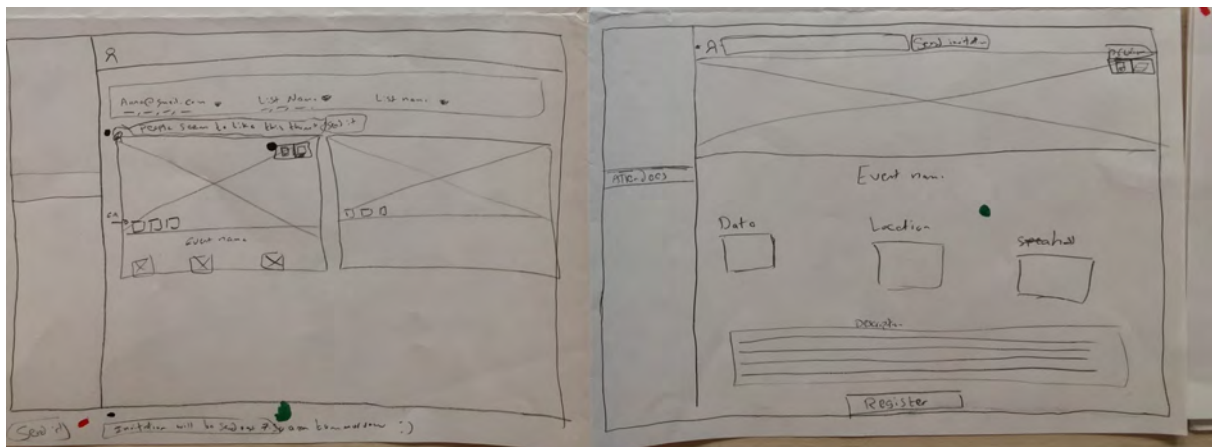


Figure 5.20: Invitations detailed sketch

As a result of the discussion after the detailed sketching phase, it was decided to have one card on top to visualize the different contact lists available and below different template layouts with pre-populated content based on the inputs previously added from the organizer in the service. However, as displayed in the resulting hi-fi prototype in Figure 5.21, it was decided to have a navigation menu on top where the user can move between the invitation style, guests and preview sections.

The user can either select an invitation style and go directly to the guests' selection or click on one of them and go to the detailed page where he/she can modify the layout and the content. The feedback received from the user test during the first sprint was integrated into the service by adding a way to preview the invitation layout. From the preview and send menu, the user can see how the invitation will look like on a desktop, tablet and mobile screens, as visualized in Figure 5.22.

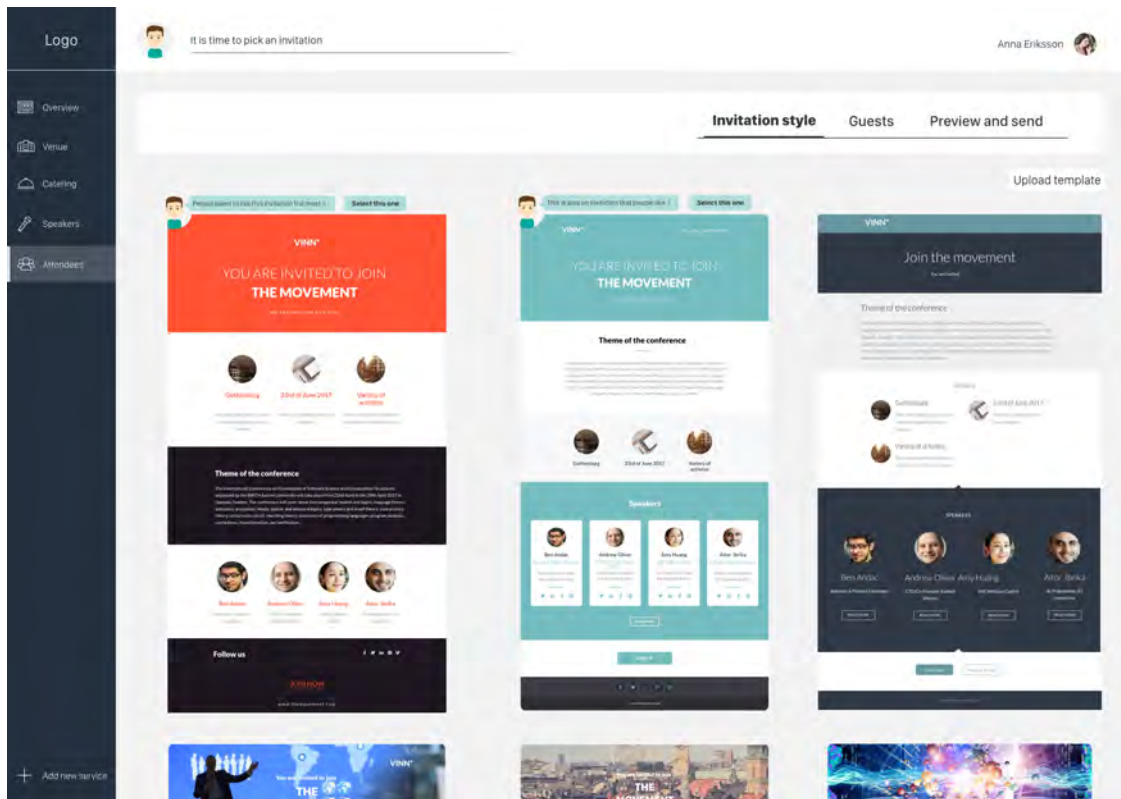


Figure 5.21: Hi-fi prototype of the invitations' overview page

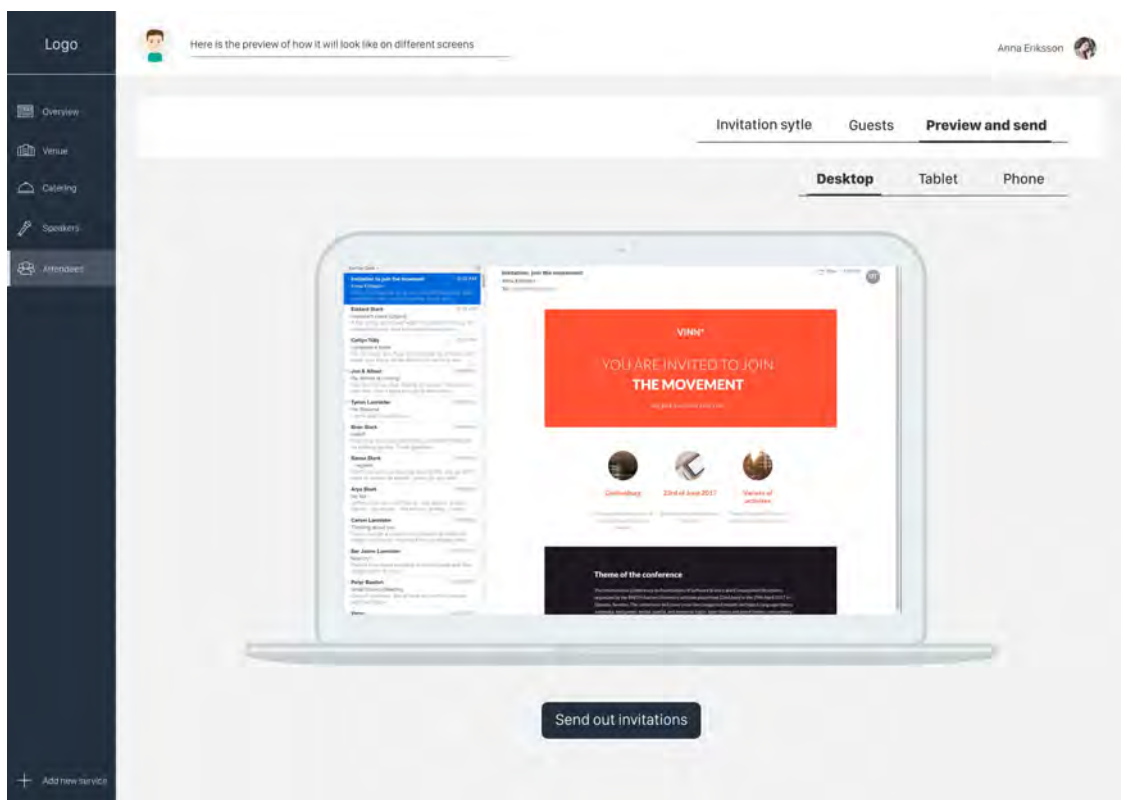


Figure 5.22: Hi-fi prototype of the preview page

When the invitation is sent to the attendees, Willy is responsible for dealing with them, including registering to the event and asking for food preferences. This data will be then reflected on an attendees' insight page, accessible from the sidebar menu.

Another feedback received from the user test in the first sprint was: "It's very important that the guests feel 'invited' and 'welcomed'; they should feel that they are been taken care of". This was included in the solution by letting Willy deal with the each attendee in a personalized way. In Figure 5.23 an example of interaction between Willy and an attendee is displayed.

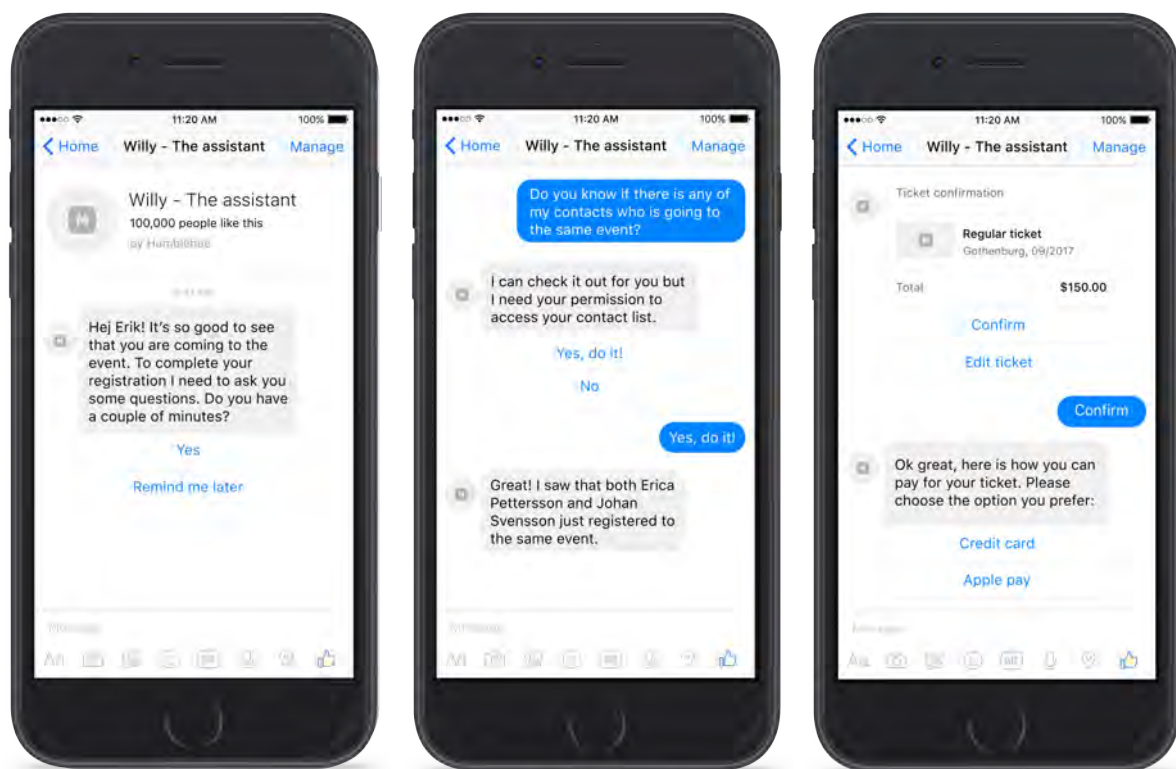


Figure 5.23: Hi-fi prototype of Willy's interaction with an attendee

A user test was then carried by asking the user to navigate through the interactive prototype while following certain tasks. The main goal of the user test was to receive feedback on the overall service and therefore the interactive prototype included all the screens from the on-boarding screens, where the organizer set up the event to the invitation pages. The feedback received from the user was highly positive in terms of easiness of use and accessibility to all the different aspects of an event from a single place. The user also said: "It's great, so easy, and there is no more need of all those phone calls and email...". During the user test, it was also brought up that it might

be really beneficial to divide the tasks in the overview page into categories such as to do, in progress and done. Moreover, the feeling of trust towards Willy was discussed and the feedback received was: “It’s a bit scary in the beginning but if you try it once and it works, then it’s gonna be great”.

**Another factor to consider, in order to improve the overall experience of organizers, is:**

- *Provide pre-made solutions as well as customizable ones:* allowing the organizer to customize his/her actions. will accommodate both beginners and more advanced users. For example: having ready to send templates in the invitation section as well as the ability to modify one of them, or even create your own, will accommodate both less and more experienced organizers in the field of graphic design.

### 5.3.5. Sprint 5 - The assistant and organizer relationship

The goal of this final sprint was mainly to explore how the organizer can access the conversations between Willy, third parties and attendees. It was also discussed how the organizer can take part in the conversation when the assistant doesn’t know how to answer or in case the organizer wants to interfere. Moreover, a section where the organizer can set the settings of the assistant, in terms of level of freedom in answering, was also taken into consideration.

According to a study mentioned by Brave and Nass (2005), humans use the same parts of their brains to interact with humans, so “they activate all parts of the brain that are associated with social interaction”. When we were designing the assistant there were many aspects that needed considerations and examinations from the beginning. For example, how to define the personality and the language of Willy and what are the main characteristics of this assistant. Fogg and Tseng (1999) argue that in order for people to trust recommendations of a virtual assistant, they have to believe and trust it first. So in order to incorporate this into our solution, we had to provide the user a way of overseeing what the assistant is doing and have done. Desai et al. (2009) also recommend to “design an interface where the user can adjust the level of trust in a robot so it can decide more autonomously”.

Some guidelines were created in order to help us be consistent when integrating the assistant. For example:

- The structure of this sprint was as follow: ideation and quick sketches, detailed sketching, prototyping and user testing. During the ideation and quick sketches phases, there was a lot of discussion regarding where the different conversation should be accessed from and how they should be grouped together. Moreover, it was discussed if it was appropriate to include a *log* section, where the organizer can see every activity done by Willy in a chronological order. It was decided to not include it in the solution since a lot of conversations can happen at the same time and a log section can create confusion other than being more appropriate for highly technical users. The result of the detailed sketching phase is visualized in Figure 5.24.

Two different solutions have been sketched and discussed in detail. In the first sketch, all the conversations can be accessed by clicking on the top bar of the interface and an overlay will cover the entire screen. In the left column, all the

conversations are displayed, with the ones that require an action from the organizer on top. In the second sketch, when the organizer clicks on the top bar of the interface an overlay appears by covering only two third of the screen. The sidebar menu of the interface is still visible and it's used to navigate and filter through all the conversations that are displayed in a column on the right side while visualizing the chat window in the middle. As a result of the discussing the two solutions, it was decided that the first layout was more clear and easy to understand but more functions like settings, search and filters from the second sketch should be integrated as well.

The resulting hi-fi prototype is displayed in Figure 5.25.

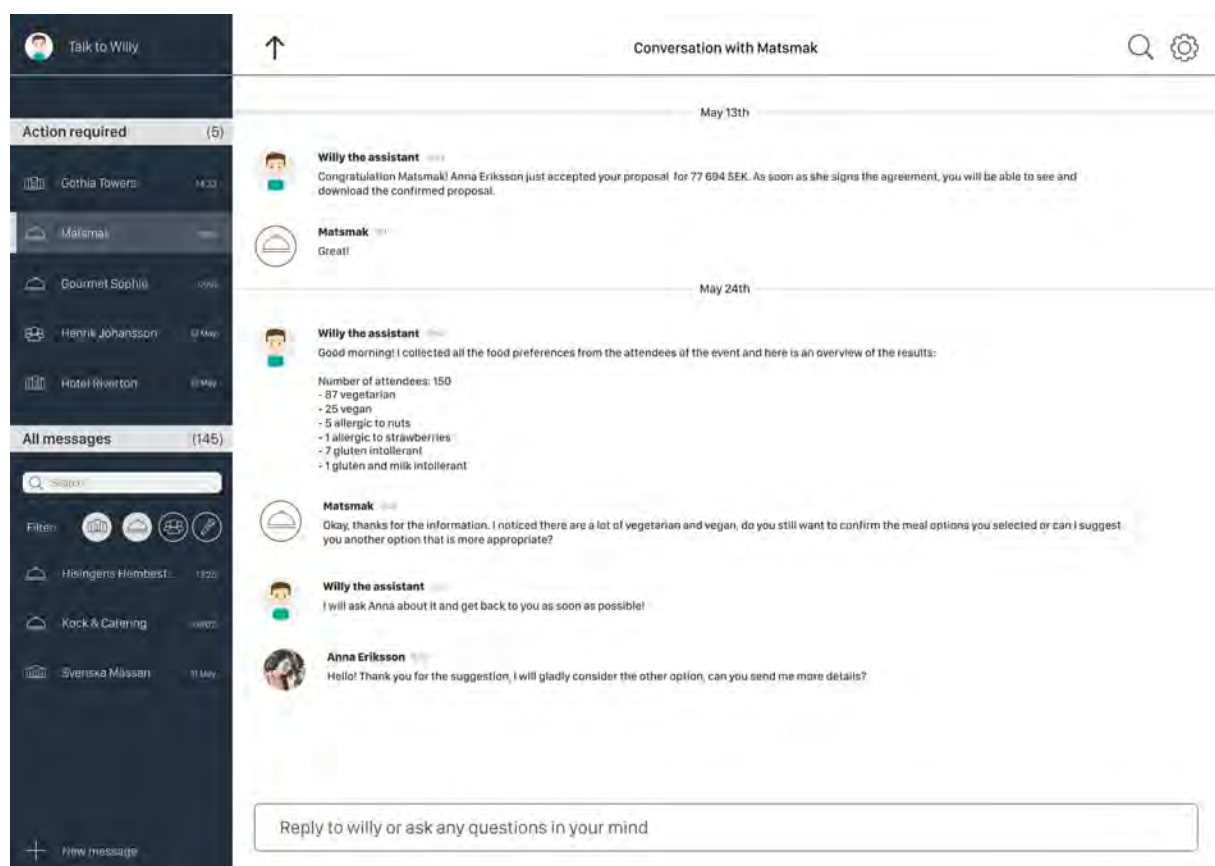


Figure 5.25: Hi-fi prototype of the conversations' section

This section will appear as an overlay over the entire screen and it can be accessed by clicking on the top bar. The left column includes: a quick access to the conversation with Willy, the messages that require an action from the organizer and all the other messages that Willy is taking care of. In the section that contains all the messages, a search bar and some filtering options are displayed to easily find a specific conversation. Moreover, by clicking on the *new message* button on the bottom of the

sidebar it's possible to initiate a new conversation with a 3rd party or an attendee. When one of the conversations in the sidebar is selected, the content is displayed in the chat on the right side where the organizer can either look at it or interfere with a personal message. The arrow pointing up on top of the page is used to close this overlay page while the settings icon is used to set up the delegations of Willy has when communicating with other parties.

One final user test was then conducted to receive feedback on the overall concept. The test was structured by asking the user to think aloud while trying out the interactive prototype from the on-boarding phase to the invitation and conversation sections. Some interesting insights have been provided in relation to the trust towards Willy and to the efficiency and usefulness of the service. In particular, the user said: "I will probably write single words to Willy and not sentences in the beginning because I'm not sure if Willy will understand". In relation to the invitations sections, the user found it really useful and clear, however, she found the preview section in different devices a little bit hard to understand. Another important feedback received was: "It would be great if Willy can regularly check with third parties if everything is running as planned and then come back to me so I don't have to stress about it". Moreover, when asked how would you do if you want to talk to Willy, the user said it wasn't clear that you can click on the input bar.

**One factor to consider, in order to improve the overall experience of organizers, is:**

- *Provide assistance:* guide the organizer throughout the process and present relevant information when needed

**Another factor to consider, in order to improve the overall experience of attendees, is:**

- *Let the attendees feel welcomed and being taken care of:* provide ongoing care and personalized assistance

## 6. Results

In this chapter, the answer to this master's thesis research question is presented. Four types of results are described:

- Event management and attendance activities
- Factors to consider in order to improve the user experience of event organization and participation
- Most important aspects that attendees remember in relation to an event
- Implementation of the factors in a digital solution

### 6.1. Event management activities

As stated in the introduction chapter of this thesis, a supporting question in order to answer the main research question is:

*“What are the attributes that event organizers need to include in their event management activities?”*

This section presents the activities that are carried by organizers to plan and manage a cycle of an event. The activities were identified as a result of exhaustive literature review and of conduction of semi-structured interviews with conference organizers. The activities were used as a basis for answering the main research question and for defining the digital solution.

The cycle of an event consists of five different phases, as shown in Figure 6.1, define, plan, act, follow-up and maintain. Each phase is assigned to a specific set of subtasks. The phases are built on top of each other and follow the same chronological sequence. However, in each phase, the sub-tasks can be followed in many different orders.

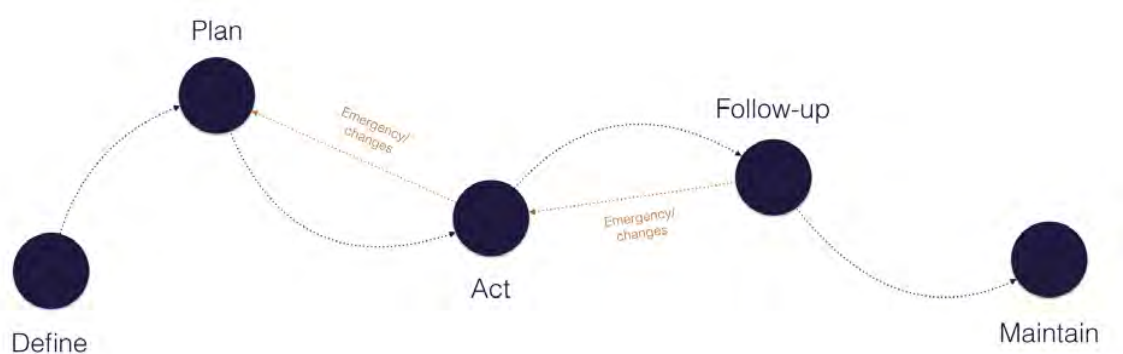


Figure 6.1: The phases of the organizer's journey map

## Define phase

In the define phase, visualized in Figure 6.2, several decisions need to be taken. First of all, the organizer defines if the conference is an internal event, for the employees, or external, for the customers. After that, the goal of the conference is stated, to keep the focus and plan the following activities in order to achieve that objective. The target group and budget for the conference are then defined, to create a list of potential attendees and define how finances need to be allocated. Depending on if the conference will be held abroad or not, the country and or city are selected. When these aspects have been defined, a timeline is created to decide how much time there is to plan all the activities related to the event.

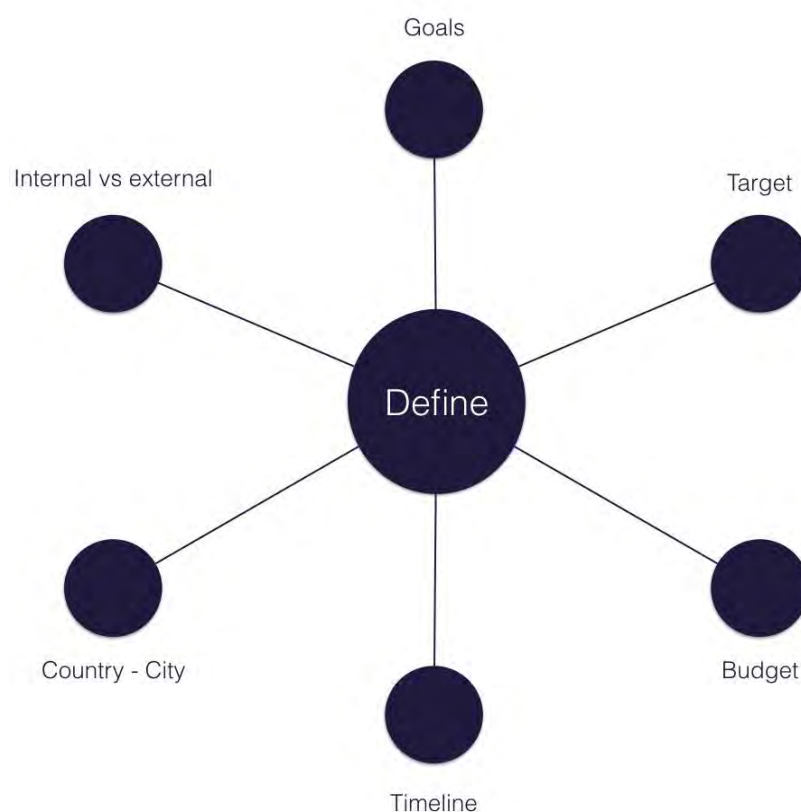


Figure 6.2: The define phase of the organizer's journey

## Plan phase

In the plan phase, displayed in Figure 6.3, the selection of the venue is one of the first aspects that is carried out, by taking into consideration several factors such as availability, location and services provided. Different activities for the conference are planned, such as mingling or keynote sessions and the outline of the agenda is defined. The organizer needs to take care of the registration process together with invitations and ticketing processes. Among the services required for the event,

photographers and catering services have to be selected and the inventory of printed materials or digital devices required can be created. If the transportation of the attendees to the venue is included in the package of the conference, different means of transportation and agreements with external companies are stipulated. At the same time, if the conference is held for more than one day, available nearby hotels are selected.

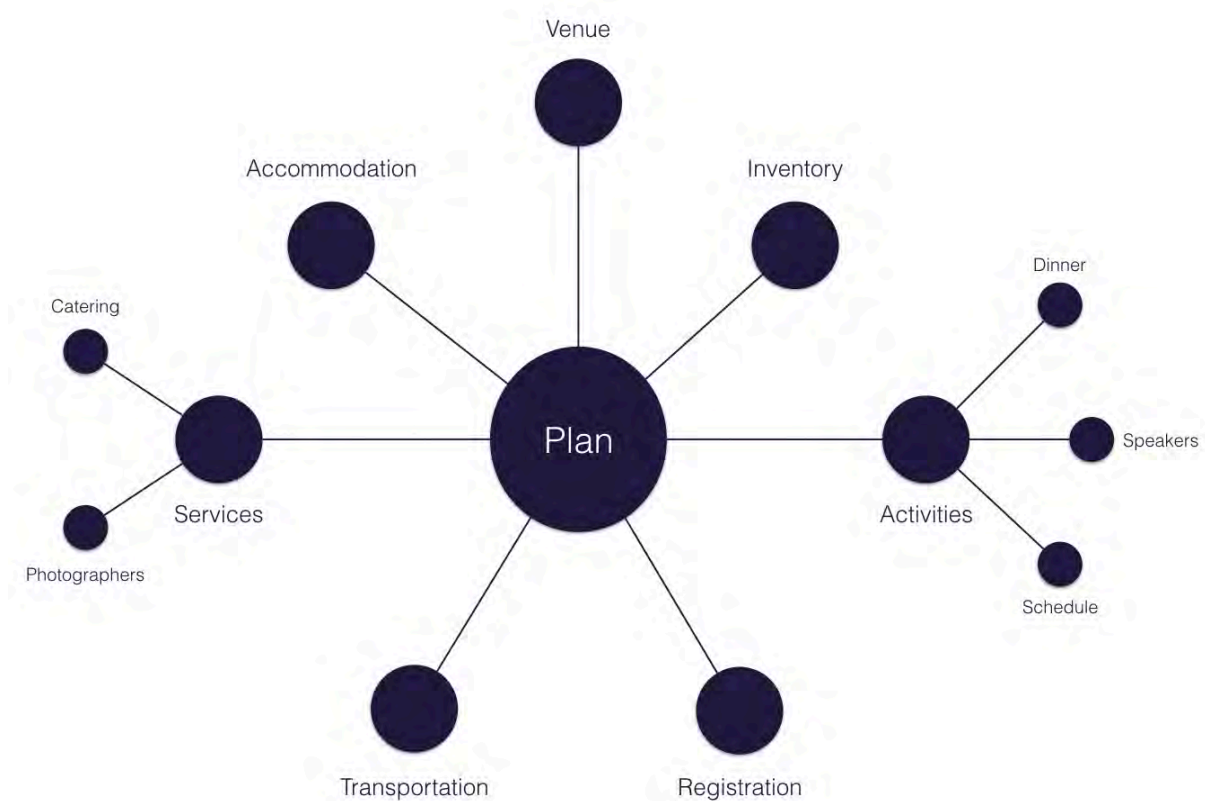


Figure 6.3: The plan phase of the organizer's journey

## Act phase

In the act phase, visualized in Figure 6.4, the plan is put into action. The organizer keeps track of the different tasks while managing teams and respecting deadlines. At the same time, he communicates with both third parties, such as the venue, catering and speakers and the attendees. It can happen that the organizer has to go back to the plan phase if something changes. Moreover, the organizer in this phase takes care of emergencies and last minutes changes. This is usually the case when an expected event happens during the conference and the organizer has to deal with it right away.

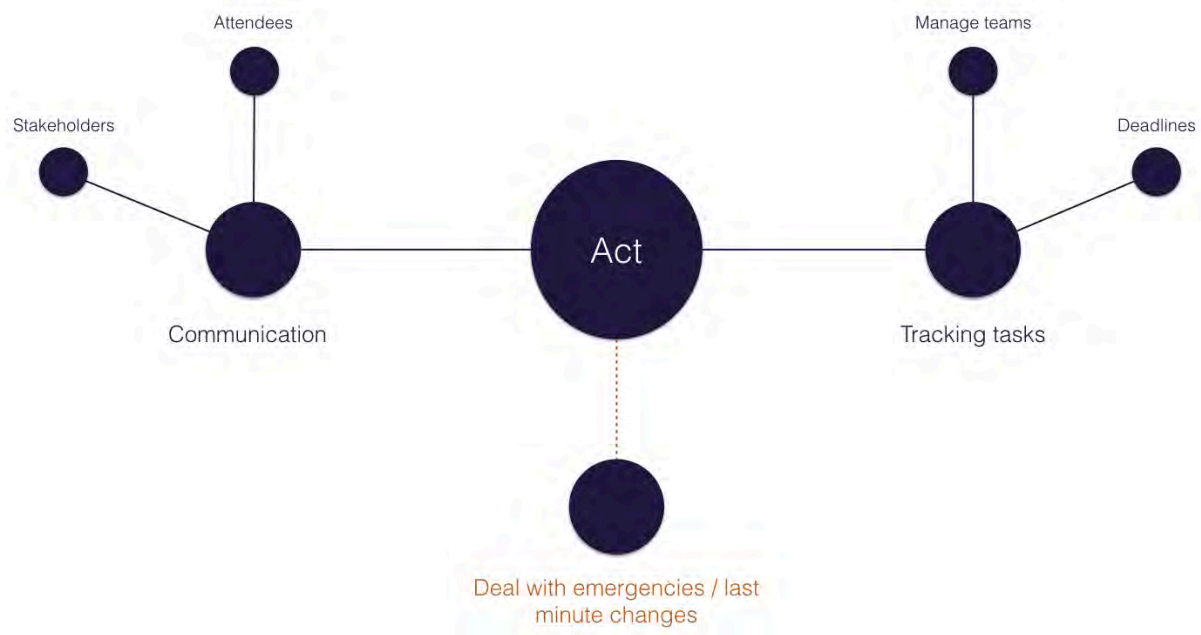


Figure 6.4: The act phase of the organizer's journey

## Follow-up phase

The follow-up phase, visualized in Figure 6.5, includes all the activities carried out during the conference, in which the organizer makes sure that everything runs smoothly as planned. Before the event takes place, the organizer arrives at the venue sometime before in order to prepare the location and make sure everything is in place. During the event, the organizer deals with any request from stakeholders and attendees and finds solutions to problems if they occur. In this situation, the organizer might go back to the act phase in order to deal with emergencies or last minute changes.

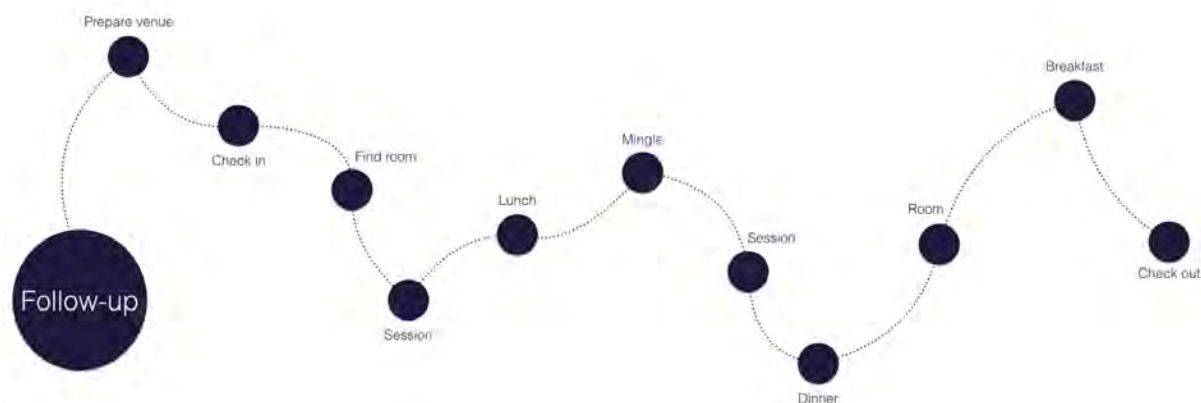


Figure 6.5: The follow-up phase of the organizer's journey

## Maintain phase

The maintain phase, displayed in Figure 6.6, includes sending out a summary of the conference to all attendees and ask them for feedback in order to improve future events.

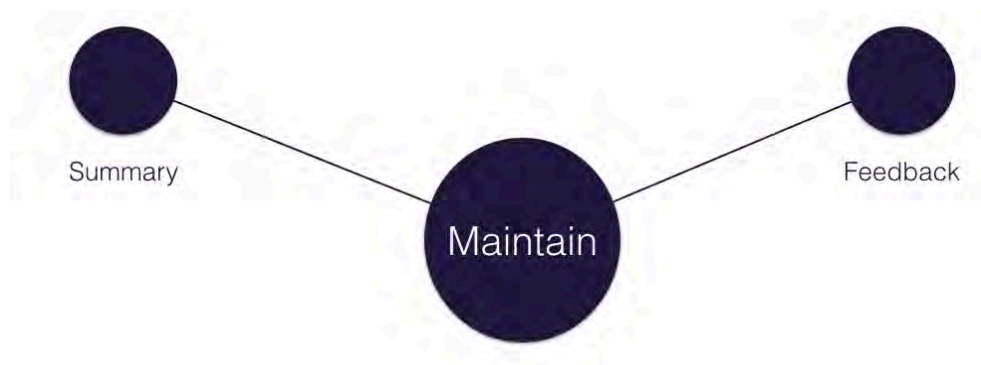


Figure 6.6: The maintain phase of the organizer's journey

## 6.2. Event attendance activities

This section presents the activities that are carried by attendees to plan and attend a conference. The activities were identified as a result of exhaustive literature review and of conduction of semi-structured interviews with conferences goers. The activities were used as a basis for answering the main research question and for helping in defining the digital solution.

The cycle of attending a conference consists of five different phases, as shown in Figure 6.7, know, register, prepare, travel and attend. Each phase is assigned to a specific set of subtasks

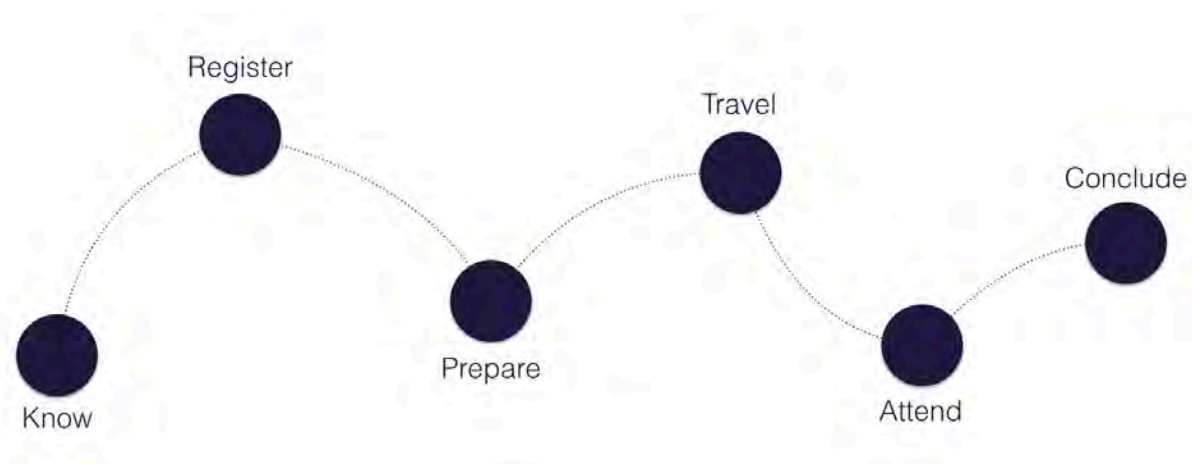


Figure 6.7: The phases of the attendee's journey map

The phases are built on top of each other and follow the same chronological sequence. However, in each phase, the sub-tasks can be followed in many different orders.

## Know phase

In the know phase, as shown in Figure 6.8, attendees try to collect all the information that is related to the conference. Attendees can know about a specific conference through different channels, for example, newsletters or LinkedIn. By the end of this phase, attendees will decide if the conference is worth attending or not. The main motivations for attending a conference can be the topic, speaker, business opportunities or the city. Usually, it is a combination of different motivations.

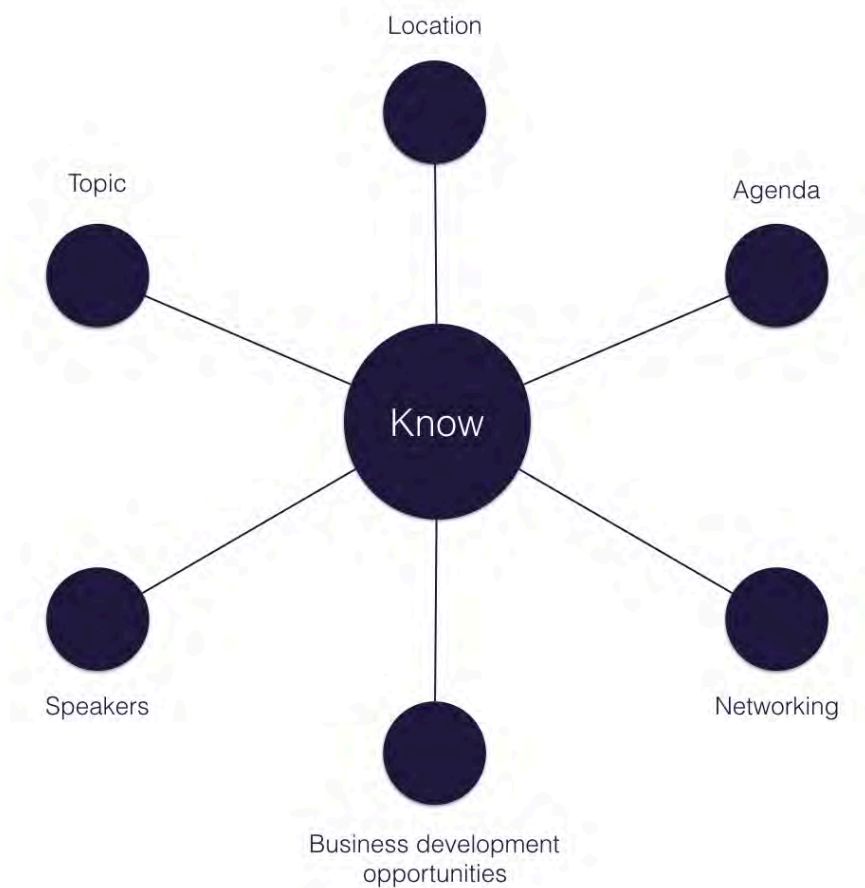


Figure 6.8: The know phase of the attendee's journey

## Register phase

In the register phase, as shown in Figure 6.9, attendees need to register for the conference. In order to do so, they usually have to communicate personal

information such as name, phone number and email address. Attendees need to register for different workshops and sessions, if available. They also need to communicate if they have any allergies or preferences for the meals provided.

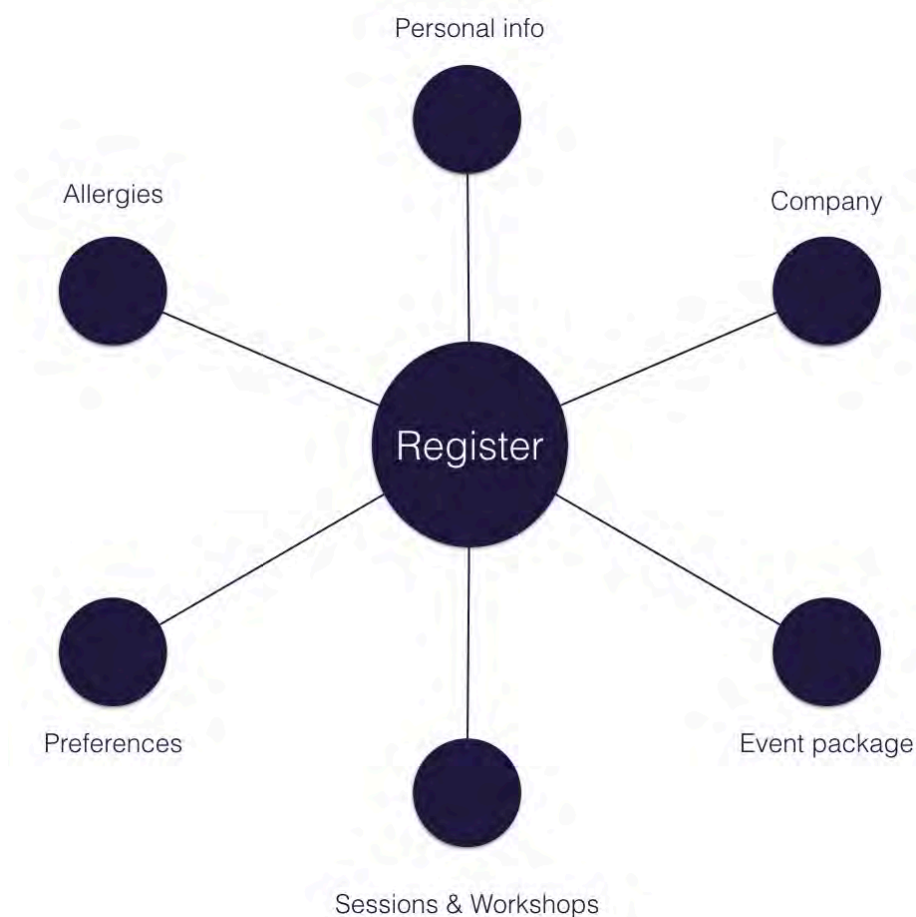


Figure 6.9: The register phase of the attendee's journey

## Prepare phase

After registering for the conference and before traveling to the conference site, attendees need to prepare for it, as shown in Figure 6.10. They need to have all the required documents ready, for example, if the conference is in another country, they should check if they need to issue a visa or not. They also need to prepare their bag and conference tickets. If the main motivation for attending is networking, they might also need to check out who are the other attendees.

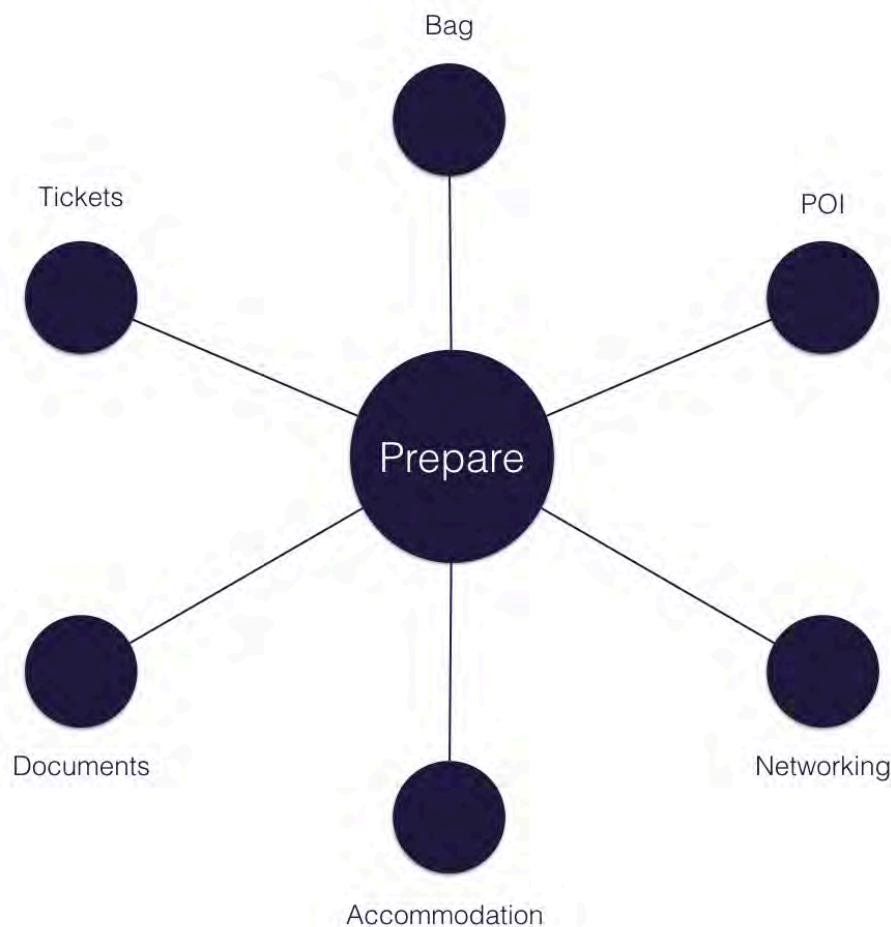


Figure 6.10: The prepare phase of the attendee's journey

## Travel phase

In the travel phase, as shown in Figure 6.11, attendees will travel to the conference site. There are many ways of transportation such as an own car or an airplane. The transportation decision is usually taken during the prepare phase. When traveling to the conference site, attendees need to know the location of the venue and the contact information of the person in charge in case it was needed.

## Attend phase

In the attend phase, as shown in Figure 6.12, all the activities that are carried by attendees during the period of a conference. Attendees usually start with checking in at the venue, followed by either going to their room or directly to attend a session. Other activities that are related to food and networking might be a breakfast, a lunch or a dinner party. Attendees might also go out of the venue to visit different attractions of a city. Finally, they check out before they leave the venue.

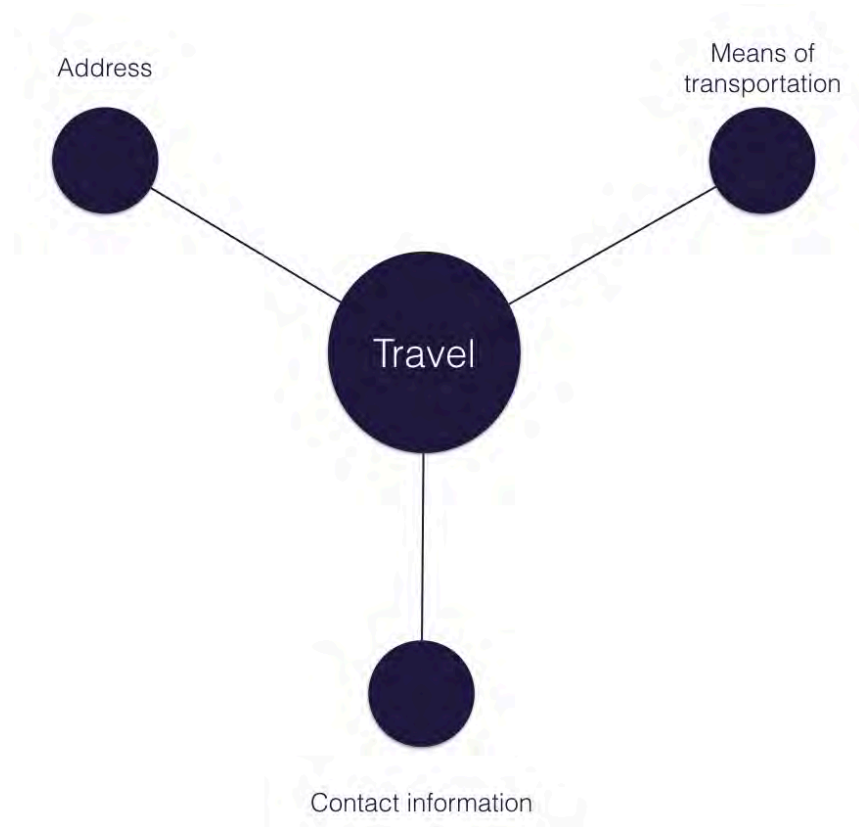


Figure 6.11: The travel phase of the attendee's journey

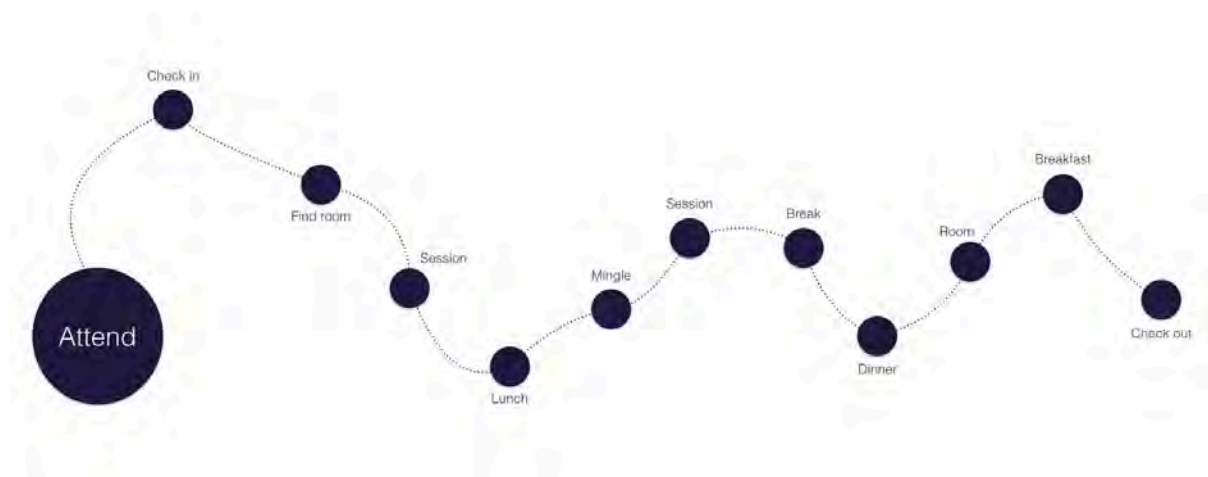


Figure 6.12: The attend phase of the attendee's journey

## Conclude phase

In the conclude phase, as shown in Figure 6.13, attendees will usually receive a summary of what happened in the conference. They will also fill out a feedback form that is handed to them either during or after the event takes place.

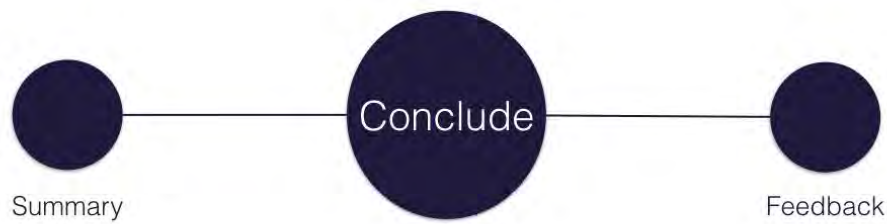


Figure 6.13: The conclude phase of the attendee's journey

## 6.3. Factors

All previously mentioned activities have been used as a basis to help answer the main research question, which is:

*“Which factors to consider in order to improve the user experience in relation to events management and participation?”*

The resulting factors have been divided into two macro categories, organizers and attendees respectively.

### 6.3.1. Organizers' factors

There are many factors that need to be considered when designing a digital solution to help organizers plan and manage a conference. In this section, a list of factors is presented.

#### Trustworthiness

The term *trustworthiness* is defined in the Oxford Dictionary of English as “The quality of always being good, honest, sincere, etc. so that people can rely on you (Stevenson, 2010)”.

*Create feeling of trust:* integrate reliable third parties and display sufficient information from different sources and reviews.

*Protect data:* clearly state what will happen with the information that will be imported into the service.

*Provide explanatory information when needed:* show extra information to reduce confusion and support the organizers.

## Flexibility

The term *flexibility* is defined in the Oxford Dictionary of English as “the ability to change to suit new conditions or situations (Stevenson, 2010)”.

*Suggest alternative plan in case of any changes:* For example, when someone cancels his/her registration, provide recommendations of actions to take.

*Provide different ways to reach the intended outcome:* let the organizer customize his/her actions.

## Familiarity

The term *familiarity* is defined in the Oxford Dictionary of English as “Familiarity (with something) familiarity (to somebody) the state of knowing someone or something well; the state of recognizing someone or something (Stevenson, 2010)”.

*Make use of familiar existing services:* integrate services that organizers are already familiar with such as, mail and excel.

*Use widely recognized patterns:* use similar patterns and interactions that are widely known and used by other digital services. For example, “Use consistent visual symbols on related commands” (Cooper et al., 2012).

*Use familiar layout:* avoid introducing different look and feel from what is already widely recognized. For example, if there is a chat function it should mimic the chatting services that are already in use.

## Consistency

The term *consistency* is defined in the Oxford Dictionary of English as “the quality of always behaving in the same way or of having the same opinions, standard, etc. (Stevenson, 2010)”.

*Be consistent throughout the service:* “Consistency implies a similar look, feel, and behavior across the various modules of a software product” (Cooper et al., 2012).

## Efficiency

The term *efficiency* is defined in the Oxford Dictionary of English as “The quality of doing something well with no waste of time or money (Stevenson, 2010)”.

*Reduce time to carry out tasks:* connect different parties together without the need to include organizers in between.

*Automate parts of the planning:* collecting different sources of information in one platform, makes it easier to reduce the number of actions required to achieve a specific task. For example, when an organizer confirms booking a specific service, the transaction should be automatically reflected in the budget.

*Notify the organizer about any changes:* create automatic reminders for last-day changes in relation to third parties with the ability to customize them.

*Make informed decisions:* help organizers make a more effective decision by analyzing different data sets and identifying patterns.

*Aggregate information in one place:* allow easy access and management for different sources of information that are related to a specific event.

*Provide recommendations and personalized alternatives:* integrate tailored results that are based on the organizer’s input, preferences and budget constraints.

*Provide assistance:* guide the organizer throughout the process and present relevant information when needed

*Keep track of actions and save preferences:* saving the history of previously planned events and make use of the data.

## Clarity

The term *clarity* is defined in the Oxford Dictionary of English as “the quality of being expressed clearly (Stevenson, 2010)”.

*Clearly communicate outcomes of actions:* inform the organizers with clear labeling and tips about what will happen as a result of a certain action, like a click on a button.

*Make the organizer feel in control:* always provide a way for the organizer to know what's going on, get the latest updates and decide which action to undertake next.

## Uncategorized

*Avoid information overload:* show only relevant information when needed and organize information into different categories.

*Create feeling of accomplishment:* provide feedback that visually reflect the completion of a task or step in the process of organizing an event.

### 6.3.2. Attendee's factors

There are many factors that need to be considered when designing a digital solution to improve the user experience of attendees. In this section, the list of factors is presented.

*Support decision making:* provide clear and relevant information that will support the attendees to make a decision regarding whether to join an event or not.

*Meet people's needs:* take into consideration individual preferences and desires of attendees.

*Save data:* provide the option for attendees to save their personal information and preferences to avoid repetition.

*Protect data:* inform attendees about how their personal data will be used

*Provide relevant information when needed:* communicate the right information at right time based on where the attendee is in his/her user journey

*Make the attendees feel welcomed and being taken care of:* provide ongoing care and personalized assistance

*Reduce time to carry out different activities:* automate tasks when possible

### 6.3.3. Most remembered aspects from the attendee's perspective

There are important elements that need to be taken into consideration by event organizers because they are the most remembered aspects from the attendees' perspective. In this section, the main aspects are presented.

*Choice of speakers:* speakers are one of the most remembered parts of a conference, therefore, organizers should cherry-pick them based on the content and relevance.

*Venue facilities:* services and activities available during the event are highly considered by participants. For example: if the organizer will include a spa in the event then this might positively affect attendance.

*Venue location:* in terms of city, style or popularity affect the choice to participate or not in the event.

*Learning outcome:* participants value if they can learn new things at the event.

*Mingling party:* used to connect with other participant and discuss different topics presented at the conference. Organizers should facilitate the networking sessions and create appropriate atmospheres in terms of setup and choice of food.

*Unexpected event:* unusual activities or entertainment sessions create energy and positive reactions from attendees. Organizers should have great care into choosing activities that will be remembered.

### 6.3.4. Reflections on the factors

There are some factors that complement each other such as *familiarity* and *consistency*. They usually go hand in hand with each other. For example, being consistent in terms of visual layout, interactions and behaviors in the whole service will make it easier for organizers to be familiar with the service. According to Nielsen (2000), relying on standards will "improve users' ability to quickly learn interfaces and enhances productivity by raising throughput and reducing errors". This will improve the learning curve, which will help users to be more efficient when achieving their tasks.

*Consistency* also supports *trustworthiness*, because being consistent with the interactions and behaviors will make it easier to trust and rely more on the experience with the service. On the other hand, *consistency* and *flexibility* do not always complement each other, by providing different ways to achieve the same task it might affect the consistency of interactions. This might lead to not fully trust the outcome of a specific action.

*Clarity* of information is essential for making the users trust the system. *Clarity* will also help the users to be *efficient* because it will reduce the confusion and uncertainty in relation to the outcome of an action.

By providing *flexibility* in terms of presenting information and functionality, Cooper et al. (2012) note that it can “release great advantages in terms of user *efficiency* and satisfaction”. This might also lead to bring more *trust* to the service.

By providing pre-made solutions as well as customizable ones, the user is allowed to undertake what best suits their level of expertise in using the service and digital solutions.

## 6.4. Implementation of the factors in a digital solution - the planning service

In this section, the final design solution is presented. This solution is the result of prototyping and evaluating two different concepts. There was some combination of different features into this final result. This final concept, the planning service, is targeted on answering another question, which is:

*“How the factors, presented before, that can improve the organizers’ experience, might be incorporated in a digital solution?”*

### Welcome screen / event setup

The Figure 6.14 shows the welcome screen and event setup, see Appendix 3 for higher resolution of this images. The first screen that will introduce Willy the assistant to the users. And the second screen shows the flow of setting up a new event.

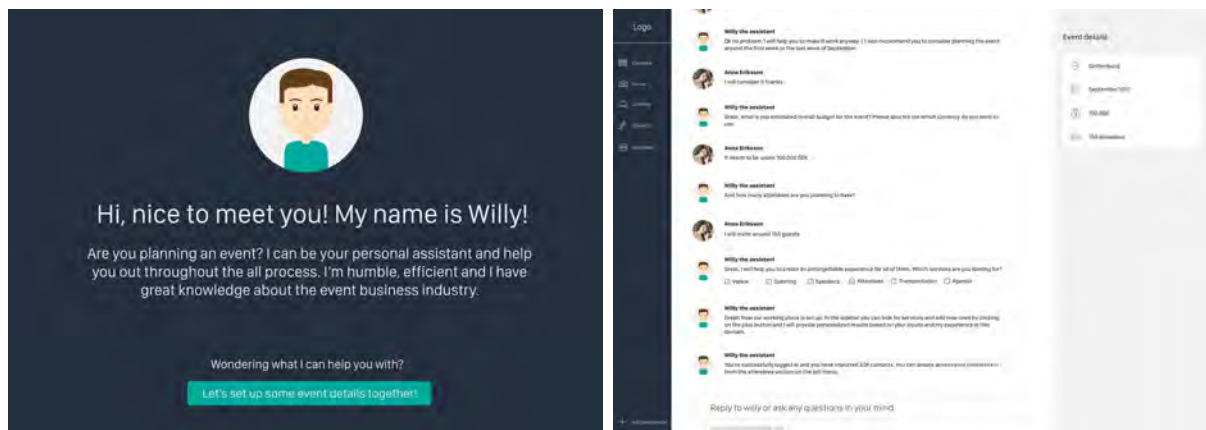


Figure 6.14: The welcome and event setup pages

## Dashboard

In the dashboard, as shown in Figure 6.15, the user can see the latest announcements, event details and the tasks that need to be carried. See Appendix 3 for higher resolution of this image. The user can see also see suggestions of actions to take from Willy, on the top bar. On the right side of the screen, the user can access the added services and add more. The services that are integrated within the system are venues, catering, speakers, registration handling, photographers, agenda creation and transportation.

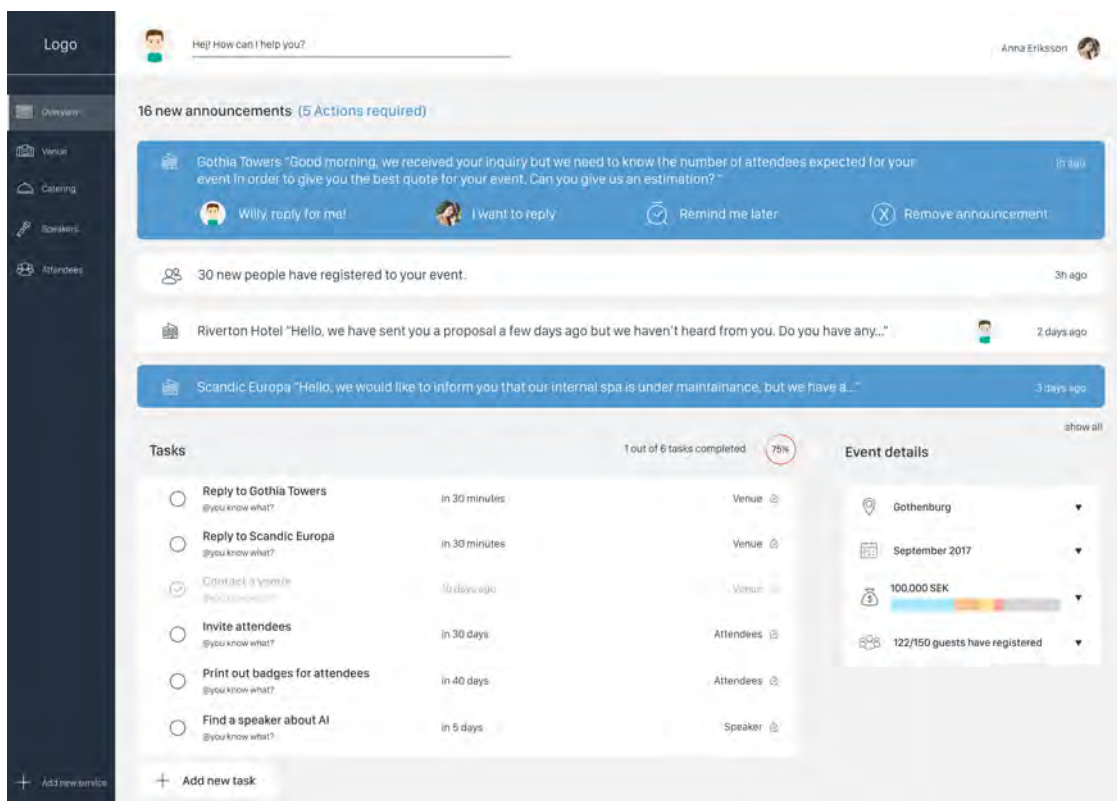


Figure 6.15: The event overview page

In Figure 6.16, the flow of selecting a specific catering is presented. See Appendix 3 for higher resolution of this images. The first step is to see different catering options with an overview of the food options. Then the user can directly ask a quotation for specific selections or enter a detail view to see more food options and other details if needed. The selections can be modified from the detail view and it is possible to request a quotation as well. After requesting the proposal, the catering card in the overview page will reflect the change. When the catering replies, the user will be notified and the catering card will change its background color to reflect that there is an action required. The user can either accept, deny or request a change. Throughout the selection process, Willy will give recommendations of tasks and also recommendations for different selections.

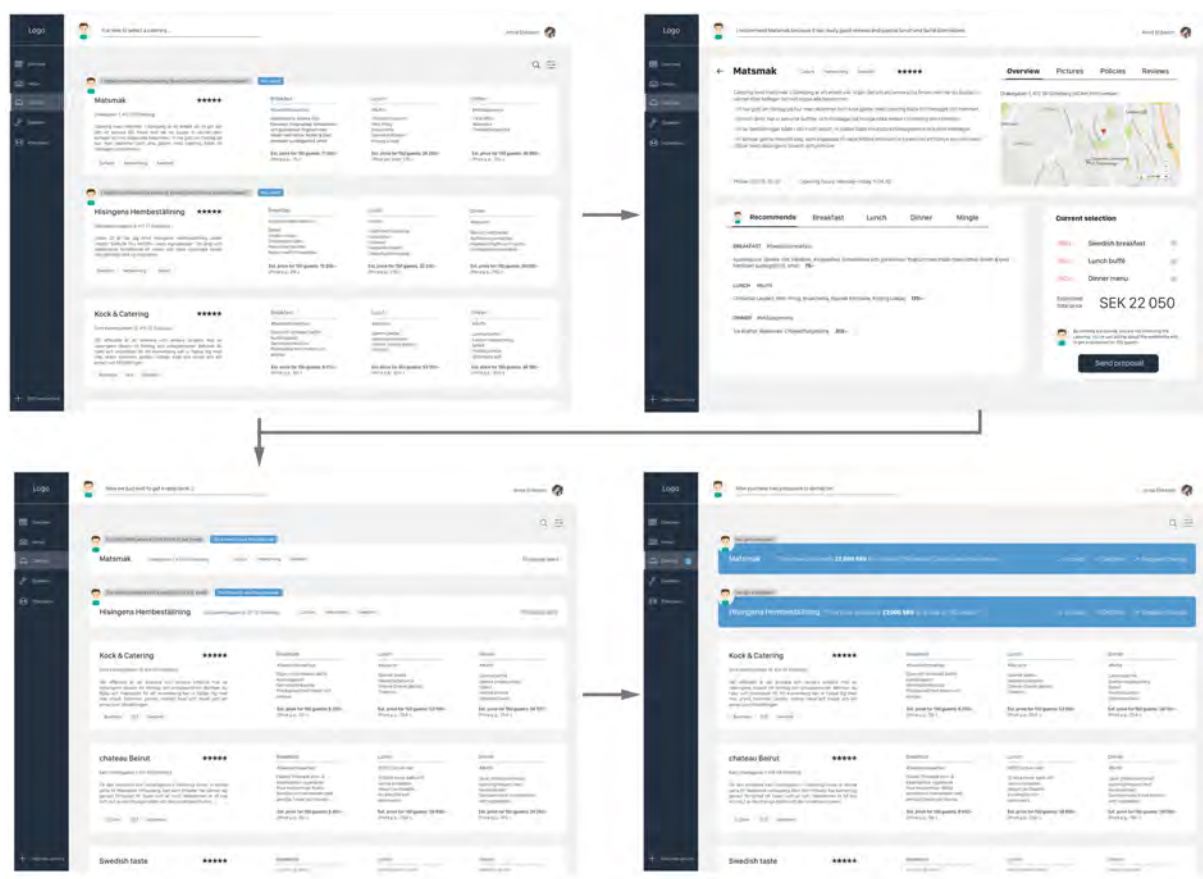


Figure 6.16: Catering selection flowchart

## Guests' invitation and management

In the attendees' section, the user can choose a specific invitation style as shown in Figure 6.17. See Appendix 3 for higher resolution of this images. One factor that is applied to this screen is the ability to achieve the intended outcome in two different ways. The first one is to provide pre-made templates and the other one by providing

the ability to upload an own design or modify the pre-made template. By providing pre-made templates different factors are being incorporated into the solution such as provide assistance, provide recommendations and personalized assistance, make informed decisions and reducing time to carry out tasks.

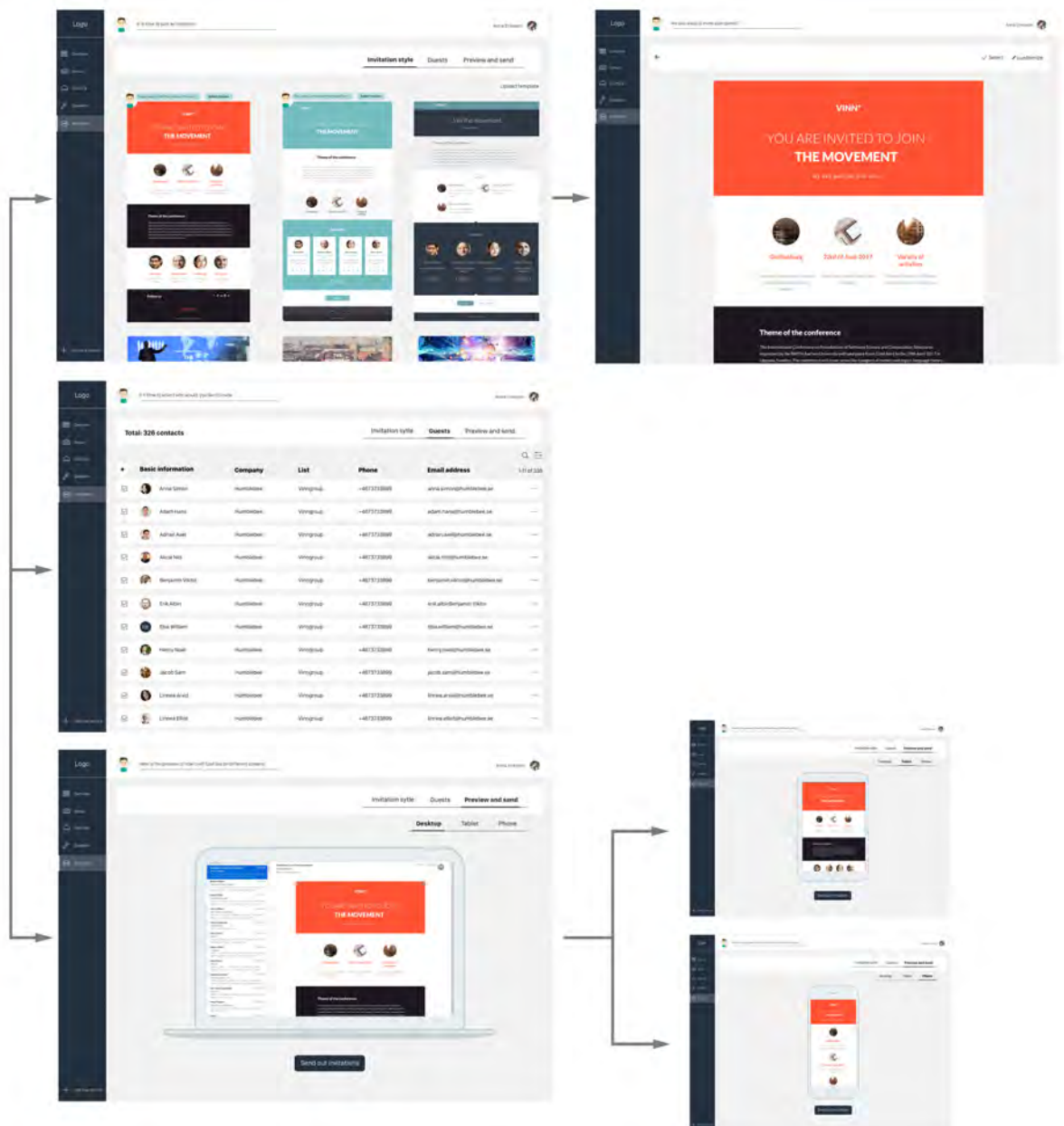


Figure 6.17: Invitation process and preview flowchart

## Conversations handled by the assistant

As shown in Figure 6.18, the assistant is at the center of almost all the conversation that happens in the service. See Appendix 3 for higher resolution of this images.

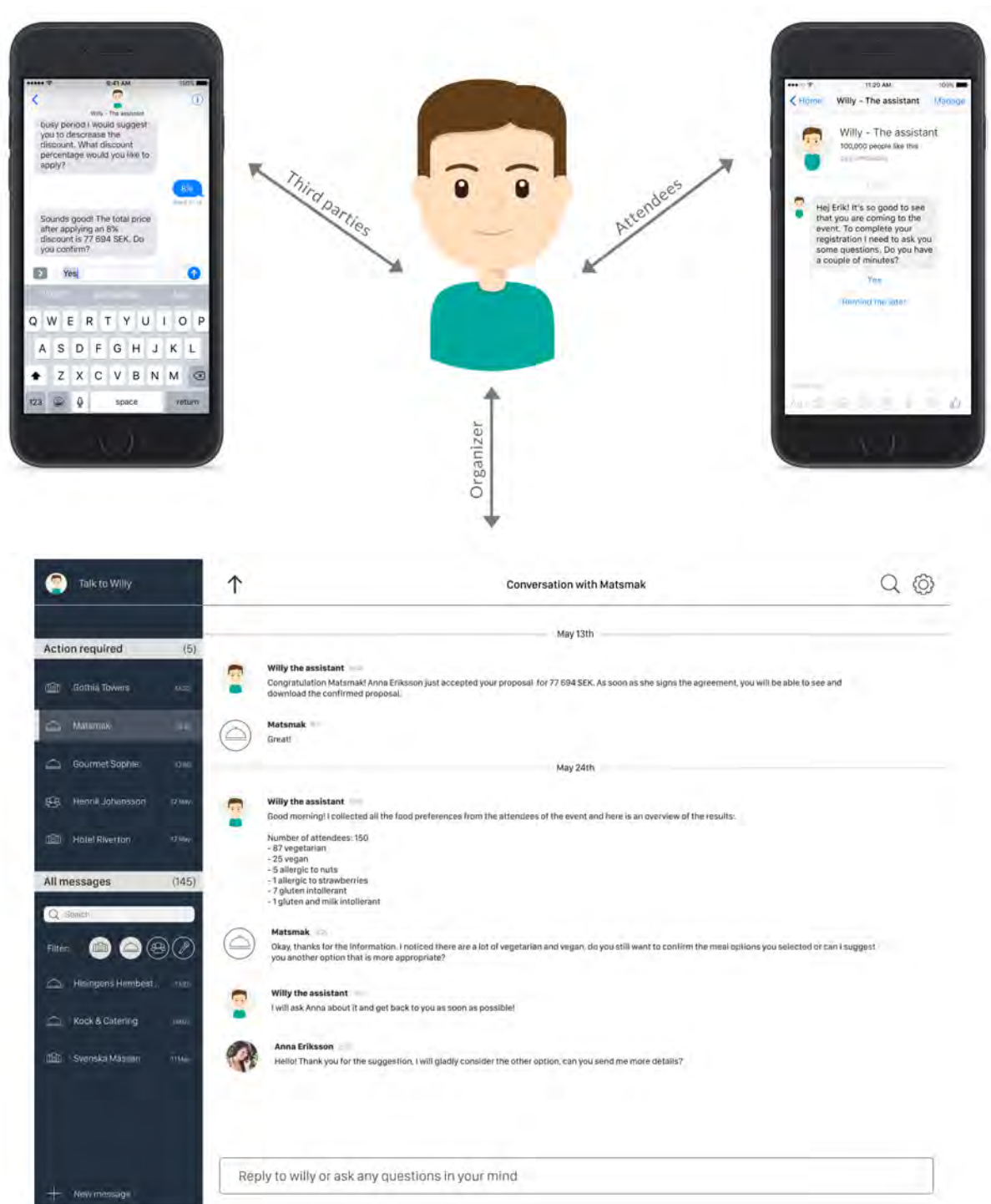


Figure 6.18: Conversations handled by the assistant

The factor related to the *creation the feeling of trust* is highly linked to the relation with the assistant and it has been applied in this service by proving reliable results, guidance and explanation of recommendation for different services. Moreover, this also reflects the factors of providing assistance, recommendations and personalized alternatives. Willy can autonomously handle all the communication with different third parties and the organizer can both access the conversation and interfere in it when needed. This reflects the factor of *reducing time to carry out tasks* and *automate parts of the planning* since the assistant will take care of the aspects that don't require the interference of the organizers. The ability to access all the conversation that the assistant is having with different parties, address the factor of *making the organizer feel in control* by letting him/her know what's going on.

When the invitations are sent out, Willy can also take care of the communication with all the attendees, by asking food preferences and personal data, providing useful information at the right time and answering questions. These aspects reflect the attendee's factors of *making the attendees feel welcomed and being taken care of*, *provide relevant information when needed* and *support decision making*.

## 7. Discussions

This chapter discusses the main aspects of this thesis, theory and methods used, the process undertaken, analysis of the results, future work and possible ethical and societal implications. This project started by defining the research question, which factors should be considered in order to improve the experience in relation to event management and participation. After familiarizing ourselves with the domain through extensive research, we decided to delimit the overall focus to consider only conferences. The overall goal was to identify the most important factors and it has been pursued by developing in parallel a digital solution that helps the organizer plan event in a more efficient, personalized and organized way.

### 7.1. Process

This project followed a human-centered design methodology by making sure to follow the core attributes of it (see chapter 3.2). This was achieved by:

- Having the potential users as early as possible in the research phase by using interviews method to “obtain an understanding of their needs, desires and experiences (Giacomin, 2015)”
- Making sure that there are different expertise in all the workshops that we carried to find solutions.
- Testing the main concepts early on as well as later when the solutions were more defined. The feedback was also analyzed and incorporated in different ways.
- Iterating throughout the process on different possible solutions

In the beginning of the project, the main task that we were supposed to fulfill was to make the communication between attendees and organizers easier. Throughout the research phase, there was a change of focus that resulted in building a planning tool for organizers. The research took a long time but it was crucial for all the decisions that were taken along the way. It was important for us to not only analyze the research findings but also to visualize them into concrete figures or diagrams. Re-defining the problem along the way was time-consuming and if the main focus from the beginning was to create a planning tool, a lot of time would have been saved.

It is important to understand the context in which the target user will use the designed service and in order to elicit information from the main target group, interviews were planned and conducted during the research phase. Since

observations and real context enquirers are powerful in identifying ‘non-verbalized’ requirements (Leonard and Rayport, 1997; Ealy and Soderberg, 1990), it was a big drawback that we could not find any conferences to attend during this phase. We believe that this would have helped in learning more about the environment of event planners.

In the end of the research phase, three possible concepts were identified and presented to the stakeholders in order to decide on one. The decision was based not only on the overall concept but also on the market’s need for such a service. After deciding on the main track, a planning tool to help organizers plan and manage conferences, we started ideating about the scope and functionalities of the service. It was at this time that we proceeded with the design of the service by using the Google Design Methodology.

Learning about a new methodology and trying to adapt it to the project was not the optimal way to carry out the project. Even if the methods used are familiar, the way to move further was not always clear, especially early in the process. It would have been more beneficial to use a methodology that we are familiar with and try to adapt it to the project. By conducting design sprints in different areas of the project, we developed a specific part of the service at a time, tested it with real users and integrated the feedback received in the following sprints. The main drawback was that, since the sprints covered different areas of the service, it was difficult to iterate and don’t limit the decision to what was previously designed. Even if we consider this methodology a good approach to develop ideas in a short amount of time, we think that for this particular project, it would have been more beneficial to develop all the areas together, prototype and then iterate on the whole solution.

### 7.1.1. Concept development

Two different concepts were ideated during the first sprint and quickly prototyped in order to test them out with potential users. The main reasons for quickly prototyping and testing the concepts were to validate the assumption that such a service is needed and to decide which one to develop further. However, with more time available, we believe that it would have been beneficial to develop the two concepts in parallel in order to have better insights and relevant feedback from a variety of potential users.

After collecting and analyzing the feedback from the quick testing of the two concepts, there were a lot of discussions on which would be the best way to plan a conference and whether the target group would make use of such a service or not. The decision was made to combine different aspects of the two concepts, 'the traditional planning service' and 'planning using a chatbot in a conversational way' into one. This was one of the biggest challenges of this project because, instead of focusing on developing one concept further, a third concept, 'a planning service with a virtual assistant', was developed.

## 7.2. Results

In this section, we are going to discuss the different results of this project: the user journey phases, the factors that affect the user experience and the digital solution that was developed.

### 7.2.1. Phases

The attributes of the phases were the result of the exhaustive literature review as well as conducting semi-structured interviews with both conference's attendees and organizers. The phases that were defined and presented as a user journey are not the same for every conference, but they were the basis for all the work that came after. Moreover, we were not able to add a time frame for each phase because the conference timeline is strictly related to the characteristics of the event and the organizer's preferences.

### 7.2.2. Factors

The factors were not a direct result of the research, concept and ideation phases and then incorporated into a design solution. Instead, the factors were identified throughout the whole design process. Also, after each user test, we had to think about whether there were new factors that should be considered or not. We are satisfied with the factors that we came up with for organizers, even if we are aware that some of them are not strictly related to events but to the user experience of digital solutions as well. The factors were identified as a result of researching and developing a conference planning service, however, they might be applicable to designing other planning platforms and services as well. On the other side, we are aware that additional work for the attendees' factors is required. This is due to the shift of focus that was decided early in the process.

### 7.2.3. Service

The designed service, is an attempt of how to incorporate different factors in order to support conference planners. The main feedback we received after the last user test was positive and people seem to appreciate being able to have planned a conference in a more efficient way. However, the main concerns were regarding whether to trust a virtual assistant with many aspects related to the planning and what would be the limitations of using it. One reason might be that the main target group is not familiar with using virtual assistance in their everyday activities. Another reason might be, that it is not clear how the assistant can provide better and personalized results. So we suggest more testing to evaluate this further.

Integrating a virtual assistant in the project raised questions related to trustworthiness, reliability, language and personality. Some of these aspects have been considered and integrated in the results but some other like the personality and tone of voice of the assistant were not developed. Moreover, due to time constraints, we didn't have the chance to prototype a real-time interaction with the assistant and therefore we had to create interactive prototypes of our service with pre-populated and static content. This probably limited the feedback received during the user testing sessions and did not show the full potential of having this virtual assistant.

## 7.3. Ethical considerations and societal implications

Integrating the assistant in the services raises a lot of ethical and societal concerns. Ethical considerations might include conflict of interests and actions' consequences. The main questions that are raised are:

- To which extent the assistant should recommend actions and tasks to each party?
- Since the assistant will communicate with different parties, what will happen in case of conflict of interests?
- In case of conflict of interests, which side should the assistant favor?
- If the event doesn't meet the intended goal, who should be blamed, the assistant or the organizer?

Societal implications might include the role of professional event organizers and the parties that will not benefit. The main questions that are raised are:

- If the assistant uses machine learning in order to study the behavior of event organizers so it can use this knowledge to help others. How is this going to affect the event management industry?
- How third parties that are not part of the service will be affected?

## 7.4. Future work

The next step in developing this project further would be to design additional screens for different third parties in order to create an overall flow of interaction. Essential would be to prototype the conversation with the assistant in order to integrate it in the solution. Usability tests should also be conducted to test the entire prototype with potential users. This might result in finding new factors that can improve and reshape the user experience of event organizers. Moreover, additional work is required to validate and develop the attendee's factors further.

Other aspects of events management could be considered in order to improve the whole service. The main aspects that are currently missing are event marketing, sponsors, media, teams and collaboration.

## 8. Conclusions

In this section, the conclusions of our work and the answer to our research questions are presented. This thesis is the result of investigating the question:

*“Which factors to consider in order to improve the user experience in relation to events management and participation?”.*

To answer this question, we had to explore different aspects of the events planning and management industry as well as what defines a good user experience for both participants and organizers. Our research resulted in three different results: the attributes that are related to the lifecycle of an event, factors that need to be considered to improve the user experience of attendees and organizers and how these factors can be incorporated into a digital solution.

To grasp the context of events industry and better understand the motivations and needs of the main target group, a human centered design methodology was followed. We are aware that there are no right answers for solving a wicked problem, however, the methodology proved to be beneficial to develop a solution that will improve the workflow of the target group. The user experience hierarchy of needs model (section 3.4.1) proposes what defines a good user experience. The first four layers ‘functional’, ‘reliable’, ‘usable’ and convenient’ are covered in many different ways in the human centered design methodology, if proper methods are used. Moreover, the last two layers ‘pleasurable’ and ‘meaningful’ are more towards emotional design, thus, it requires more adaptation.

The first factors were defined after the ideation phase, where the outcomes were analyzed to see existing patterns. In order to define other factors to *reshape* and *improve* the user experience of organizers, two different concepts were developed as lo-fi prototypes. Each concept was evaluated with potential users to see whether it was worth further exploration and development or not. The two concepts mainly provided different ways for organizers to: setup an event, find and book different services and invite guests.

The final concept is a digital solution that attempts to help organizers carry different activities to plan a conference. The solution includes three main aspects, ‘third parties’, ‘attendees’ and ‘organizational tasks’, in which each one provides different

activities to carry out. The entire service is built around the digital assistant, Willy, meaning that it will be at the core of the communication between different parties, have access to all the available information and consequently provide better and personalized results.

The 'third parties' aspect allows organizers to find, compare, book and communicate with different services, such as venues, hotels, speakers, catering and transportation. The 'attendees' aspect allows organizers to import, invite and follow-up on the guests that were invited. At last, the 'organizational tasks' aspect allows organizers to setup an event, add tasks to to-do lists, keep track of the budget and create the agenda for the event.

The factors and the design of the service were more focused towards the conference industry, however, we believe that the factors can be also applied to other events types as well as other planning services. Some of the factors are context specific, while others are more general. Therefore, some of the factors can be generalized to even be considered when designing digital solutions, but this requires further investigation.

Some factors that can be generalized are, for example, *Make informed decisions, Create feeling of trust, Protect data, Be consistent throughout the service and Clearly communicate outcomes of actions*. Other factors that are context specific are, for example, *Make the organizer feel in control and Provide notification in case of any changes*.

The main results of testing the concept showed the benefits of having all the required information of planning an event in one place. Also having an assistant that provide recommendation and take care of most of the communication was perceived as efficient and helpful. However, the main concerns were related to the trustiness towards the assistant and his actions. Lastly, additional testing is required to validate and improve the whole concept.

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# Appendix 1: Interviews questions

The interviews were divided into two categories, one for attendees and the other for organizers. All the interviews followed the same semi-structured style. The main reason for having semi-structured interviews is to allow the interviewee to lead the discussion and move from one topic to another. This resulted in individual differences for each interview.

## Organizers questions

### General

Ice breaking question: What do you work with nowadays?

- How many conferences have you helped in organizing?
  - Same city or different city? if different cities, are there any big differences?
  - Type of conferences?
    - Industry
    - Day or over a few days
    - Size of event
  - What was your exact role(s)?

In your opinion, what is/was the most challenging part when planning an event?

### Before an event takes place

- What are the aspects that you consider when looking for a venue?
  - Same city or different city? if different cities, are there any big differences?
    - Transportation
    - Hotels -- Accommodation
    - Services included in the venue (catering, staff)
- What kind of tools do you use to plan an event? To help you achieve your tasks?
  - (planning, communicating, budgeting)
  - Are there any problems with these tools?
- Do you use a specific tool / service to manage registration or ticketing of a conference?
- How do you communicate with other people involved in setting up the event?
- Do you have a pre-event communication strategy? How people know that there is an event that going to happen? How do you market the event?

- How social media networks are integrated? Hashtag for the event? Facebook page?
- How do you communicate with attendees? Through which channels?
  - Food preferences / allergies?
  - Hotel details
  - Schedule changes
- Do you go there one day before? if yes, what are your main activities?

### **During the period of an event**

- How do you welcome attendees when they arrive at the venue?
  - Are there people in the venue who help attendees find their way? Like hostess.
- Do you have a supportive (backup) plans?
  - Session cancelled
  - Weather problems
  - Delayed flights
- How do you facilitate the communication between attendees and speakers?

### **Supporting discussion points:**

- Allergies
- Communicate schedule changes
- Check in
- How do you get your badge?

### **After an event takes**

- How do you get feedback from attendees?
  - Main points to consider
- What are the main problems attendees face? Based on follow up questionnaires?
  - Extreme situation where attendees were pissed off
- How to improve the overall experience of people attending conferences?

In the end:

Would like to test some concepts in the future / do you have the time?

## Attendees questions

### General

- Where do you work and what is your role in the company?
- How many conferences have you attended before? Did you know anyone else who participated or did you register as a group?
- Why did you choose these specific conferences to attend?
- Were they in your city or you had to travel to go to them?
  - Example of event in Goteborg
  - Example of abroad or in another city
    - Transportation
    - Accommodation

### Info/Ticketing

- How did you get information about these conferences?
- How did you find/buy tickets? And other information regarding the conferences (place, time, schedule, speakers)?
- What activities do you need to carry before going to an event? (registration till the day)

### Experience

- What do you think attendees remembered the most out of these conferences?
- In your opinion, do you think there was something missing from these experiences? Or what do you wish to see next time you attend a conference?
- Did you encounter any kind of difficulties while attending a conference? Either before, during or after the event. (schedule, accommodation, transportation, finding info, free time)

About networking during an event, would you like to have more possibilities to talk to other people? Do you think the networking should be facilitated somehow?

- Did the conference had a mobile app?
  - What was it mainly for?
  - Did it help you to achieve specific goals? Like what?
  - What features you would like to have?

In the end:

- Would like to test some concepts in the future?

## Appendix 2: Prioritized list of functions

Functionality	Customer value	Feasibility	Total	Macro-category	Sub-category
Compare different 3rd parties with each other	4	5	9	Managing third parties	Find 3rd parties
Get notifications in case of cancellations (speakers, etc.)	5	4	9	Managing third parties	Cancellations
Get suggestions based on the event theme and type (venues, catering, speakers)	5	4	9	Managing third parties	Find 3rd parties
Search and filter 3rd parties	4	5	9	Managing third parties	Find 3rd parties
Get notifications when a 3rd party respond	5	3	8	Managing third parties	Confirmations & updates
Manually add the 3rd parties to the service (A24)	4	4	8	Managing third parties	Find 3rd parties
Organizers and 3rd parties should send confirmed agreements between each other	5	3	8	Managing third parties	Confirmations & updates
Send notification to 3rd parties about updates/cancellation with option to ask to confirm receiving	5	3	8	Managing third parties	Cancellations
Send out proposals to one service	5	3	8	Managing third parties	Select third parties
Auto collection of agreements with reflection of the visualization of the budget	5	2	7	Managing third parties	Confirmations & updates

Functionality	Customer value	Feasibility	Total	Macro-category	Sub-category
Group different parties together for easy communication (have different channels for different parties)	4	5	9	Communication	Communication channels
Integrate their email system					
- Emails that are related to the event can be shown in an organized inbox (venue, catering, speakers) and so on	5	3	8	Communication	Communication channels
Quickly visualize different aspect related to the event (3rd parties, budget, etc.)	4	3	7	Communication	Overview
Visualize the ongoing tasks, and people assigned to these tasks	4	3	7	Communication	Overview
Send thank you email	5	5	10	Maintain releation	Attendees
Import existing data to the database and group them - from existing services (services, CRM)	5	5	10	Managenement	Attendees
Provide attendees with a checklist of what they should consider before going to the event (visa, etc.)	5	4	9	Managenement	Attendees
Visualize status of the invited attendees (n° of people who registered / n° who haven't reply)	4	5	9	Managenement	Attendees
Send notification to attendees about updates with option of asking to confirm receiving	4	4	8	Managenement	Attendees
Send reminder and ask for confirmation 1 week before event takes place	5	3	8	Managenement	Attendees

Functionality	Customer value	Feasibility	Total	Macro-category	Sub-category
Get an overview about different 3rd parties, for example: - Catering's: options, reviews, pictures, prices, favorites, availability - Venue: facilities, max # of people, number for rooms, catering, nearby hotels)	4	3	7	Managing third parties	Find 3rd parties
Send out proposal to multiple parties from the same category	5	1	6	Managing third parties	Select third parties
Set a budget, select dates (nearby events, public holidays), city and number of attendees	5	1	6	Managing third parties	Communication channels
- Get different ready packages based on their inputs (automated suggestions)	5	1	6	Managing third parties	Communication channels
Clear cancellation policies	4	4	8	Registration	Attendees
Get notification when attendees cancel their registration	4	4	8	Registration	Attendees
Handle registration through the system (personal information, allergies) - Sell tickets - Automatic checking-in of attendees by scanning tickets	5	2	7	Registration	Attendees
Keep track of previous registrations to auto fill registration forms for existing customers	3	3	6	Registration	Attendees
Provide relevant information about transportation, accommodation, and other details to attendees	4	1	5	Registration	Attendees
Add an event (Name, date, budget...)	5	5	10	Setup an event	
Auto creation of budget based on n° of attendees	5	5	10	Setup an event	

Functionality	Customer value	Feasibility	Total	Macro-category	Sub-category
Access to relevant info and updates (n° attendees, allergies...)	5	4	9	Third parties	Managing an event
Clear agreements and cancellation policies	4	4	8	Third parties	Managing an event
Register to the database - Add social media pages - Add special offers - (The venue) can add the room layouts to the service (room size, inventory, max # of people, accessibility)	5	3	8	Third parties	Profile management
Communication channels between third parties with each other and with attendees	5	2	7	Third parties	Managing an event
Get notification when they receive an offer (Accept, deny or request a change)	5	2	7	Third parties	Managing offers / proposals
Upload and share files with organizers	3	3	6	Third parties	Managing an event
Update their availability times - or it can be automatically integrated	4	1	5	Third parties	Profile management
Slack integration	3	5	8	Communication	Communication channels
A website can be automatically created from the information provided by the organizer	4	3	7	Communication	Communication channels
Add style and content to the website for the event	4	2	6	Communication	Communication channels

Functionality	Customer value	Feasibility	Total	Macro-category	Sub-category
Ask for feedback	5	2	7	Maintain relation	Attendees
Filter data using different attributes (role in the company, country, etc.)	4	4	8	Managemement	Attendees
Invite 3rd parties to the service	3	4	7	Managing third parties	Find 3rd parties
Confirm overview of the event before sending proposal, for example: Estimated number of people, price per person, options (food & drinks), dates, agenda (automatically added), venue details	5	1	6	Managing third parties	Select third parties
Visualization of last time to make a change with a 3rd party agreement	3	3	6	Managing third parties	Confirmations & updates
Rate and review different services	3	2	5	Managing third parties	Social
Retrieve information and reviews about 3rd parties and activities from external services (eg. travel agencies, <a href="https://www.booking.com">booking.com</a> , etc.)	4	1	5	Managing third parties	Find 3rd parties
View 3rd parties using Date view (show availability)	4	1	5	Managing third parties	Find 3rd parties
Provide ready templates for different event types	5	2	7	Organizer's assistant	

Functionality	Customer value	Feasibility	Total	Macro-category	Sub-category
Suggestion of tasks for organizers : <ul style="list-style-type: none"> <li>- Prepare on-boarding checklist for attendees</li> <li>- Create personalized indoor map for attendees</li> <li>- Send notifications to attendees about updates</li> <li>- Prepare welcome message to all attendees with relevant info few days before event</li> </ul>	5	2	7	Organizer's assistant	
Seat planner: plan who sits next to who <ul style="list-style-type: none"> <li>- Automated seating based on different criteria</li> <li>- Attendees grouped manually using different filters (company, nationality, etc)</li> <li>- Select &amp; assign seatings for individuals or groups</li> </ul>	4	1	5	Plan seating	
Waiting list for interested attendees (in case of cancellations)	3	3	6	Registration	
Adding teams / Collaborative environment	3	2	5	Setup an event	
Overview of the events they are assigned to: dates, status etc.	1	3	4	Third parties	Managing offers / proposals
"Integrate their social media accounts <ul style="list-style-type: none"> <li>- Sent out info to different channels (website, social media, etc.) using one place"</li> </ul>	3	2	5	Communication	Communication channels
Chat with a specific third party at a time	2	2	4	Communication	Communication channels
Facebook messenger integration	1	2	3	Communication	Communication channels
Divide attendees to different accommodations near the venue - if there is no place	3	2	5	Managing third parties	Select third parties

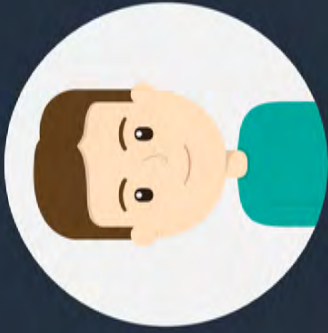
Functionality	Customer value	Feasibility	Total	Macro-category	Sub-category
Access the archive of previous events planned	1	3	4	Managing third parties	Find 3rd parties
Favorite or follow third parties to get updates and to highlight them as favourites	1	3	4	Managing third parties	Social
Register interest for 3rd parties that are not available	1	3	4	Managing third parties	Find 3rd parties
Get recommendations about similar 3rd parties in case of cancellations	1	2	3	Managing third parties	Cancellations
Automatic invitations to people in waiting lists (when there is cancellation)	3	3	6	Registration	Attendees
Cancel registration through different channels (sms, email, service itself, etc)	1	2	3	Registration	Attendees
Get notifications from interested organizers even if they are fully booked	1	3	4	Third parties	Managing offers / proposals
Advertise their services	1	2	3	Third parties	Profile management
Cancel registration through different channels (sms, email, service itself, etc.)	1	2	3	Third parties	Managing an event

Functionalities with 10, 9 and 8 as total value

Functionalities with 7, 6 and 5 as total value

Functionalities with 4 and 3 as total value

## Appendix 3: Digital service



Hi, nice to meet you! My name is Willy!

Are you planning an event? I can be your personal assistant and help you out throughout the all process. I'm humble, efficient and I have great knowledge about the event business industry.

Wondering what I can help you with?

Let's set up some event details together!

Logo

Overview

Venue

Catering

Speakers

Attendees

+

Add new service

Willy the assistant

Ok no problem, I will help you to make it work anyway :) I also recommend you to consider planning the event around the first week or the last week of September.

Anna Eriksson

I will consider it thanks

Willy the assistant

Great, what is you estimated overall budget for the event? Please also tell me which currency do you want to use.

Anna Eriksson

It needs to be under 100.000 SEK

Willy the assistant

And how many attendees are you planning to have?

Anna Eriksson

I will invite around 150 guests

Willy the assistant

Great, I will help you to create an unforgettable experience for all of them. Which services are you looking for?

Willy the assistant

Great! Now our working place is set up. In the sidebar you can look for services and add new ones by clicking on the plus button and I will provide personalized results based on your inputs and my experience in this domain.

Willy the assistant

You're successfully logged in and you have imported 326 contacts. You can always access your contacts list from the attendees section on the left menu.

Event details

Gothenburg

September 2017

100.000

150 attendees

Reply to willy or ask any questions in your mind

Willy is writing a message now

114







I recommend Matsmak because it has really good reviews and special lunch and buffet alternatives



Anna Eriksson



## Matsmak

★★★★★

Overview Pictures Policies Reviews

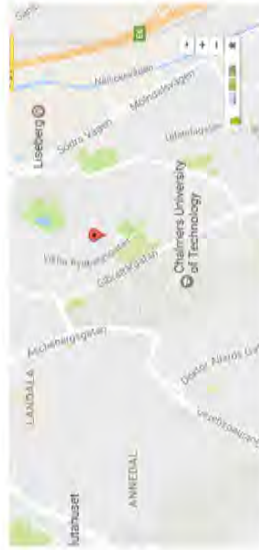
Catering med matsmak i Göteborg är ett enkelt val. Vi gör det lätt att servera lite finare mat när du bjuder in vänner eller kolleger och vill slippa alla bekymmer.

- Vi har gott om förslag på hur man skämmer bort sina gäster med catering både till företaget och hemmet.
- Genom åren, har vi serverat bufféer och middagar på många olika teman i Göteborg med omnejd.
- Vi tar beställningar både i stort och smått. Vi jobbar både med stora företagsseminarier och små middagar.
- Vi lämnar gärna menyföreläsningar, som anpassas till varje tillfälle eftersom vi tycker om att förnya oss och helst jobbar med säsongens råvaror och primörer.

Phone: 031-15 35 30

Opening hours: Monday-Friday 11-14.30

Drakegatan 1. 412 50 Göteborg (30 km from venue)



## Recommends

Breakfast

Lunch

Dinner

Mingle

BREAKFAST #Swedishbreakfast

Apelsinjuice, Skinka, Ost, Färskost, Kripsallad, tomatsskivor och gurkskivor, yoghurt med müsli med nöttar, Mörkt & ljus  
hembakt surdegsbröd, smör. 75:-

LUNCH #Buffé

Chilisotat Laxpett, Mini-Pirog, Bruschetta, Spansk Köttbullar, Krispig Lökpaaj. 175:-

DINNER #Middagsmeny

Tre Kräfter, Walewska, Chokladfudgetårta 313:-

## Current selection

150x Swedish breakfast

150x Lunch buffé

150x Dinner menu

Estimated total price  
**SEK 22 050**



By sending a proposal, you are not reserving the catering. You're just asking about the availability and to get a quotation for 150 guests.

Send proposal

Logo

Overview

Venue

Catering

Speakers

Attendees

+

Add new attendee

Now we just wait to get a reply back :)

Anna Eriksson

Q

It usually takes around 3 to 6 hours to get a reply

Click here to see this proposal

Matsmak

Drakegatan 1, 412 50 Göteborg

CultureNetworkingSwedish

Proposal sent

It usually takes around 5 to 9 hours to get a reply

Click here to see this proposal

Hisingens Hembeställning

Slättadammsgatan 9, 417 27 Göteborg

CultureNetworkingSwedish

Proposal sent

Kock & Catering

★★★★★

Övre Kaserngården 12, 415 02 Göteborg

Vår affärsidé är att leverera och servera smärnor, mat av säsongs råvaror till företag och privatpersoner. Behöver du hjälp och inspiration för att evenemang kan vi hjälpa dig med mat, dryck, blommar, poslar, möbler, ljud och musik och allt annat runt talställen.

BusinessGrillSwedish

Breakfast

#Swedishbreakfast

Dijon och örtbodyad laxfil

Kycklingspett

Serranodsmorsullar

Plocksalad med melon och ananas

Est. price for 150 guests: 8 250,-  
(Price p.p.: 55,-)

Lunch

#Salacarte

Spansk paella

Västerbotentarta

Chèvre (fransk getost)

Tiramisu

Est. price for 150 guests: 63 100,-  
(Price p.p.: 354,-)

Dinner

#Buffé

Lammyrterfile

Svensk majs-kyckling

Sallad

Rostad pumpa

Såpotatis abbi

Est. price for 150 guests: 38 100,-  
(Price p.p.: 254,-)

chateau Beirut

★★★★★

Karl Johansgatan 7, 414 59 Göteborg

På den berömda Karl Johansgatan i Göteborg finner vi denna pärla till libanesisk restaurang. Den som inträder här känner sig genast förflyttad till tusen och en natt. Välkommen in till oss och njut av den mysiga miljön och den underbara maten.

CultureGrillLebanese

Breakfast

#Swedishbreakfast

Fälatel: Friterade bön- & kikärtsbollar, vegetarisk

Foul modammas: Kokta

bonbonor marinerade med

persiska lönnar och olivolja

Est. price for 150 guests: 8 650,-  
(Price p.p.: 58,-)

Lunch

#1000 och en natt

12 olika meze, kalla och

varma smärarätter

Mixtur av fläskfil, kycklingfil och lamracks.

Est. price for 150 guests: 29 250,-  
(Price p.p.: 195,-)

Dinner

#Buffé

Tauk: Vitlöksmarinerad

Kycklingfilspett med

konserverss\*

Semake Harra: Fried salmon

with vegetables

Est. price for 150 guests: 29 250,-  
(Price p.p.: 195,-)

Swedish taste

★★★★★

Est. price for 150 guests: 29 250,-  
(Price p.p.: 195,-)

Breakfast

#LITTLE BUFFET

LUNCH

#BIG BUFFET TASTY

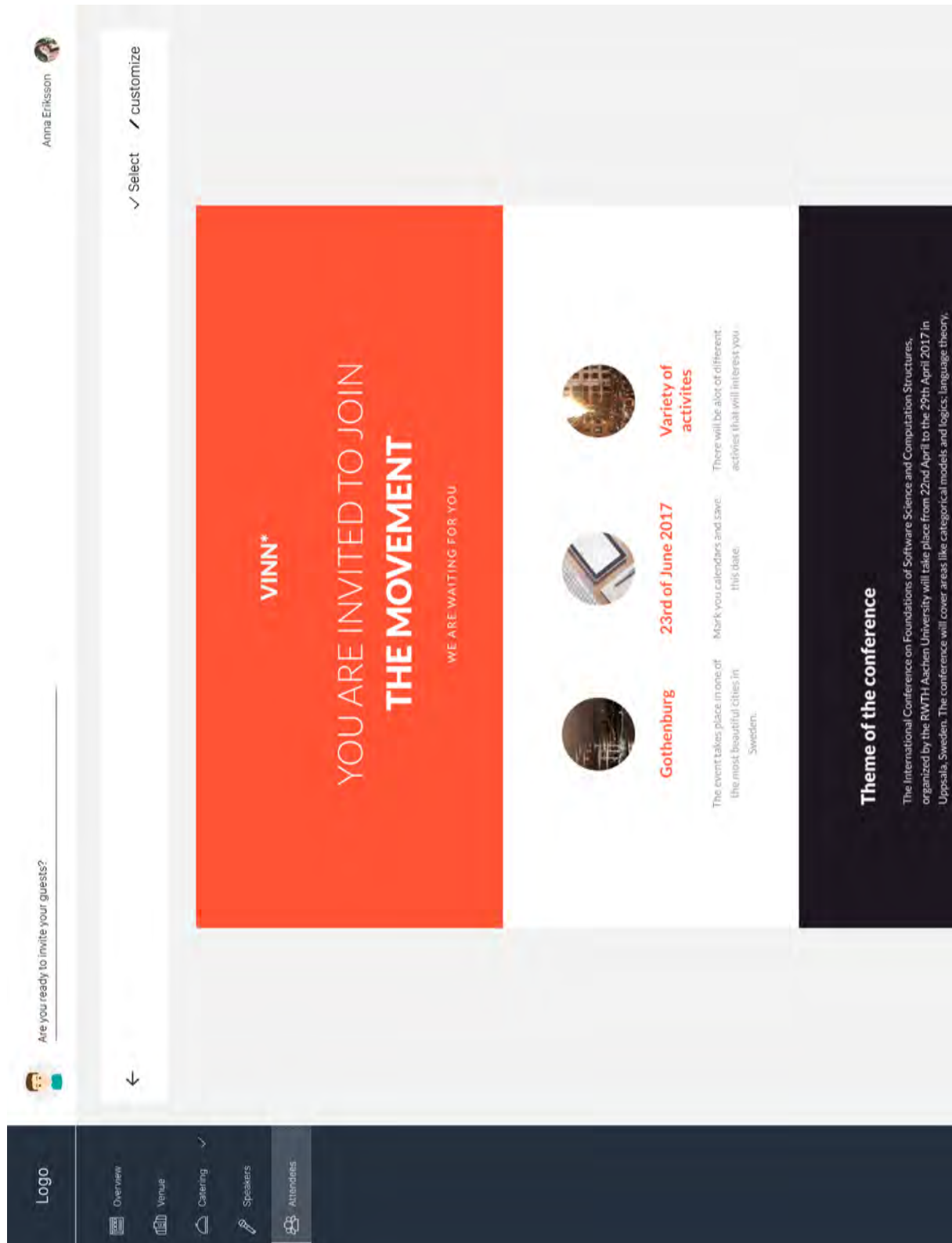
Dinner

#MUSICAL BUFF

118







It is time to select who would you like to invite

Anna Eriksson

Total: 326 contacts

Invitation sytle

Guests

Preview and send

+ Basic information					Q	
		Company	List	Phone	Email address	1-11 of 326
<input checked="" type="checkbox"/>		Humblebee	Vinngroup	+4673733899	anna.simon@humblebee.se	...
<input checked="" type="checkbox"/>		Humblebee	Vinngroup	+4673733899	adam.hans@humblebee.se	...
<input checked="" type="checkbox"/>		Humblebee	Vinngroup	+4673733899	adrian.axel@humblebee.se	...
<input checked="" type="checkbox"/>		Humblebee	Vinngroup	+4673733899	alicia.nills@humblebee.se	...
<input checked="" type="checkbox"/>		Humblebee	Vinngroup	+4673733899	benjamin.viktor@humblebee.se	...
<input checked="" type="checkbox"/>		Humblebee	Vinngroup	+4673733899	erik.albin@humblebee.se	...
<input checked="" type="checkbox"/>		Humblebee	Vinngroup	+4673733899	elsa.william@humblebee.se	...
<input checked="" type="checkbox"/>		Humblebee	Vinngroup	+4673733899	henry.noel@humblebee.se	...
<input checked="" type="checkbox"/>		Humblebee	Vinngroup	+4673733899	jacob.sam@humblebee.se	...
<input checked="" type="checkbox"/>		Humblebee	Vinngroup	+4673733899	linnea.arvid@humblebee.se	...
<input checked="" type="checkbox"/>		Humblebee	Vinngroup	+4673733899	linnea.elliott@humblebee.se	...



