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Engaging Skeptics in Using a New Employee Engagement Software

Iterating on interaction design aspects of an Employee
Engagement Software to reduce the risk of user resistance

Master's thesis in Interaction design and Technologies

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MASTER'S THESIS 2022

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Department of Computer Science and Engineering
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Abstract

Many companies of today have realized the importance of measuring what is called Employee Engagement (EE) in order to give the employees a fulfilling and positive work experience. Employee Engagement Softwares (EES) are tools that help the Human Resources (HR) department to track and measure the employees' well-being and work satisfaction. This study will focus on a newly developed EES application prototype called Vibee. When implementing a new software there is always a risk of user resistance and this topic has not been the main focus in the earlier development of this application. Literature provides general guidelines on what to think about to reduce the risk of user resistance, but not specifically for the field of interaction design when developing an Employee Engagement Software application. Taking a Research Through Design approach, utilizing methods from the 5 Stages in the Design Thinking Process, the aim of this study is to contribute to the field by bridging the existing gap in literature, i.e. the lack of guidelines available for interaction designers when designing an Employee Engagement Software (EES) with a focus on minimizing the risks of user resistance. Hence, the research question of this thesis reads: *What guidelines can be provided for designing a new Employee Engagement Software aimed to engage everyone, including skeptics?*. In order to reach an answer to our research question, another aim is to provide a deliverable in the form of a new iteration of the Vibee prototype.

The project resulted in a high fidelity prototype as well as a compilation of seven guidelines to be used for interaction designers to take into consideration when developing an EES application.

Keywords: Interaction design, User experience (UX), User interface (UI), Research through Design, Employee Engagement (EE), Employee Engagement Software (EES), User resistance, User acceptance, skepticism.

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1

Introduction

Many organizations of today have realized the importance of improving Employee Engagement [26]. Company managements need tools for understanding their employees' sentiments and the employees thus need an easy way to communicate their opinions and feelings regarding their workplace.

Employee Engagement (EE) is a term that reaches as far back as to the 1990s, when Kahn [39] first introduced it. EE is important for both the individual employee, as well as the company and their customers. An engaged employee is said to be more committed [37][7] and dedicated [7][14] to work and thereby be more productive [7][51] and perform better [37][41] than an unengaged employee. High engagement amongst employees therefore leads a greater success for the company [37][41][7][51]. But how can companies measure their employees' engagement to work towards an ideal workplace where they can give their employees a fulfilling and positive work experience?

Employee Engagement Softwares (EES) is the term for different tools used to track and analyze feedback from employee's thoughts and opinions on their workplace [20]. There are a lot of different EES applications to be found, e.g., SurveyMonkey, Leapsome, Happy at Work and Officevibe. In a society where new applications and technology is being developed at a rapid speed, there will of course be people that are more skeptical toward what is being developed than others. User resistance to new computer-based information systems can be defined as a user's opposition to changes associated with new IT implementations, or behavior that intends to prevent implementation and use of the new systems [42]. User resistance is seen by many to be one of the main reasons for why there have been so many failed information systems [30][40][4].

Having companies aiming for an increase in EE, by developing and implementing new EES applications, should of course be of high interest to have the employees actually using these applications, and aiming to decrease user resistance. It is important to make the employees know the values of the EES application and not feel like it is just another chore [66]. If the employees are not adopting to the EES applications it might in turn result in a lack of pure employee engagement, or at least a missed chance to increase it. This would be unfavorable, as EE is associated with things such as employee satisfaction [7] and enthusiasm [7][14][62] at the workplace, as well as success of organizations [37][41].

As Employee Engagement has been shown to be remarkably beneficial for companies, it is understandable why so many variants exist on the market, and that even more are developed. However a gap has been found in research, as there are no clear guidelines aiding interaction designers in their work to prevent user resistance when developing a new Employee Engagement Software.

This study will focus on a newly developed EES application prototype called Vibee. When implementing a new software there is always a risk of user resistance and this topic has not been the main focus in earlier development of this application. The creators of Vibee has expressed a concern of not reaching out to enough people outside the consultant company where it was developed, which may have resulted in missing valuable insights from people expressing skeptical attitudes. The aim of this study is to contribute to the field by bridging the existing gap in literature, i.e. the lack of guidelines available for interaction designers when designing an Employee Engagement Software (EES) with a focus on minimizing the risks of user resistance. Hence, the research question of this thesis reads: *What guidelines can be provided for designing a new Employee Engagement Software aimed to engage everyone, including skeptics?* In order to reach an answer to our research question, the study will use the Vibee prototype with the aim to provide a deliverable in the form of a new iteration. The project is also expected to result in a compilation of guidelines for interaction designers to take into consideration when developing an EES application.

The remainder of this report will include a background chapter where the context of the study is presented together with previous work. After this theory chapter will describe various concepts to aid understanding of the scope of the paper. The methodology chapter will provide outlines of what frameworks will be followed and the methods that might be conducted throughout the process. A time plan of the project will be presented and ethical considerations describing both general and specific ethical concerns related to this thesis. Furthermore, the execution and process chapter will describe how the project was conducted by following the 5 Stages in the Design Thinking process. Lastly the result of this thesis will be presented followed by a discussion and conclusion.

2

Background

This section contains explanations on the research area - the company and their new Employee Engagement Software (EES) application, research problem, research question, and aim. It will also present stakeholders, related research and products related to this thesis.

2.1 Research area

This thesis will focus on a new Employee Engagement Software (EES) application developed at a consultancy company named ESSIQ [15]. ESSIQ was founded in 2005 with around 250 employees in three offices in Sweden: Stockholm, Malmö and Gothenburg [15]. The company has collaborations with other companies where they provide them with a department for aspects of design or implementation, as well as consulting services for user-centered product development [15]. ESSIQ's areas of expertise are within Mechanical Engineering, UX & Service Design, Agile Management, Connected & Embedded Systems, Green Technology & Electromobility, Test & Quality Engineering, IT & Cloud Services, and Simulation & Visualization [15].

ESSIQ promote themselves by having their main focus on employee's satisfaction and engagement [15]. Their vision is that engaged employees work harder and create increased customer satisfaction and hence a greater value for the company [15].

ESSIQ wanted a change in how they were measuring Employee Engagement (EE) where most of the feedback from employees were received through informal meetings or email. The company also sent out annual surveys through the software SurveyMonkey to collect and analyze employee feedback. Collecting data this seldom may give an unfair image of the employees' thoughts throughout the year. It also creates a need for longer surveys which does not motivate employees to answer them. With a lack of feedback from employees it results in a lack of data on what needs to be changed to improve EE. ESSIQ therefore wanted to improve their way of measuring employee satisfaction through more frequent and playful solutions.

In 2021, a master thesis project was conducted at ESSIQ by Bristav and Högberg [6], to develop a concept and prototype of a new Employee Engagement Software. The goal was to fill the literature gap in the path between Employee Engagement and Employee Engagement Softwares. They found a lack in research of how to design and apply EES and decided to develop an application prototype with the aim to

2. Background

encourage frequent feedback on employees' opinions in a fun and motivating way to improve employee satisfaction. Another important factor was to make employees a part in improving the company as well as providing a feeling of community. The aim to bridge this literature gap matched well with what could be developed at ESSIQ. The result of the master thesis came to be a concept and prototype of an application called Vibee (which will be referred to as the original prototype under the chapter *Execution and process*).

2.1.1 Vibee

Vibee includes four main features, divided into different pages of the application: Vibes, Missions (Uppdrag), Rewards (Belöningar) and Analytics (Analys) [31]. Before entering the first page of the application, the user swipes through an app onboarding. Here, four different screens describe the features: *Vibes - Share your opinions and thoughts completely anonymous in Vibes and earn HoneyPoints* (Figure 2.1a), *Missions - Complete different missions, level up your achievements and earn HoneyPoints* (Figure 2.1b), *Rewards - Collect or donate the rewards you unlock by your collection of HoneyPoints* (Figure 2.1c), and lastly, *Analytics - Explore and analyze statistics about your company and your own wellbeing* (Figure 2.1d). The four features will now be described more in detail in the sections below.

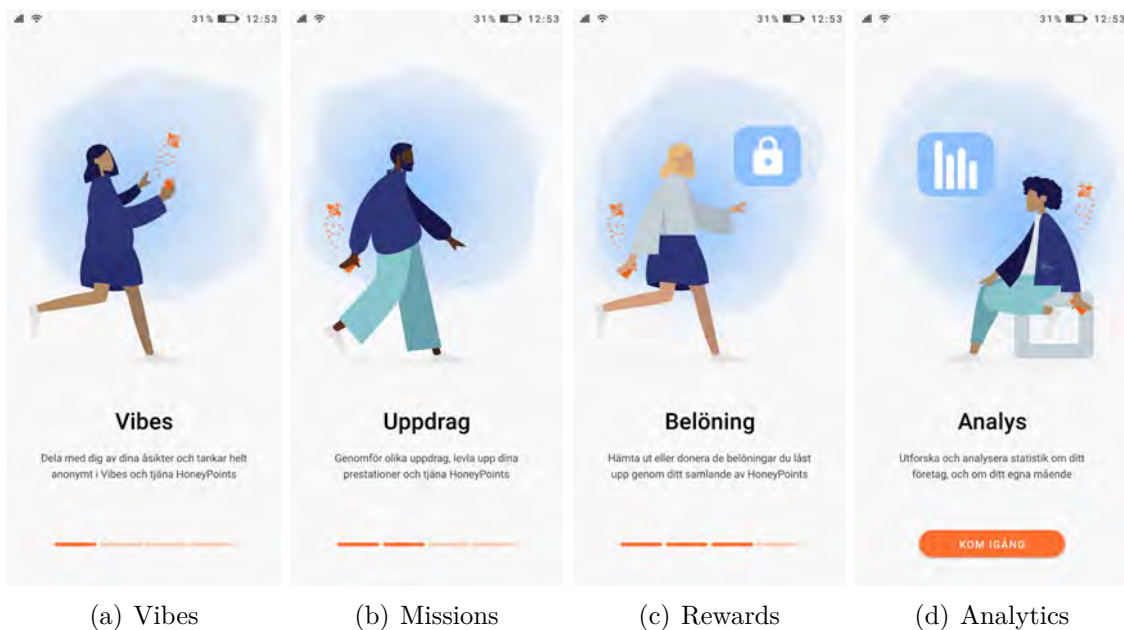


Figure 2.1: The onboarding screens of Vibee

2.1.1.1 The Vibe page

The Vibe page (Figure 2.2a) consists of two tabs: Vibes and Notifications (Notiser), but we will leave the Notifications tab for now and return to it later. Vibes are short, anonymous and frequent pulse surveys. They contain a set amount of questions and are a way to measure employee satisfaction by collecting data regarding

employees' opinions on things such as leadership and general well-being. The Vibes are presented through an illustration, information about how many days are left to answer, the name of the Vibe, e.g. *April Vibe*, how many questions it contains and how many Honeypoints it is worth to answer. A blue button stating *Lets go!* (Då kör vi!) is presented below, which is supposed to be pressed to start answering the survey.

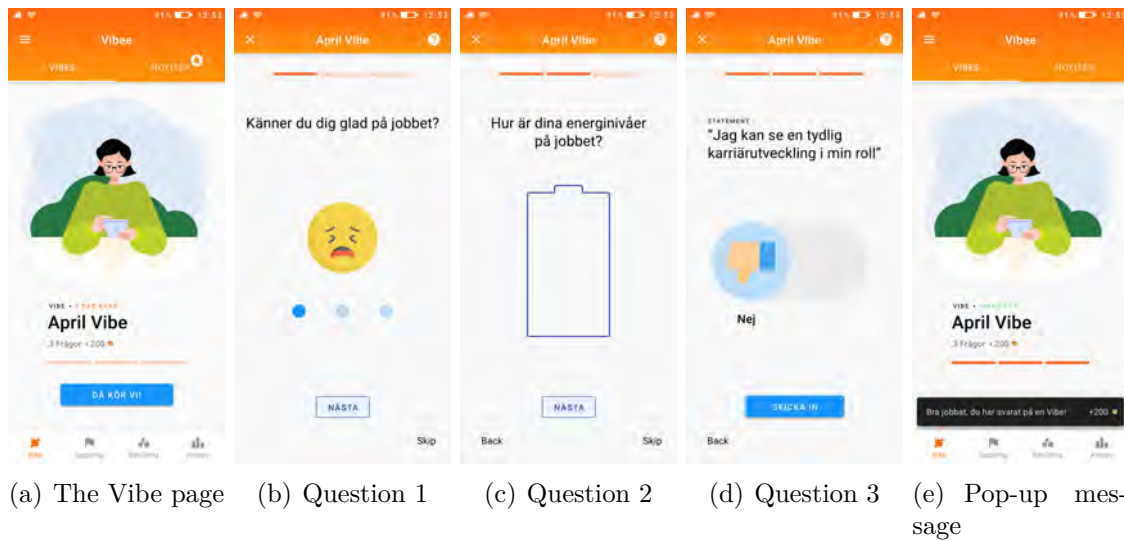


Figure 2.2: Answering options in a Vibe and the confirmation message that appears when submitting

When pressing the blue button, the user enters the first question of the Vibe (Figure 2.2a) that reads: *Are you feeling happy at work?* and can then press Next (Nästa) to continue or Skip if they do not want to answer. The second question (Figure 2.2b) reads: *How are your energy levels at work?* and the third (Figure 2.2c) is a statement that reads: *I can see a clear career development in my role.* When the user eventually presses Submit (Skicka in) the Vibe page appears again, and a confirmation message pops up at the bottom of the screen (Figure 2.2d) stating *Well done, you have answered a Vibe!* and informs that the user got 200 Honeypoints. The text stating how many days are left to answer a Vibe is now changed to *submitted* (inskickad).

2.1.1.2 The Missions page

A big part of the concept of Vibee is that it provides a gamification aspect in order to hopefully motivate users to both answer Vibes but also to engage in activities that improves not only the workplace environment but also the personal well-being. Missions (Uppdrag) and Achievements (Prestationer) are presented on the second page of the application. At the Missions tab (Figure 2.3a) the user can scroll among different trust-based Missions, e.g., Coffee date (Fika date) or Lunch walk (Lunchpromme). The cards represent each mission, and they provide information about whether it is active- upcoming or completed, the name of the mission, how many

2. Background

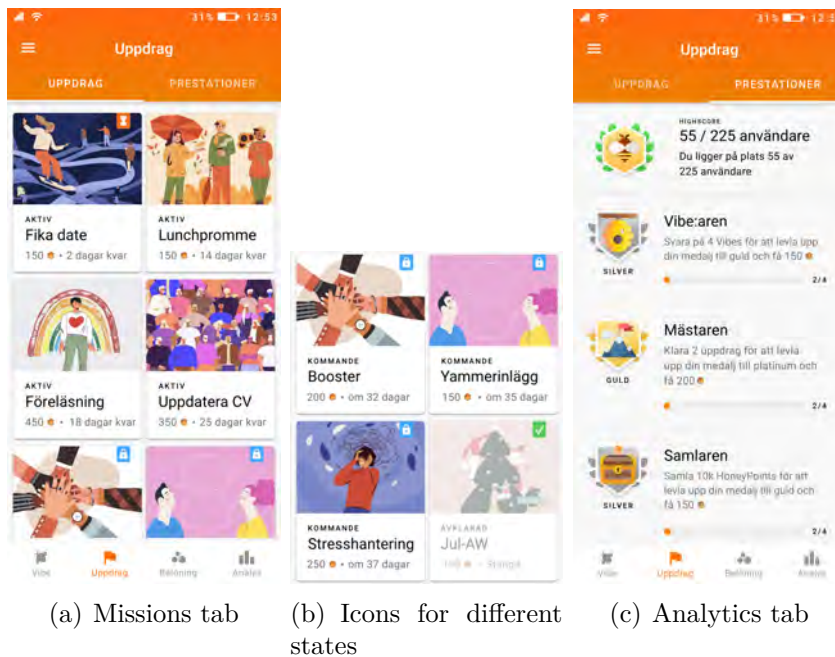


Figure 2.3: The Missions page

Honeypoints it is worth as well as how many days are left either to complete it or until it becomes active. Small icons may appear in the top right corner of these cards. The hourglass (Figure 2.3a) is there to draw attention to that there are only a few days left to answer, the lock and the checkmark (Figure 2.3b) shows that it is an upcoming Vibe and that it is already completed.

The Achievements tab (Figure 2.3c) is the second part of the Missions page. By using the application, i.e., answering Vibe:s and completing missions, the user can level up in different categories. An example of a category is The Collector (Samlaren), where the current level is *Silver*. To level up in this category, the explanatory text says that the user can collect ten thousand Honeypoints to level up to *Gold* and earn 150 Honeypoints. There are six different categories to level up within, all connected to different ways of using the app: answering Vibe:s, completing Missions, collecting Honeypoints, donating rewards, and examining the Analytics page.

2.1.1.3 The Rewards page

The third page of Vibe shows the users' Rewards (Belöningar) (Figure 2.4). When the user has collected a certain amount of Honeypoints (through answering Vibe:s and completing missions) they will be rewarded in different ways, e.g., by receiving a voucher for a lunch delivery (Lunchleverans). They can choose to either Collect (Hämta) or Donate (Donera). It is possible to swipe between already collected/donated and upcoming ones. The meter below the text informing about the reward shows how many Honeypoints the user currently has and how much is needed to get the reward.

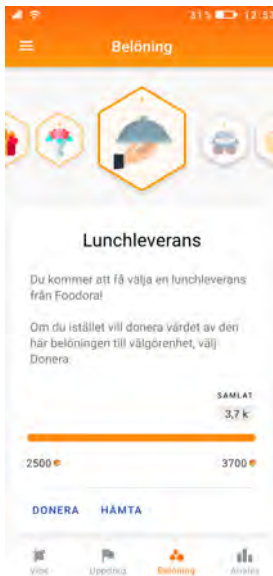


Figure 2.4: The Rewards page

2.1.1.4 The Analytics page

The fourth and last page of the application is the Analytics (Analys) page (Figure 2.5a). Similar to the Vibe- and Missions page, this page includes two different tabs; a personal one where the user's Name (Namn) is supposed to be shown and a Company (Företaget) tab. This page provides a way for the employee to overview statistics based on what has been answered in Vibes.

At the top of the page, the user can expand a section called *Your personal statistics* (Din personliga statistik) (Figure 2.5b) to read: *Your personal statistics show an average in the Employee Satisfaction Index (ESI) compiled through your answered Vibes. ESI is measured between 0-100, where a high number is positive and a low number is negative. This page is personal and only you have access to the information. Note that your data is not yet reliable. Continue to answer Vibes to increase the reliability of your data.* Below the expandable section comes a part that presents the average ESI-value (NMI), together with arrows and a number to show a trend (a negative trend in this example). Following this comes two sections that presents *Your strongest positive trend* (Din starkaste positiva trend) and *Your strongest negative trend* (Din starkaste negativa trend) together with the name of the categories in which the trends have occurred; Development (Utveckling) and Work situation (Arbetsituation).

The second to last section of the personal tab provides information about the ESI of seven different categories: Development (Utveckling), Work situation (Arbetsituation), Feedback, Relations (Relationer), Well-being (Välmående), Engagement (Engagemang), and Leadership (Ledarskap). These categories are expandable to let the user read more (Figure 2.5c). Under Development it says: *The Development category is about the development of the employees. This involves feelings and opin-*

2. Background

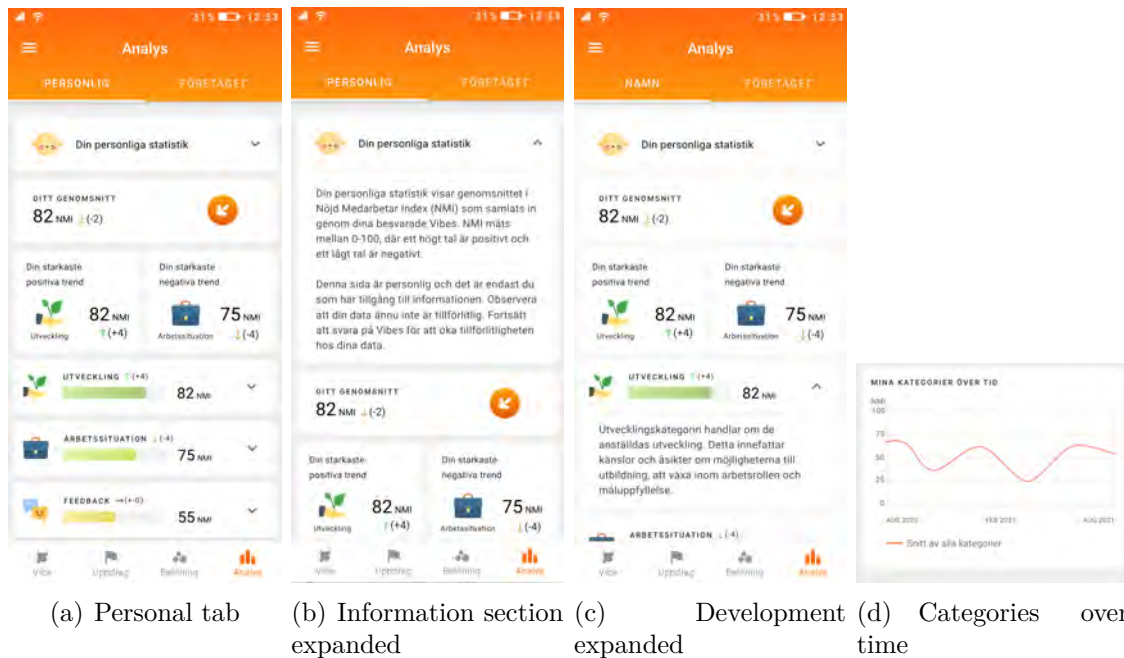


Figure 2.5: The Analytics page - Personal tab

ions regarding the opportunities for education, to grow within the work role and goal fulfillment. The very last section at the personal tab shows a graph that tells the user about the different categories over time (Mina kategorier över tid) (Figure 2.5c).

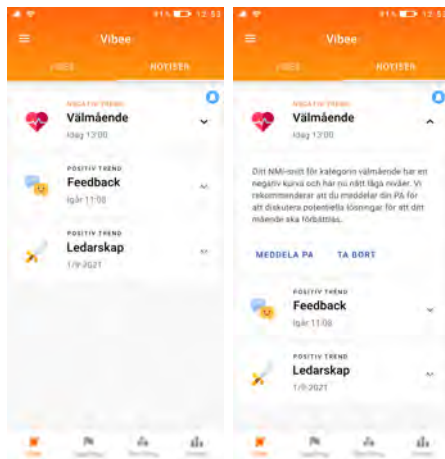
The company tab is similar to the personal tab with a small difference in the formulation of the text, as well as that the graph is presented at the top of the page instead of the bottom.

2.1.1.5 The Notifications tab

Connected to the Analytics (Analys) page is the Notifications (Notiser) that, as mentioned, is a tab placed at the Vibe page (Figure 2.6a). As calculated and presented at the Analytics page, there can be positive and negative trends in the data, and when these trends tend to be very high or very low - the user will get notifications about this. To read the notification, it is expanded by simply pressing it, and the message will appear in an expanded section (Figure 2.6b). Regarding the negative trends, the user will be encouraged to contact their manager (PA). The user can then decide if they want to - non-anonymously - get in contact with their manager by pressing Notify (Meddela) or if they want to Delete (Ta bort) the notification.

2.2 Research problem

ESSIQ has expressed wishes to gain more insight into how an Employee Engagement Software can reach out - and actually engage *everyone* in the company and



(a) All notifications (b) Expanded notification

Figure 2.6: Notifications tab at the Vibe page

not only those having a positive attitude towards a new system. A problem that has been brought up is that the previous development of Vibe mainly involved people working at ESSIQ, that had a positive attitude - and that feedback is lacking from those who might be more reluctant to use it, i.e. being skeptical.

Getting feedback from people that work on the company on where a system is developed comes with a risk of bias since they have more knowledge about both the company and perhaps even the specific system that is tested [48]. Employees also have a greater probability to be more motivated to use the system than non-employees would be [48]. But of course, if a system is developed to be used specifically by the company's own employees, user testing with participants from the company is a good way to go [48]. However, a future goal for ESSIQ is now to reach out to other consultant companies with this app as well, meaning that there is a need to test with more people - not only employees at ESSIQ.

A problem is that there seems to be a gap in previous work as no guidelines are to be found for interaction designers to prevent user resistance when developing Employee Engagement Systems specifically.

2.3 Research question

The research question of this thesis reads: *What guidelines can be provided for designing a new Employee Engagement Software aimed to engage everyone, including skeptics?*

2.4 Research aim and deliverables

The aim of this study is to use an interaction design approach to contribute to the field by bridging the existing gap in literature, i.e. the lack of guidelines available for developing Employee Engagement Softwares (EES) with a focus on minimizing the risks of user resistance. In order to reach an answer to our research question, another aim is to provide a deliverable in the form of a new iteration of the Vibee prototype.

2.5 Stakeholders and target group

The primary stakeholders for this thesis will be end-users working at ESSIQ, the company thesis will be written in collaboration with, as well as other consultant companies. The end-users will be the HR department, company management as well as employees at these companies.

These end-users might affect the thesis outcome differently due to different views on what they expect to get out of an EES application. The employees may have much more to say regarding transparency and what they require of the application in order to feel safe sharing personal opinions that the HR department will analyze. The HR department on the other hand may have less to say regarding privacy and data sharing and more to say about pure functions of the application and how they can be improved to facilitate their work.

Opinions from employees and HR-department on other companies than ESSIQ will be of high interest as they should have a non-biased view on Vibee, as they have not been included in the development process. This could be positive as these companies might be less reluctant to share constructive feedback and criticize both design and functions of the application. What is more, they may have a completely different working culture, which can be beneficial to help broaden perspectives.

As this thesis is written at Chalmers University of Technology, they will also be considered a stakeholder. The thesis work will be affected by Chalmers as there are specific requirements on type of content in the project work and report writing, as well as requirements for clearly taking an interaction design approach.

The target group will be students and workers ranging in the ages between 20 and 68. These characteristics seem reasonable being target users of an EES application designed for IT consultant companies. However, the HR department is not considered target users in this thesis since in organizations where this application will be used, the HR department will most likely be obligated to use it while it is voluntary for employees.

2.6 Related research

In order to identify a gap in research, a substantial amount of previous work has been browsed on the topics Employee Engagement and Employee Engagement Software from both a HR department- and employee perspective, user resistance to information system implementation, and technology adoption.

And as previously mentioned, studies have been conducted within these fields separately. In this section, guidelines and insights provided in the literature within the separate fields are presented.

2.6.1 Employee Engagement from a HR department perspective and employee perspective

A study made by G2 crowd [20] has shown a difference between HR department VS employees perspective on EES. According to the study, a majority of HR departments in different companies can see an increased Employee Engagement over the last year while only 34% of employees feel more engaged.

HR departments have a much stronger belief that EES can improve Employee Engagement compared to the employees. 32% of employees have also stated that they are not interested in their companies implementing an Employee Engagement Software [20]. However, the strategies the majority of employees have claimed would improve their engagement at work are for managers to ask for feedback from employees and acknowledge their achievements [20]. These strategies are things that EES can provide. The reason for these results from the study is thought to be that the majority of the employees (77%) don't even know what EES are and thereby how the solutions can improve their engagement in the workplace [20].

G2 Crowd summarizes their findings in the study that EES won't lead to engaged employees on its own. It is up to the company to provide the right information to make EES familiar to all employees and to make them understand how to use it [20].

2.6.2 Measuring Employee Engagement

Gallup Q12 created are 12 key questions created to measure the strength of Employee Engagement by Gallup organization [21]. Gallup Q12 was a result of a study conducted on more than 400 companies and 80.000 in-depth interviews [65]. These key questions are based on 12 employee needs mentioned below [21]:

1. I know what is expected of me at work.
2. I have the materials and equipment I need to do my work right.
3. At work, I have the opportunity to do what I do best every day.
4. In the last seven days, I have received recognition or praise for doing good work.
5. My supervisor, or someone at work, seems to care about me as a person.

6. There is someone at work who encourages my development.
7. At work, my opinions seem to count.
8. The mission or purpose of my company makes me feel my job is important.
9. My associates or fellow employees are committed to doing quality work.
10. I have a best friend at work.
11. In the last six months, someone at work has talked to me about my progress.
12. This last year, I have had opportunities at work to learn and grow.

Reformulating these 12 employee needs into questions could look something like this: *Do I know what is expected of me at work?* [65]. According to Buckingham and Coffman [63], a fully engaged employee should be able to answer yes to all 12 questions.

2.6.3 User resistance in IT

In a literature review, Ali et al. [4] summarize what has been presented in literature regarding sources of resistance and the ones that especially relate to the IT domain are factors such as lack of interaction between users and system developers [9], lack of training for a new system [4], lack of education about the soon to be implemented system [28] or lack of communication [4][46][50][69].

What causes user resistance can also be divided into system-, people- and interaction oriented approaches [4]. From the system oriented approach, the resistance is described to occur due to technology related factors, e.g., performance security, ease of use and the user interface [42] and if the system after implementation is shown to be unreliable or provide bad quality from a technical point of view [30]. In the people oriented approach, user resistance is described to occur due to factors, e.g., attitudes and experience towards technology, as well as personal background, skills and traits [42]. From the interaction approach point of view, the resistance is affected by the fear of changes in power relationships or job- and social structures [42].

2.6.3.1 Overcoming resistance

One approach presented sprung from change management ideas to help overcome user resistance is called the participative approach which refers to involving people in the change management process [59]. Ali et al. [4] also summarize a few concrete guidelines presented in the literature under participative techniques, such as keeping a shared vision at the workplace [4], involving the users in the process when developing the system that is to be implemented [45], keeping clear communication and providing a feedback channel [8] [43] and sharing information about the new system [4].

2.6.4 Technology renewal, user resistance, user adoption

In a study by Shirish and Batuekueno [60] they dive deeper into the field of user resistance. They examine IT-savvy people at large French multinational corporations

and their resistance when it comes to implementing a new HR tool in one specific company (going by the acronym GOODTECH). Their research question read: *In the specific context of a technological renewal initiative within a French company, what are the factors that contribute to IT user resistance and IT usage among IT professionals?* [60]. They contribute to the well-established theory of user resistance within the IT field, in a context of HR after implementing a new tool, by studying usage among the IT-savvy end users' perceptions. The results of the study could constitute guidance when implementing technology renewals and provide support to change management professionals as they work toward reaching user adoption and active usage of new HR applications [60].

The grand part of their theoretical background assesses the status quo bias theory [57], the Theory of planned behavior [3] and the equity implementation model [38] that altogether lay ground for the more holistic theory by Kim and Kankanhalli [40] called User Resistance Model (URM) [60]. The authors bring up the fact that Kim and Kankanhalli [40] mention how the URM could be used to explain not only resistance to IT, but also the adoption behavior [60]. Though, they further state how prior research lack this integration of the user adoption variable into the model, and this gap is something they address in the paper They provide a developed URM to reach greater insights into why IT-savvy employees would resist or adopt to a new HR tool, and they present the integration of three new concepts into the model: behavioral-, normative-, and control beliefs [60]. The scope of prior literature is expanded by this developed URM model as it offers a theoretical framework for how to understand user resistance and user adoption in the stages after implementing a new technology renewal.

The study was designed to gain understanding of why the uptake of the new HR tool (called MyKaalsheet) was not satisfactory in the company GOODTECH, as well as understand what factors lead to adoption versus resistance in the specific context [60]. MyKaalsheet was introduced to streamline work and the implementation was made progressively. End users at the IT-department in the large corporation were recruited to be the first support unit for GOODTECH (that would be affected by the change to the new HR tool) [60]. MyKaalsheet was developed internally at the company, and the tool is specifically for the employees to self-report work hours, extra hours as well as absence from work. It was developed alongside two other tools already used within the company, which both provided similar functions. The company decided to let the HR department abolish the two other tools, since they had three different offering the same service and MyKaalsheet was the most effective tool. Despite having the majority preferring MyKaalsheet, only 30% of the employees actually used the tool when this change was done in 2017 [60].

The study results provide theoretical as well as practical implications that could help prevent or reduce resistance among IT-savvy employees specifically [60], and the authors sum up their practical findings in a few guidelines for organizations to consider when implementing a new HR tool. First, it may be critical to reduce the switching cost that arises via the change to a new tool, as it has a direct effect on

resistance. This could be done by enhancing positive opinions from peer and mentor networks at the workplace. Second, it is important to emphasize the benefits of the tool and clearly communicate the gains of switching prior to implementation [60]. Lastly, having briefings and follow-ups after a period of use could ensure that the good intentions are well communicated and sustained even after implementation [5]. Doing this would increase intention to use and convert the passive employees that are looking for workarounds and instead make them more active users of the tool [60].

2.6.5 Technology acceptance, adoption models and theories

Steering away from the term user resistance, instead moving into a field of adopting technology, we find the term *technology acceptance*. To explain user adoption of new tech, numerous frameworks and models have been developed, which introduce factors that may be affecting users' technology acceptance. The technology acceptance model (TAM) is in literature shown to be the most cited and model within its field of technology acceptance, and it declares user motivation to be affected by three factors; perceived ease of use, perceived usefulness, and attitude toward use [67]. There are a few other factors, often described as external variables that can also be considered in TAM; characteristics of the system, user training and their participation in both design and implementation process [71].

3

Theory

This chapter presents and defines theory on concepts that will be used throughout this report. This includes the design based concepts User Experience (UX) and Interaction design as well as the subject matters that cover the thesis research problem from a human perspective - Employee Engagement (EE), as well as technical perspective - Employee Engagement Softwares (EES), and user resistance.

3.1 User Experience (UX)

User experience (UX) design is an overarching concept that focuses on an overall experience a user go through with a product [34]. Here, the focus lay not only on interactive elements but also how the elements look, feel or succeeds to deliver certain outputs [34]. The user experience starts even before the user has started using the product [53]. How does the user feel when thinking of buying this product? How does the feeling change or stay the same when the user first holds and looks at it? All details of the product from look and feel to ease of use, affect how the users will experience it [53]. When designing an interactive product, it is impossible to design a specific user experience. However, what interaction designers do, is to design for user experience [53]. User experience is divided into four parts: utility, usability, desirability, and brand experience [18].

The first step in user experience is utility where the design team must see how their product is useful and valuable for the users and meet the users needs. If this is not met for the potential users they will not start using the product in the first place [18].

Usability is the second step where the central part is to make the product intuitive and easy to use [18]. Ease of use focuses on making the users reach their goals effortlessly as well as minimizing the complexity of the product [17]. Other important factors in usability is to focus on the products look and feel as well as having a product potential users would choose over similar products [18].

Desirability is the third part where the focus lay on making users attracted to the product with its taste and aesthetics. This part is important to make users engaged with the product in a way where they want to keep interacting with its features [16] and making it memorable to the users [18].

The last part, brand experience, is out of reach for designers to control, based on

the user’s experience on the company or brand of the product [18].

3.1.1 Interaction design

Interaction design is a discipline within UX that are more concerned with the pure interaction between systems and users. Furthermore, it focuses on how information can be presented within a system in order for users to best understand the information provided (which is sometimes referred to as information design) [34]. If an interactive product is frustrating or hard to use, the users will not have a good user experience [53]. For designers, it is important to view the design from a user’s perspective since their experience with the product might be totally different. Different products will be used by different types of users, it is therefore required to design knowing who will be using the product, as well as when, and how the product will be used [53].

Interaction design is considered an essential part in all fields, disciplines and approaches which research and design computer-based systems for people (Figure 3.1) [53].

Interaction Design		
Academic disciplines	Design practices	Interdisciplinary overlapping fields
Cognitive Science Computer Science Design Enigneering Ergonomics Informatics Psychology Social Sciences Software Engineering	Artist-Design Film indstry Graphic design Industrial design Product design	Cognitive Engineering Cognitive Ergonomics Computer-Supported Cooperative Work (CSCW) Human-Computer Interaction (HCI) Human Factors (HF) Information Systems Ubiquitous Computing

Figure 3.1: Fields, disciplines and approaches of interaction design

3.2 Employee Engagement (EE)

Employee Engagement (EE) is a multifaceted construct which lacks a definition that all researchers are united about. To make sense of it, definitions from different literature have been collected and summarized.

Kahn was the first to introduce the concept Employee Engagement in 1990 [37]. According to Kahn [39], the level of an employee’s engagement depends on a cognitive, emotional and physical aspect. The cognitive aspect is connected to the employee’s beliefs in the organization, their leaders, and work environment. The emotional aspect focuses instead on the employee’s feelings and attitudes towards these three factors. Lastly, the physical aspect is all about the energy used to accomplish the

daily work tasks.

Kahn [39] also argues that the three psychological conditions; meaningfulness, safety and availability, are related to if an employee is engaged or disengaged at work. Meaningfulness is connected to the work, where the employee has to ask themselves how meaningful their performance at work is. The safety conditions are more linked to the social environment at work and the organization's social norms, which depends on both the colleagues and manager. Lastly, availability is connected to the individual employee and how available the employee feels when it comes to the work.

How engaged the employees are can depend on the engagement of their managers [41]. If the manager is disengaged it is contagious for the employees [41]. Another connection between managers and employee disengagement can be having bad working relationships, low or no communication, and not being given any permission in taking decisions [41]. However, having a manager with good leadership and communication, and that is committed and dedicated to the company can be a big drive in Employee Engagement [41]. Hence, the feeling of being valued and involved at work has a great link to Employee Engagement [37][41]. Employee engagement is therefore both dependent on the individual employee as well as the workplace [41].

There are many behaviors that can be associated with Employee Engagement. Some of these are the employees' feeling of commitment [37][7], dedication [7][14], satisfaction [7], enthusiasm [7][14][62] and passion [7][68][62] for their organization and its values. An engaged employee is said to be emotional and intellectual connected to their work [41]. The employee is engaged when feeling attached to the organization [41] and is motivated [41] to work for the success of the organizational goals [37].

A lot of the research is united about the link between Employee Engagement, employee performance and the success of the organization [37][41]. High engagement amongst employees leads to increased employee productivity [7] [51], better performance [37][41] and a greater success for the company [37][41][7][51]. When the employee has a fulfilling and positive work related experience, there is also a lower tendency for the employees to quit [41].

3.3 Employee Engagement Software (EES)

Employee Engagement Software (EES) is the name of tools that help the Human Resources (HR) department track employee's feedback on their well-being, thoughts regarding the work environment, colleagues, managers, progress, etc. [20]. Employee Engagement (EE) is often measured through employee surveys that are analyzed and evaluated [20]. With the help of EES the HR department can take action based on the feedback from employees to make their work experience better and thereby increase Employee Engagement [20].

3.3.1 Off-the-shelf solution and Bespoke solutions

There are two ways of measuring Employee Engagement: off-the-shelf solutions and bespoke solutions [65].

Off-the-shelf solutions are when an organization uses measurement tools made to suit different kinds of companies [65]. This is a good way to go if there is an interest in benchmarking Employee Engagement to similar companies [65]. This solution has however negative aspects since it is not tailored to the specific company and may therefore miss some needs of the employees at the workplace [65]. The use of well made measurement tools also do not come for free [65]. One example of off-the-shelf solutions are Gallup Q12 created by the Gallup organization [21] mentioned in the Background chapter.

Bespoke solutions is a way to create a customized set of questions instead of using already made measurement tools [65]. This way the company can measure specific needs of their employees and focus on the most important parts that will increase their employee's engagement [65]. This solution is flexible and tailored to the specific company [65]. However, one negative aspect of this solution is that it cannot be used to compare Employee Engagement against other companies [65].

3.3.2 Annual surveys and Pulse surveys

Regardless of the use of off-the-shelf solutions or bespoke solutions is important to have in mind how often Employee Engagement should be measured [65]. Number of questions in employee surveys and time between the surveys are often connected [65]. If the survey is filled with a lot of questions it should take a longer time until the next survey [65]. If the company instead wants to measure Employee Engagement more frequently, the questions in employee surveys should be fewer [65]. This can be divided into two kinds of surveys: annual surveys and pulse surveys [70].

Annual surveys are the more traditional way of measuring Employee Engagement [70]. Even if this type of employee measurement is considered valuable it is examined to not be as efficient as more frequent surveys, such as pulse surveys [65] [7]. These pulse surveys are structured with fewer questions on a more specific topic than annual surveys [7]. Therefore, these kinds of surveys can also be sent out with more regular and frequent intervals to employees [20][7]. This way the HR department can track and evaluate Employee Engagement with more real-time responses [7] and thereby make reporting on these responses quicker [70]. Pulse surveys are therefore also often seen as less frustrating than annual surveys [70].

When it comes to what kind of survey to use, a good mindset is “less is more” [65]. It can take over a year for large organizations to collect, analyze, evaluate and make improvements on employee's responses on annual surveys [7]. As mentioned, a more frequent handout of surveys could hence give a more beneficial effect on Employee Engagement [65][7][70]. Despite this, there is a majority of companies that still track their employee's engagement annually or even more infrequently [7]. However,

thanks to the advanced technologies, pulse surveys are growing and being used more and more often as a tool to measure Employee Engagement [7][70].

3.4 User resistance

User resistance to implementation of new computer-based information systems (IS) expresses itself in several different ways, not only through physical sabotage but also simple non-use of a system [30][4]. It can also be defined as the users' opposition to changes associated with a new IT implementation [42]. It is seen by many as one of the main reasons why there have been so many failed information systems [30][40] [4].

3.5 New Public Management

The term New Public Management (NPM) describes the approaches that were developed in the 1980s and were a part of the aim to increase efficiency in public service organizations through the use of private sector management models [32]. A study conducted by Christopher Hood in 1995 showed that the NPM had a prominent breakthrough in Sweden. A consequence of the shift to the NPM is the strive for making more things measurable so that people in the organization can take action from a distance, based on information regarding the quality of the organization [1]. NPM has been widely criticized. The fact that things are measurable in a quantitative way does not imply a guarantee for quality [1].

4

Methodology

This chapter provides information on the research approach, Research through Design, as well as the 5 Stages in the Design Thinking process which will be followed during the design process. Lastly, the chosen methods for this project will be described together with why the methods were chosen, and the phase they are planned to be used in.

4.1 Research through design

Research through Design (RtD) is a research approach that is done through design-practice strategies [29]. This approach conducts research with use of design skills and products [12], with the aim to find solutions to a problem and discover new knowledge from practical creative processes [29]. RtD can be useful when engaging with wicked problems [72] which are unique, complex problems difficult and sometimes impossible to solve [35]. If finding a solution to a wicked problem, it will not be true or false, but instead good or bad [35].

4.2 5 stages in the Design Thinking Process

Design thinking is the term for a design methodology providing a solution-based problem solving approach, and it is especially useful for dealing with ill-defined, complex or unknown problems. The 5 Stages in the Design Thinking process are formulated as follows: Empathize, Define, Ideate, Prototype and Test [33].

4.2.1 Empathize

In the Empathize phase, it is all about gaining an empathic understanding of the problem and the users [33]. It consists of various methods to understand peoples' experiences and motivations. What is important here is to set aside our own assumptions, and instead observe, engage and actually immerse oneself in the context of the people in order to gain a deeper understanding of the issues and user needs involved [33].

What is done here in a more practical sense is that a substantial amount of information about the people and their needs is gathered and brought further into the next stage [33].

4.2.2 Define

The Define stage is about putting together the collected and created information [33]. Now it is time to analyze observations and summarize them in a way so that they turn into well formulated and actionable problems. It is beneficial to formulate problem statements in a human-centered manner since having a defined problem helps when heading into the upcoming phases [33].

4.2.3 Ideate

The Ideate stage starts from the solid background of a well defined, human-centered problem statement and moves into the activity of generating ideas and coming up with several alternative solutions to the problem [33].

There are hundreds of different ideation methods to try at this stage, and there is no such thing as too many ideas. The goal is rather to generate as many ideas as possible in the beginning of this phase, plausible or not, and narrow down the alternatives just before entering the Prototype stage [33].

4.2.4 Prototype

The Prototype stage is about producing several low-fidelity, inexpensive versions of products or product features in order to investigate the ideas generated in the Ideate stage. These creations may be tested and/or shared within or outside the design team [33]. The aim here is to find the most suitable solution for the problem(s) identified in previous phases. This is an iterative process of testing and refining, where all solutions are either accepted, iterated and tested again, or completely rejected due to the user's experiences [33]. Reaching the end of this stage, the design team should have gathered enough insights about product constraints, and a better idea of how real users would think, feel and behave when interacting with the product [33].

4.2.5 Test

In the testing stage, it is time for designers or evaluators to attentively test the best solutions created in the prototyping stage [33]. Even though this is the fifth and final stage, it is still a highly iterative process, and the generated results in the testing stage are used to further develop a greater understanding of the users and conditions of use, and redefine one or more problems [33]. Alternations and refinements are made here to rule out problem solutions in order to continuously gather a deeper understanding of the users and the area of use [33].

4.3 Chosen methods

This section will provide information about methods used in this project, as well as arguments for why they are suitable and which of the 5 Stages in the Design

Thinking Process they will be conducted in.

4.3.1 Mindmapping

Mind maps are a visual and nonlinear representation of ideas organized into different relationships or themes [27] [11]. This method is helpful for idea generation and creative thinking [11]. The method will be conducted in the Empathize phase in order to aid gaining an overview of the theoretical frameworks and the respective guidelines from the separate fields. Mindmapping will also be conducted in the Ideation phase when brainstorming different solutions to problems found in the Empathize phase.

4.3.2 Affinity diagram

Creating affinity diagrams is a great method for making sense of a large amount of data [47]. It is the process of clustering data (often using sticky notes) into groups with similar meaning in order to get an overview of the information gathered or generated. The data used in this method can be everything from brainstorming ideas, ethnographic research data, opinions, user needs, design issues or a mix of different types of data [47]. This method will most likely be used within all five phases as it acts as a handy tool for staying grounded in data and understanding a great amount of information at hand.

4.3.3 Benchmarking

Benchmarking is used to collect data and compare similar products to analyze competitors and find ways to improve one's own product in order to become one of the more attractive alternatives on the market [58]. Functional benchmarking is a version which implies a comparative analysis of products' tasks, functions and processes, and is sometimes described as synonymous with best-practice benchmarking, i.e. finding the best performing product in a certain field [58]. Benchmarking will be suitable in the Empathize phase as it may help find other products aiming to increase Employee Engagement.

4.3.4 Think-aloud Protocol

Think-aloud Protocol is a method where users test the design and articulate through all tasks what they are doing, why they choose to do it that way, and their overall thoughts and emotions [27]. This gives an insight of user experience such as potential problems of the interface, and where user's might get confused or frustrated [27]. It also provides information on what aspects of the design the users find delightful [27]. In order to discover 85% of all usability issues five participants is a common number to use [24], which will be taken into consideration when conducting this method. Think-aloud Protocol will be conducted to examine user's first impressions how intuitive the interface of the interactive prototype of Vibee is, as well as to collect qualitative data on potential users' opinions, thoughts and experience on Vibee. This method will be conducted together with Semi-structured interviews in

the Empathize phase to discover usability problems in the Vibee interface, and in the Test phase to test if the design solutions made have solved the found problems.

4.3.5 Semi-structured interview

Semi-structured interviews include a combination between opened and closed questions and is more adaptive than other interview techniques; structured and unstructured interviews, thanks to the possibility to both have a set of pre decided questions, as well as an open discussion and follow-up questions [53]. Semi-structured interviews will be used in the Empathize and Test phase to collect qualitative data from potential users' opinions and thoughts on Vibee, both when problems are empathized and when improvements have been made. Usually when conducting interview studies, more than five participants are required to discover users' needs [24]. Interviews in this project will however be used as a complement to Think-aloud and focus more on getting thorough answers on things that might not have been uttered out loud to make sure no important reflections are missed.

4.3.6 How Might We (HMW)

Formulating problems into How Might We-questions frames the problem(s) in a way more suited for ideation. The better the questions are formulated, the easier it will be in the ideation to come up with solutions [56]. How Might We (HMW) will be used as a method in the Ideation phase to phrase found problems into questions as a way to spark ideas instead of focusing on them being problems.

4.3.7 Co-Design Workshop

Co-design workshops are a way to evaluate the design and ideate on new design ideas with potential users and other stakeholders[27]. A co-design workshop will be conducted during the Ideation phase to gain inspiration on design solutions on found problems by potential users. During this workshop the ideation methods Worst possible ideas and Extreme characters will be used.

4.3.7.1 Worst Possible Idea

Worst Possible Idea is a method for ideation where the participants brainstorm the worst solutions they can think of for a problem [36]. People might feel a bit uncomfortable sharing crazy or silly ideas in front of others, so this is a good warm up technique as the goal is to produce silly, and even purely bad, ideas. This relaxes participants and stokes creativity in order to make it easier to challenge assumptions and gain insights toward good ideas. This method will be used as a warm up method in the Ideate phase during the Co-design workshop.

4.3.7.2 Extreme characters

The Extreme characters method helps people think outside the box and steer away from designing only for prototypical characters within a target group [13]. By taking

fictional characters that are extremes, extreme character traits are brought up and taken into consideration, which might not happen if only thinking about more emotionally shallow or prototypical target user [13]. Extreme characters will be used as a method in the Ideate phase during a Co-design workshop as a fun brainstorming session. This to make participants think outside the box when brainstorming around solutions to the found problems.

4.3.8 Crazy 8's and dot voting

This method is one of Google's core Design Sprint methods [64]. It is a sketching method which challenges participants to sketch eight distinct ideas in eight minutes and it is important to remember that these sketches do not have to be perfect. The goal with this is to have people push themselves beyond their first idea, daring to sketch down ideas as they come which leads to a greater variety of solution ideas to a problem [64].

Dot voting is a way to democratically sift among available options in a group setting [22]. The thought is to provide each participant with a number of dots (tokens) that can be assigned to available options. The process begins with gathering the material (the available options), then defining the voting constraints, e.g., if you are allowed to vote for your own ideas and how many votes each participant will have (a general rule is to have the number of votes correspond to a quarter of available options). Then everyone votes quietly, and then it is time to calculate the outcome and, if necessary, narrowing down and revoting [22].

Crazy 8's will be suitable within the Ideation phase and will be used to rapidly brainstorm around different design solutions to specific problems. Dot voting will be used together with this method as a lot of ideas will be formed in Crazy 8's and, dot voting makes it clear to see what ideas are most wanted to be brought forward in the design process.

4.3.9 Wireframes and Mockups

Wireframes are a low-fidelity representation of the structure and functions (rather than visual design) of a website or application [49]. Wireframes are useful when collecting early feedback on the basic functions and usage [49]. Wireframes are suited to be created during the Ideate phase when sketching more refined design solutions to defined problems.

A mockup is a static but realistic representation of the look and feel of a product [52][2]. Mockups focus more on the finalized visual design such as what colors to use [52][2]. Mockups will be created during the Prototyping phase to collect feedback from potential users before designing an interactive prototype.

4.3.10 Questionnaire

A questionnaire is a set of questions on a specific topic sent out to a large group of participants [53]. These questions are answered in writing and the outcome is a more wide and general insight from potential users [53]. An online questionnaire will be conducted during the Prototyping phase to get a mix between both quantitative and qualitative data from potential users before testing the final product. The questionnaire will include the Likert scale rating system as well as free text answers.

4.3.10.1 Likert scale

Likert scale is a set of closed-ended questions [25] where the scale is divided into five or seven answer options [55]. This type of rating system is usually used in questionnaires to evaluate a digital or physical product based on attitudes and opinions of potential users [53]. A Likert scale measures the strength of attitudes which usually is in the scale of agreement; *Strongly disagree - Strongly agree*, however, the measuring statement exists in other variations as well such as importance, likelihood and frequency [61]. A likert scale will be used as a base for a questionnaire conducted to evaluate the refined design. Close-ended questions in the form of this rating system will be chosen since open-ended questions take longer to answer and can lead to a lower response rate [25]. The Likert scale will most probably be chosen over Yes or No questions since the questionnaire will focus on evaluating the potential users' opinions and attitudes towards the design. Yes or No questions could be too narrow since the participants might not always be able to answer a 100% yes or no. Some Yes or No questions could also be too leading when asking what the participant thinks of the design, where the participant might be led to the wanted answer. These types of questions are more suited for basic validation [55].

5

Planning

The plan for finding solutions to the problem statement is to follow the 5 Stages in the Design Thinking Process described in the methodology chapter. This design process starts with understanding and empathizing with the users, defining the problem, ideate and generate ideas and solutions for the problem, prototype different versions of the solution, and lastly test the solutions.

This study will be a new iteration of the previous study by Bristav and Högberg [6], which now takes the aim of widening perspectives, discovering new problems, and reaching out to a greater range of people. The planned outcome of this thesis is to provide guidelines of how to design for people who in some way are resistant to using a new EES application, as well as design ideas in the form of an iterated Vibee prototype.

5.1 Project plan

The first four weeks of the master thesis total 20 weeks, starting with literature studies and writing a planning report. After these weeks, the design process will start by following 5 Stages in the Design Thinking process: Empathize, Define, Ideate, Prototype, and Test. This design process is planned to take around 11 weeks to conduct where the report writing will be done before and after each of the design phases. The last three to four weeks is planned to focus on the final writing of the report, preparing a presentation as well as opposition.

The timeplan is presented in a Gantt chart in Figure 5.1.

5. Planning

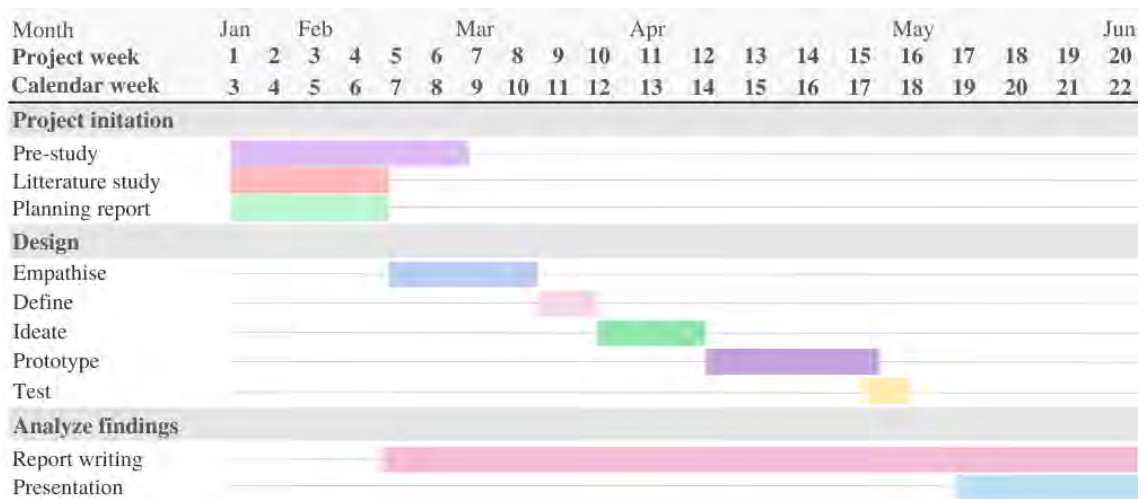


Figure 5.1: Gantt chart of project time plan

6

Ethical issues

General ethical concerns may arise depending on what type of method is conducted. Some major points to think about are of course consent and transparency. Participants of the various methods should always get to know why their participation is valuable and how potential data will be stored. General Data Protection Regulation (GDPR) is therefore to be considered if/when working with participants that provide personal information and sensitive data [54]. Further, participants will be assured that no personal information will be conveyed to management or HR.

To ensure that user research conducted is ethical, one key focus is to be honest by letting participants know about the research purpose, whom the study is done for and how the results will be used [44]. Though at times, it may be unfavorable to tell participants about every detail right away. For example, exposing which company the research is done in collaboration with or presenting the purpose of the study may influence participant replies. If there are obvious reasons to hold back some information, it is important to provide participants with the full set of information as soon as possible [44].

In evaluation studies, it is important to let the participants know what they will be asked to do, under what conditions the data will be collected as well as what will happen to the data after participating [53]. Other things to remember is to tell participants their rights, such as that they may withdraw at any given time [53][44]. A informed consent form [53] will be used in order to present this kind of information, that the participants can sign before taking part in the study.

Another major responsibility when conducting user research is to think about how a participant may experience certain situations. Some may for example be nervous when testing something, hence it is important to put their minds at ease and that they can not do anything wrong [44]. This will be an important factor to remember in this study, as a prototype or fully developed application may be tested with participants at some points in time. And if there are risks that private or sensitive information may come up when conducting a method, it is beneficial to only let one or two people participate at the time [44].

When designing for an online interface ethical issues surrounding accessibility and usability can arise, such as visual and cognitive impairments, and is, therefore, an important thing to take into consideration [10]. An accessibility issue could also depend on for example differences in culture and language [10].

If quotes are used in the study report, they should be phrased in the exact same way as they were told by the participant, and presented together with information about how many expressed similar opinions [44].

7

Execution and Process

This chapter will present how the project was executed by first conducting a literature study, and then understanding and empathizing with the users, defining the problem, ideating and generating ideas, prototyping, and lastly testing the final solution.

7.1 Literature study

A literature study was conducted to acquire knowledge in areas relevant to the thesis topics. As this project is done within the fields of Employee Engagement (EE) and Employee Engagement Softwares, with the aim to minimize user resistance toward an EES currently under development, the separate topics had to be researched. An additional aim with the literature study was to examine if there were any overlaps in these fields and what can be done to minimize user resistance taking an interaction design approach.

The literature used in this thesis was browsed on the platforms Chalmers Library¹ Google Scholar², ResearchGate³, and Gothenburg University Library⁴.

Keywords used when browsing literature were: Interaction Design (IxD), User Experience (UX), Employee Engagement (EE), Employee Engagement Softwares (EES), designing for skeptics, user resistance and technology acceptance.

7.1.1 Summarizing guidelines from literature

During the literature study guidelines from the specific fields Employee Engagement (EE), Employee Engagement Softwares (EES) as well as user resistance and user acceptance, were visualized in a mind map. The goal of using this method was to get a better overview of what guidelines are presented within each field. The aim was to generate a summarized list of existing guidelines to compare both Vibe and already existing Employee Engagement Softwares against.

¹<https://www.lib.chalmers.se/>

²<https://scholar.google.com>

³<https://scholar.google.com>

⁴<https://www.ub.gu.se/>

To explore eventual similarities or ways to connect or combine the separate fields, the guidelines were grouped together based on similarity in an affinity diagram. A bottom-up approach was taken as we began to group fragments together, and specific themes started to emerge further into the process. Examples of guidelines that was grouped together from different fields were *Increase employee's understanding on what an Employee Engagement Software is and how it can improve Employee Engagement* from the fields of EE and EES, and *Emphasize the benefits of the tool* from the field of user resistance. These two examples of guidelines from separate fields was together reformulated into the two guidelines: *Increase understanding of value/impact the app will have on the individual user* and *Increase understanding of value/impact the app will have on the company*.

The outcome from the mind map and affinity diagram was a compilation of 11 different guidelines (Appendix A).

A gap was found in the existing literature: a lack of guidelines available for interaction designers when developing Employee Engagement Softwares (EES) with a focus on minimizing the risks of user resistance.

7.2 Empathize

The Empathize phase began with conducting a benchmarking study to compare other Employee Engagement Softwares (EES) applications. As a next step, it was time to get potential users' perspective on Vibe. Since it was found in the literature study that much could be done *within* software interfaces in order to minimize the risk of user resistance, it was decided to conduct a usability study using the methods Think-aloud Protocol together with semi-structured interviews.

7.2.1 Analyzing Vibe and its competitors

As a first step of the Empathize phase Vibe was analyzed with the found guidelines in mind to define a focus on what to look closer at. For example, when looking at both the Vibe (surveys) and Analytics page of Vibe, the level of transparency was noted down - as transparency was found to be important in order to reduce the risk of user resistance. Taking a look at the Vibe interface with the found guidelines in mind, a few possible problem areas were found, however, to further explore possible areas of improvements, the interface needed to be compared with competitor applications on the market.

A benchmarking was therefore conducted where Employee Engagement Softwares were chosen from a website called g2 [19] showing the best and most attractive EES applications on the market. The chosen applications were: Kazoo, Leapsome, Motivosity, Empuls, and Culture amp. The same approach as in the analysis of Vibe was taken. Analyzing against the guidelines helped us look for what they do to provide information about, e.g., what areas are most relevant to the user or the

maximum amount of time and effort the user can put into using the application.

The outcome of this was an easy-to-overview summary of inspirations on how to improve Vibee in areas that had earlier been defined as weaker in the existing design. A few ideas started to form here, however, these were set aside and saved for later, but acted as a valuable tool to bring into the Ideation phase when data from users had been collected as well.

7.2.2 Think-aloud and interviews

Potential users were brought into the process to examine the intuitiveness of the design, the perceived ease of use as well as attitudes toward the concept of Vibee. This was done by conducting the method Think-aloud Protocol (further referred to as Think-aloud or simply TA) combined with a semi-structured interview.

Six participants were recruited through convenience sampling; both students and workers in the ages between 26-55 to get a wide range of insight from different types of potential users. As the participants' first impressions were examined, it was important that the user had never seen or heard about Vibee before.

One pilot test was conducted to make sure all technical tools worked as planned and that the participant understood everything. Some refinements were made in the prototype's interactions and in the formulation of a few interview questions.

The recruited people then participated one by one, with one facilitator present that started with describing that the participant will go through an Employee Engagement application called Vibee. The participant was informed that Vibee is an application that will be used by employees at companies. They did not get more information about the application as it could affect their intuitive experience if they knew too much about what to expect. In order to gain as much valuable feedback as possible and open up for them daring to share critique, the participants were informed that we had not been involved in the earlier design process.

Each participant signed an informed consent form (Appendix B) stating how data will be collected and used in the project. Through the consent form, participants were also informed that their participation was completely voluntary, and that they had the right to withdraw at any time, as well as request to have all their information deleted. After this, the participant was asked nine pre-questions (Appendix C) with the purpose of evaluating if, and how well, the participant's characteristics matched the characteristics of a potential user. This part included short introducing questions, such as age, gender and occupation. It also included more thorough questions, e.g., if they have used an Employee Engagement application before and if they use any phone applications related to their workplace or school in their daily life.

To begin, the participant got information about what the Think-aloud (TA) method is, what the goal with it was, and what was expected from them. It was emphasized

that it is the design that was being evaluated and not the participants. The facilitator clarified that no questions regarding the prototype of Vibee would be answered during the test. A short video of how a person conducts a TA [23] was shown to the participants to give examples on how to talk out loud.

Some people find it awkward and embarrassing to think out loud, and sometimes forget to do so when tasks get more difficult [53], and it was therefore decided to start with a warm up practice before showing Vibee to the participants. During the practice, the participants got three tasks (Appendix D) to perform using the application Tradera. This was also an opportunity for the facilitator to practice interfering with prompt questions, e.g., “Why did you press there?” or “what did you expect when pressing that button?”. No notes were taken during this practice, and there were no sound- or screen recording.

After the warm up practice, the participants were given a scenario that they are working at a company and have been asked to download a new Employee Engagement application called Vibee. All pages that included a username in the prototype were changed to the name of the participant before each Think-aloud to make the user situation a bit more realistic. They were thereafter given the open task to start exploring the Vibee application and all its features on their own. The goal was to have them interact with the app as freely as possible in order to gain insights on their intuitive actions and what their attention was drawn to at first sight. Furthermore, this could provide an understanding on how they experience the application as a whole and where potential problems may occur. If any feature or page of the application was not interacted with, the participant was asked to do so by the facilitator.

During the Think-aloud (TA), comments and facial expressions were noted down by the facilitator. To reduce the risk of missing any important comments or interactions within the app, a screen- and audio recording was running throughout the TA.

The interviews included 13 questions (Appendix E) and the facilitators took notes during the interview. The first questions were formulated in a way to examine the participants’ first impression and interpretation of the design, ease of use, if they see the value of the design and their overall experience as well as input for how to improve the app features. Secondly, a few questions were asked regarding the specific features to support data from the TA. The interview ended with a question of how likely it would be that they would use this kind of application in their work life. All participants had the possibility to interact with the prototype to revisit pages and features during the interview.

The recordings from the TA were transcribed to support the notes that had been taken on facial expressions, comments and actions, to make sure a full picture was formed on how the user had experienced the app.

7.3 Define

The Define phase was used to analyze data gathered in the Think-aloud and interviews in order to formulate clear and actionable problems. Here, the focus was to write down the problem areas in short statements that could act as a ground for later idea generation in the Ideate phase.

7.3.1 Analyzing gathered data

Using a collaboration whiteboard in the software called Miro, all of the notes from each separate participant were transferred into separate sticky notes, color coded according to participants in order to facilitate finding patterns when creating the affinity diagram.

The affinity diagram for the TA-protocol was created through a mix between a top-down and a bottom-up approach. Data was first grouped according to each of the parts interacted with in the application as well as each question from the interviews. Later the participants' interaction and/or comments were grouped together based on similarity between participants.

Analysis of the TA-protocol showed that the onboarding information was not enough for the participants to understand and/or remember the information in it. This conclusion was drawn as the participants uttered that they did not understand some of the words, e.g., Vibes and Honeypoints. One even uttered that they often completely skip the onboarding part.

The majority of participants started with completing a Vibe and some participants mentioned this page as valuable since it makes it possible for the HR department to receive feedback on their employees well-being. It was also mentioned that it can be used as a self reflection on one's well-being. Another plus was that it is not so difficult or time consuming to complete since there are only three questions in each Vibe. However, the interactions on the answering options were not intuitive since most participants needed to try different interactions on some of the questions before getting it right. A few also mentioned in the interview that the answering options in the Vibe questions did not fit for how they intuitively would have wanted to answer the questions. For example, two people commented that one question only had a yes or no answer where they saw a need for an option somewhere in between, or even a possibility to mark their answer on a scale instead.

When asking the participants what they thought they were supposed to do with the app and how often, the answers differed a lot as they stated everything from once a day to once a month. One quote that pretty much sums it up is "It depends on *how much* you are supposed to do", which indicates that the maximum amount of time and effort the user can put into using the application was rather unclear. Confusion also arose regarding *what* they were supposed to do with the application.

The majority of the participants found it rather diffuse whether the survey was anonymous or not. When asking them "What do you think happens with your Vibe answers after submitting?" four out of six answered that they thought that a boss or someone from the HR department would be able to see specific answers in a non-anonymous way. Data from the TA protocol also support this as one of the participants there uttered "You can both go back and skip a question, I like that. If it is something you do not want to answer. I might not want someone to see the answer to this specific question for example."

Regarding the Notifications page, the participants navigated here when looking for their inbox, or when they noticed the bell icon. They all described their intuitive understanding of this tab to be about, e.g, app updates, rewards and other app related notifications. None of them anticipated that this was a place to get updates about the data trends connected to the personal Analytics page. And another problem here is that they all found the information provided rather confusing. The interactions here, however, were understood.

Most of the participants had a positive attitude to the Missions page. However, some of the participants found the amount of missions a bit stressful. Confusion occurred among all participants regarding the blue Done (Klar) button at the end of the text when reading about a specific mission. One of them thought that the button was meant to be interacted with when they were done reading about the mission and wanted to go back to the overview. The other five participants said that it was unclear if they should press the button when they wanted to accept a mission or when they had actually completed it. Overall, the Missions page was confusing for all participants but in different ways. Other problems occurring on this page was that some got stuck while reading more about a challenge or wrongly interpreting a completed mission as closed.

When asking them what they thought was the most valuable feature in the application, there were split opinions. The majority of participants mentioned missions being the most valuable feature as it seemed fun, and made it possible to be social with colleagues. However, when asking the participants what they would want to change in the application it was mentioned that the Missions in the application only provide the user with information but no helping tools to actually complete the mission. For example, some participants would want the application to provide an easy way to reach out to colleagues when completing social missions.

Three out of six participants found the information in the Achievements tab stressful and unstructured, and the interactions confusing. One said it was stressful due to the list of too many different ways the user could receive Honeypoints, and two that the gamification aspect of it could turn into being too time consuming. It was mentioned that this could make the users spend unnecessary time on this application during work hours. Three participants tried to interact with different parts of the non-clickable list of achievements to receive more information, and they explained that the current design did not provide them with enough information in order to

make sense of the data.

The majority of the participants had a positive attitude toward the Rewards page, and the overall understanding of both information and interactions was high. One of the participants also mentioned rewards as one of the most valuable parts in the application and was a motivator of using the application, and that the application would not work without it. There was however still some confusion regarding the Honeypoint system. One asked what they have to do in order to gain more Honey-points, even though having interacted with the Vibe-, Missions- and Achievements pages prior to reading about Rewards.

The participants were asked about their intuitive understanding of the relative Honeypoint amount for the Vibes and different Missions. Three of them assumed that the more points something had, the more valuable and prioritized it was to do that specific Vibe or mission. However the other three participants' initial thought was that the different points were divided depending on the time and effort it would take to complete a certain thing.

The Analytics tab was where most confusion arose both regarding personal - and company analytics. Participants expressed things during the Think-aloud that made them seem overwhelmed and confused by the amount and complexity of information, e.g., regarding the graph. One said that the graph would make more sense and become more valuable if it was possible to compare categories. Most of the participants tried to interact with parts of the interface which was not interactive, wanting to find more information. The text presented in the expandable sections was experienced as unclear and confusing for most of the participants where some for example did not understand if the personal analytics actually applied to the individual employee or company.

The Employee Satisfaction Index (ESI) (Nöjd Medarbetar Index (NMI)) was confusing for all participants. Either regarding the meaning of ESI, abbreviation of ESI or how the different ESI values were generated. In addition, a few stated during the Think-aloud that they did not understand the difference between ESI-values and Honeypoints.

All participants mentioned that they had neither used or heard of this kind of application before, which ensures that they were completely new to applications for Employee Engagement. However, after interacting with the prototype, their understanding of what an EES is had increased.

Even though the participants expressed positive attitudes towards specific features in the application, all participants also uttered different levels of skepticism towards using this application. Some participants were skeptical since they either believe they could talk about their work related well-being and satisfaction with their management directly, or that they do not want to learn a new application, or lastly that they need the functions in this app to be easily integrated with other applications

or softwares in order for it to be a higher likeliness of using it. One participant said “I would not want to use this app without getting an explanation on how it is supposed to be used and why I should do this”. Other participants were more open to use this application but said that it depended on both app-related and external circumstances. External factors mentioned were e.g., that it depended on their workplace, how many colleagues that would use the application. App related factors had to do with for example what kind of missions that would be provided and the reluctance to the gamification aspect where some mentioned the importance of a balance between fun and too childish or unserious.

It was clear after conducting TA and interviews that app related improvements needed to be done to increase ease of use but also that non-app related factors had an impact on their attitude towards the application.

7.3.1.1 Outcome

The analysis of the TA and interviews can be summarized into the problems presented in the list below.

- Users don't find enough information about how the features in the app work
- Users don't find enough information about how the app has value for them personally
- Users don't find enough information about how much time and/or effort is needed from them to use the app
- Users don't find enough information about whether answers on Vibes are anonymous or not
- There are confusing answering options on the Vibe questions
- The Done button on the missions was interpreted in a different way than intended
- The badges on the Achievement page looked clickable
- The positive vs negative trend looked clickable on the Analytics page
- There are no tools or guidance to facilitate completing missions
- Complex or too much information on the Notifications page - no clear understanding of the information presented as well as why analytics data was presented here.
- Complex or too much information on the Achievements tab - no easy overview of where points came from
- Complex or too much information on the Analytics page - no easy overview to form understanding of data analysis

7.3.1.2 Defining a focus

To define what problems to focus on later in the process four out of the twelve problems were removed due to reasons explained below.

The problem regarding answering options of Vibes was already being handled by other people at the company. Together with people studying human resources they are looking into how the answering options will be formed, hence we scratched this specific problem from our list. Problems regarding non-clickable elements would most likely automatically be improved while aiming to solve problems concerning the whole Analytics- and Achievements pages. The problem regarding the information on the Notifications page should not affect the ease of use aspect too much. It was more a problem of formulating the information provided in an understandable way. Therefore, this problem was deprioritized. This left us with eight remaining problems, and before moving into the Ideate phase, the eight problems were reformulated into How might we (HMW) questions stated below. This was done to make the problems phrased in a way to spark ideas instead of focusing on them being problems.

How might we...

1. through the app design inform users about how features in the application work?
2. through the app design inform users about how the application has value for the users?
3. through the app design inform users about how much time and/or effort is needed from them to use the app?
4. through the app design inform users that vibes are anonymous?
5. design less confusing interactions on the Done (Klar) button for missions?
6. provide tools or guidance that facilitate completing missions?
7. visualize achievements (progress for things such as completed Vibes and missions) in an easier way?
8. visualize the users' personal and company analytics (summarized through answers on Vibes) in an easier way?

The plan for the upcoming design phases was to iterate on the design with the aim of solving the defined problems. The user experience starts even before the first interaction with a product [53], *but* the first impressions of interacting with the product for the first time matter a lot [27]. As the application is supposed to engage everyone, including skeptics, the first impressions should preferably not evoke feelings of skepticism. Some of the participants in the Empathize phase did express sceptical attitudes towards the application, so refinements was planned to be done in interactions, formulation of information and pure interface elements that were to be tested in later phases.

7.4 Ideate

The Ideate phase consisted of different brainstorming techniques, conducted both by us individually and in pairs, but also by bringing potential users into the process through a co-design workshop.

7.4.1 Co-design workshop

To gain insight on how the defined problems could be solved from potential users' point of view, a co-design workshop was conducted. This was done to gain potential users' ideas on improvements on *five* of the problems, formulated as How might we (HMW) questions. The main reason for not using all the HMW-questions in the workshop was that it was scheduled to be 75 minutes long, and there would simply not be enough time to go through all of the problems in one session.

Six people in the ages between 26-29 were recruited for the workshop, and they all signed a consent form (Appendix F) before participating. All six were students from the Interaction design master's program at Chalmers University of Technology. This way we could gain other designer's ideas to inspire further development of the user interface. The participants could also be seen as potential users as they with their technical background could be working at an IT consultant company in the future.

The workshop was divided into two main parts, the first one being a group brainstorm using the method Worst possible idea and the second part consisting of the method called Extreme characters where the participants worked together in pairs to brainstorm from a fictional character's point of view. This division was done with the aim to get insights both from more stereotypical potential users but also to widen the perspectives through characters with extreme character traits.

We acted as facilitators and took turns writing notes and partaking in the ongoing discussion, mainly to answer questions and make sure everyone got to speak. The participants got informed about the project and the project's aim of reducing the risk of user resistance. To provide a fuller understanding of the topic, a brief presentation was held regarding Employee Engagement and Employee Engagement Softwares. The participants were then informed about Vibee and they got to interact with the prototype on smartphones to get a quick overview of the features provided. The application was also gone through quickly by one of the facilitators in order to make sure all features were understood. The participants had access to the interactive prototype throughout the workshop, either on computers or smartphones.

The participants were provided with different tools for communicating ideas and writing thoughts down as they come throughout the whole workshop. The full list of material needed for the workshop is presented in the list below.

- Colorful pens
- Pencils
- Large white papers
- Sticky notes
- Printed images of certain pages from the application
- Printed list of the How Might We-questions
- Printed symbols and progress bars for user interface inspiration, not from the application
- Character descriptions for the extreme character method

- Scissors
- Two smartphones and one computer with the interactive prototype

The first part of the workshop started with all participants brainstorming together on the HMW-questions number 7 and 8 presented in the list below. These were chosen for the group brainstorm as they seemed broader and hence more suitable for an open discussion. The participants were informed about the reasons behind these defined problems, i.e., stress and confusion, to provide a greater context.

How might we...

7. visualize achievements (progress for things such as completed Vibes and Missions) in an easier way?
8. visualize the users' personal and company analytics (summarized through answers on Vibes) in an easier way?

As a warm-up session, to stoke participants' creativity and make them relaxed and comfortable in sharing ideas, these two HMW-questions were first brainstormed through the method Worst possible idea. The participants got four minutes to brainstorm on each question. After coming up with really bad ideas for solving presented issues, they were asked to flip it all around and try to convert the bad ideas to potential solutions instead. For this part, they also got four minutes to brainstorm.

During a discussion around the Achievements tab it was mentioned that users might not want to have an Achievements tab at all, as it could lead to stress among the users. The stress here would, according to them, arise from the fact that this page would make the employee feel that they are being judged on how good of an employee they are, and that they have to level up in order to make the boss satisfied. Other ideas regarding achievements was to have it placed elsewhere in the application, and not on the same page as missions. It was brought up to have it connected to the rewards in order for users to find out what they can do to reach a specific reward. Another idea was to have achievements on some sort of profile page being the first page of the application.

Regarding the Analytics page, all six participants agreed that the personal analytics had too much information on it, which is in line with what was concluded in the Empathize phase. According to the participants, this amount of detailed information could be valuable for the HR department but not for the employees. It was also mentioned that the page was presented in a rather negative manner due to all the categories that had what is called a negative trend. They said that a consequence of this could be that the employees start being less honest when answering vibes. If the individual page would stay, it should have less details or have it possible for users to filter what they want to see. The company page was mentioned to be a nice page to have as it provides a way for the user to see if the rest of the company are thinking the same as oneself regarding different things about the workplace.

The second part of the workshop consisted of the Extreme characters method where the six participants were divided into three pairs. Each pair was assigned one extreme character that they could read about in character descriptions (Appendix G) that were handed out so they could jump into the role of their character. The three chosen characters were taken from Spongebob Squarepants: Spongebob Squarepants himself, Patrick Star and Squidward Tentacles. They were chosen as they are very different from each other; one very curious and positive, one rather indifferent and unintelligent and one extremely skeptical and pessimistic.

In this part of the workshop, the participants brainstormed on the HMW-questions 4, 5 and 6, presented in the list below. They got fifteen minutes in total to brainstorm improvements on the three questions, and were reminded to think out of their character's perspective.

How might we...

4. through the app design inform users that vibes are anonymous?
5. design less confusing interactions on the Done button for missions?
6. provide tools or guidance that facilitate completing missions?

From these three questions regarding more specific parts of the application, the participants sketched down a variety of great ideas on how to solve these problems. Additional ideas and concerns that were raised during the workshop was that all six participants, just as the ones from previous user studies, mentioned that it was not clear *when* or *how much* you are supposed to use the application.

The ideas generated during the co-design workshop was planned to be used as inspiration when moving forward with the Ideate phase.

7.4.2 Brainstorming

The idea generation after the co-design workshop was done using different kinds of brainstorming methods. It started with creating a mindmap on all eight problems, brainstorming ideas on each of the problems in silence. The center of the mind map consisted of all eight problems written down in small colorful circles. With two minutes spent to ideate on each problem; ideas were written down and placed in the mindmap connected to the specific problem. All of these ideas were thereafter discussed with each other.

After the silent brainstorm, the Crazy 8's method was conducted where sketches was done individually to narrow down on a few visual elements that can be implemented into the design in order to reach a solution to the two problems: number 3; *How might we through the app design inform users about how much time and/or effort is needed from them to use the app?* and number 5; *How might we design less confusing interactions on the Done button for missions?* These problems were chosen for this method as they were at a reasonable level of complexity to ideate on specific visual elements to solve them. The other problems were either too complex

or too small for this method to be suitable. When having generated 16 sketches for each problem, we presented our ideas to each other. Lastly, a dot voting was done where we got three dots to place on our favorites for each problem.

Outcomes from the Crazy 8's and dot voting were a few ideas chosen to iterate further on. To increase the understanding of how much time and/or effort is needed from a user, one idea was to add elements such as a small text and/or icons indicating how much time it takes to complete a Vibe, and this time indication could be implemented for the missions' completion time as well. A second idea was to present the user with an upcoming Vibe and how many days are left before it is available. One idea for the onboarding was to include a short statement indicating how much time the features of the application will take, e.g. a text such as *Two short pulse surveys each month*, to get a first impression and general idea on how much time the app requires from the user. Lastly, an idea was to work with encouragements in several ways, either by graphical elements such as progress bars or streaks, or small notifications telling the user that a sufficient time is spent on the application, to reduce the risk of users' feeling stressed about not knowing what is expected from them.

Regarding the Done (Klar) button, one solution for this, as a first idea to test, is to simply rephrase the text on the button to Completed (Utfört) to signal that users should press it when they have conducted a mission and not press it when they are done reading about it. This will hopefully minimize confusion.

7.4.3 Finding inspiration

Before continuing ideating through sketching wireframes, it was decided to take inspiration from other applications' interfaces. Different types of UI elements were browsed to get inspiration on e.g., how a progress bar could look like, how a home screen usually is designed, what icons can be used to visualize different functions. Interfaces of other applications were found by Googling or browsing on Pinterest.

From the inspiration found, some small decisions were made on what should be included for the different parts in the Vibee application, e.g., using a circular progress bar instead of linear progress bars on the Analytics page.

7.4.4 Sketching wireframes

Wireframes were sketched to ideate on how the mockups would look like. More defined decisions on the design was made in this sketching session. Instead of having a Vibee page as the first page, a Home page was sketched (Figure 7.1a). On this Home page, the Vibes would still be in focus since user studies showed that this made people interact with the Vibes first. The Vibes was designed as cards where the user can swipe between active (aktiv) and the upcoming (kommande) Vibes (Figure 7.1b and c). On these cards, the user get information about the Vibe's name, e.g. *April Vibe*, how many days that are left to answer, how many ques-

tions it contains, estimated time to complete it and how many Honeypoints that are received for answering the Vibe. The text *Anonymously* (Anonymt) together with a question mark was provided under the Vibes cards. When interacting with this icon, a short text explaining how the Vibes are anonymous is planned to appear. After completing a Vibe, users will get visual feedback on the amount of earned Honeypoints. The completed Vibe will disappear from the page, only showing the upcoming Vibe. For upcoming Vibes, the box will be grayed out to indicate that it is not yet active. The same information is shown for the upcoming Vibes as for the active, with the slight difference that the user here instead will see how many days that are left before the Vibe is active. This gives the user information on how often they are supposed to answer a Vibe - which was found to be unclear in the existing design.

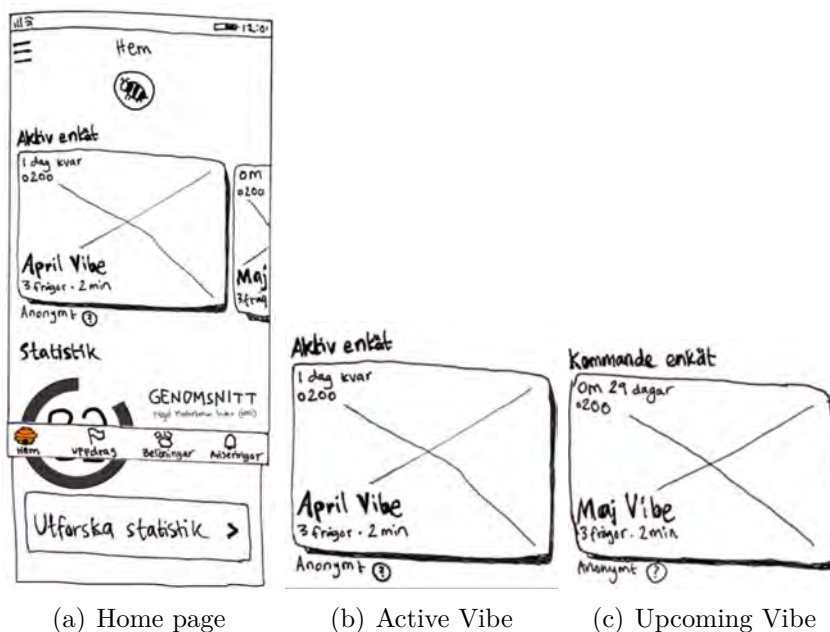


Figure 7.1: Home page - Overview of Vibes

The Analytics page was sketched to be reached from the Home page instead of the navigation bar (Figure 7.2). Here the participants will be presented with their personal average ESI in a circular progress bar. Under this, there will be a button where the user can explore more details on their statistics (Utforska statistik). This gives the users a possibility to choose if they want more detailed information on the analytics or if an average ESI-value is enough. Since the Analytics page was one of the bigger problems when it came to too much and too complex information, this page was designed quite differently from the original (Figure 7.3). On the Analytics page, a personal and a company tab was still provided, with the personal tab presented first. By expanding the top section of this page, where the user's ESI-value is shown, the user will be provided with information on what ESI is and what it is based on. An addition made from the original prototype is that this section would now also include an explanation of the seven categories. The explanation of the categories, earlier shown in expandable sections below each single category, will be

shortened to prevent information overload.

Below the average ESI, the ESI-values of the seven categories will be presented in descending order, together with circular progress bars. When scrolling down, the users will be presented with a graph (similar to the one that exists in Vibee today) showing the ESI for categories over time. However, from previous user studies it was mentioned that the user could not make sense of this graph and that it would be more worthwhile to have a graph for each category. This graph will still show all categories as a default, however users will be able to filter this graph and choose specific categories. This way the users can e.g., compare two different categories over time.



Figure 7.2: Overview of analytics shown on Home page

The company tab in the Analytics page will look similar to the personal tab with the only difference being that the explanation of ESI-values for the categories instead is explained as an average of answers from all employees using Vibee.

The Missions page (Figure 7.4) will look similar to the original Vibee prototype with a few adjustments. The overview page will still be a list of cards where active missions come first and upcoming missions come after. However, the upcoming ones will be grayed out to minimize the risk of users being overwhelmed with a feeling that there are a lot of things to do. The user will see how long time is left and how many Honeypoints that will be received when completing a mission both on the overview page and when selecting one to read more. A few ideas were generated to provide help tools for completing a mission. For the mission regarding attending a lecture, a link will be provided that should navigate the user to a sign-up form. For the mission where the user is encouraged to take a coffee with a colleague; a link will be added to renavigate them to the intranet where colleagues' contact information can be found. For all missions, a calendar button will be included to provide a function to add missions into the calendar. The Done (Klar) button will be changed

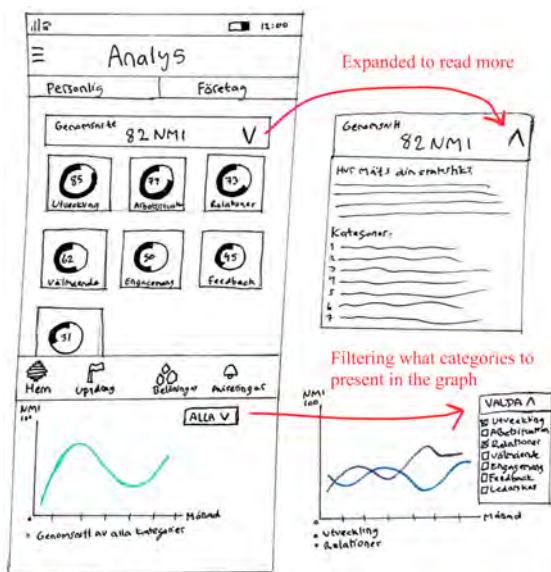


Figure 7.3: Analytics page

to Completed (Utfört). This is to make it less confusing what will happen when interacting with the button. Some participants from previous user studies mentioned that the mission status could have two stages; one to accept and one to complete a mission, in order to get a sorting function among all missions. An alternative to this was created: a heart icon that makes it possible for users to mark a mission as a favorite. If a user marks a mission as a favorite, a heart icon will appear both in the overview of missions so that it is easier to find among all other missions. The upcoming missions will be grayed out and not possible to interact with.

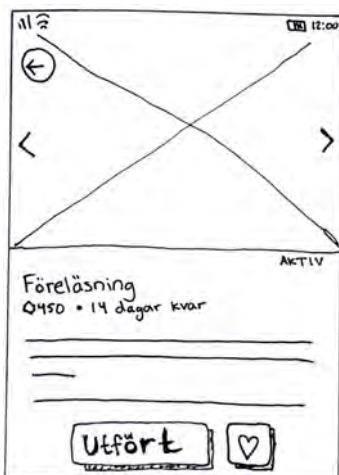


Figure 7.4: Missions page

The achievement page was mostly mentioned as confusing and stressful from the user studies and was therefore decided to be removed as it did not seem to give a

clear purpose in this application.

Lastly the Notifications page will be on the navigation bar, making it more visible than it was on the Vibe page in the original Vibee prototype. The Notifications page will look more or less the same, however, there will be no information on the users strongest positive and negative trend since this seems unnecessary and will be viewed on the Analytics page. Another thing that will be changed on this page is to make the language less complex for users to understand. The Swedish word Notifikationer will be changed to Aviseringar (synonyms of the word Notifications in English) since this was found to be the most used word in other applications using similar functions, when finding inspiration for the sketches. Also to reduce the risk of users thinking this is where to find settings for turning notifications on or off.

After creating the wireframes, this was shown to the founders of Vibee to receive feedback which was taken into account when developing mockups in the Prototyping phase.

7.5 Prototype

The Prototyping phase started with creating mockups using Adobe XD. After this, the new design were implemented into the already interactive high-fidelity prototype of Vibee. Therefore there was no need to prototype all the interactions, except on a few parts where design changes were done. The design was evaluated by potential users through a questionnaire to find out if the solutions are enough to solve the defined problems.

7.5.1 Mockups

With the previously made wireframes as inspiration, the ideas were now remade into higher fidelity. The graphical style used in Vibee today was not a part of the found problems, and therefore, it was decided to not iterate on the design language. To keep the design coherent, ideas for new graphical elements, e.g., buttons and illustrations, were designed with an aim to fit the existing design language. Creating the mockups in Adobe XD provided us with a quick and convenient way to test and refine the design along the creation process, e.g., presenting the mockups on a smartphone screen, and interact with it ourselves, in order to see if elements in the new design were within reach of a potential user's hand.

Furthermore, it was noticed on the Analytics page that having the category explanations in the expandable section where the user could read about ESI made the text too long. This could lead to fatigue and thereby a risk of users not reading all the information provided. It was therefore decided to make the seven category boxes into interactive cards and put the explanation backside of each category. This way the user can click on a category to flip the card to read more about that specific category.

An important thing when creating the mockups was to carefully think about the tone in the application. As people have previously mentioned different parts of Vibee as stressful, wordings in the original prototype were questioned. One idea was to change the word Missions (Uppdrag) to Challenges (Utmaningar) since we perceived it as having a less negative tone, and it feels more voluntary to complete. This was quickly tested by asking friends where they all preferred the word Utmaningar. These people mentioned that if changing to the word Challenges, then the Completed button should be changed to a synonymous, but in Swedish more fitting word; from *Utfört* to *Avklarad*.

When completing the mockups three UX designers from ESSIQ were asked to take a look at our refined prototype to receive feedback on some of the specific parts in the design.

7.5.2 Online questionnaire

An online questionnaire (Appendix I) was conducted to evaluate the iterated design by collecting a mix between both quantitative and qualitative data from potential users. For the online questionnaire, the rating system Likert scale was used for most of the questions with some follow up questions where the respondents could elaborate on their answers with either a few words or a short paragraph of text. The reason for why mostly closed-ended questions was chosen were because we for this questionnaire wanted to get a high response rate, and therefore needed to create a questionnaire that did not take too long time to answer.

For this questionnaire, the mockups were created into an interactive prototype to be able to take short video clips through screen recording on Adobe XD that were converted to GIFs on each feature of the application.

The questionnaire was divided into seven parts, first a part with two pre-questions regarding the participants age and occupation and then five parts related to most of the features in Vibee. A short GIF was shown on each of the five parts where questions regarding the features in Vibee were asked. One of these parts was related to the Rewards, not to receive data on that question, but to make sure the participants had seen all of the application before answering the closing questions. In the closing part where the participant evaluated if they can see how Vibee has a value for employees, as well as if they would want to use this type of application in their workplace/future workplace.

Before sending out the questionnaire, two pilot tests were conducted to make sure that there were no obvious problems with the questions or the GIFs. The pilot tests was also conducted to get an estimated time of completing the questionnaire which resulted in approximately 5 minutes. Small changes were made in the questions and GIFs after these tests, and then the questionnaire was sent out to friends and families, as well as groups on Facebook and Slack to reach out to as many people as possible. Since the application is in Swedish, the questionnaire was also written

in Swedish.

7.5.2.1 Analysis of questionnaire

The data from the online questionnaire was analyzed through an affinity diagram with the use of Miro sticky notes, taking a bottom up approach where answers were divided into different groups according to similarity. This way we could get a better overview of the data, and valuable insights regarding the opinions about our presented design. Each question was analyzed one by one.

We ended up getting data from 66 participants, where a majority of 83.3% were between 20-29 years old. There was a good mix between workers (44%) and students (56%), where all of them were considered to be potential users.

For the questions regarding the different parts of Vibee, we could see that a majority of 90.9% found the onboarding to be *Clear* or *Very clear*, and 69.7% was *Motivated* or *Very motivated* by seeing their Vibe-streak. However, there was still some ambiguity regarding the anonymity of the Vibes, where only 47% thought that that information was *Clear* or *Very clear*. There were somewhat split opinions on how often they thought they needed to answer a Vibe where a majority of 53% answered once a month. However, this is most likely due to a mistake in the design where the Vibes were named *April Vibe* and *May Vibe* and the number of days left of the active Vibe did not match the number of days for the upcoming Vibe to become active. The Vibe streak did also seem to confuse some of the participants where a few commented that Vibes would be answered once a day since streaks are often used in applications where the user is supposed to use the app everyday.

The Challenge page seemed to be clear for the majority of the participants, both the information when the upcoming challenges gets active where 87.9% thought this information to be *Clear* or *Very clear*. 97% of the participants understood what would happen when interacting with the Completed (Avklarad) button. Some of them said that they will get points (Honeypoints), some that the specific challenge disappears, and some that it is marked as completed. This indicates that the button may now be more intuitive than the previous Done (Klar).

Regarding the Analytics page, where the respondents were asked to describe their thoughts about the page with a few words, the majority (87%) described it with words such as simple, clear, providing a good overview, structured and smooth.

Some of the respondents' comments were extra important as they in some way signal a risk of devastating the whole idea and core value of the application. One commented that it would be nice to get tips on how one could boost the ESI-value and get points in each category. This indicates that the information provided makes the participant misinterpret the meaning of ESI, believing that it is some sort of earned points rather than a summarized value being a result of the answers in Vibes. Another good point regarding the Analytics page was that being able to compare one's own statistics with the company statistics could be both positive and nega-

tive. Four respondents commented that, due to the circular progress bars for the ESI-value, there could be a risk of users answering Vibes untruthfully in order to keep a high value in the different categories. One respondent noted that having the average ESI-value presented on the first page in the app together with a big colorful progress bar could be unwanted as it then could be accidentally visible to colleagues when answering Vibes at the workplace. Three respondents seemed a bit confused regarding the whole idea of an Analytics page, stating questions such as “Why would I want to track this?” or “I don’t see why this is relevant”. Three respondents gave feedback on pure interface design and usability and said that the division into different categories was confusing/exhausting at first sight.

Regarding the statement where they could rate to what extent they agree that the application has a value for employees at a company 39% of the respondents answered that they *Agree*, 35% *Strongly agreed*, 20% answered *Neither agreed or Disagreed* and 6% *Disagreed*. None answered that they strongly disagreed.

As mentioned, the overall impressions leaned toward the more positive. However, even though there were only a few people who expressed concerns with the design or the whole idea of Vibe, these comments need to be taken into consideration for future improvements as they are of such strong interest when aiming to minimize skepticism.

7.5.3 Refinements in prototype

From the outcome of the questionnaire analysis, some refinements were done in the prototype. To make it even more clear that a Vibe is anonymous the same text with a question mark icon of the Home page will be added to each separate Vibe question. Some elements on the Vibe questions needed to be moved around to make place for this.

The names of the Vibes were changed to have the active Vibe called *April Vibe 2* and the upcoming Vibe called *May Vibe 1*. This was to indicate that it had already been one Vibe active earlier in April. The days on the different Vibes were changed to match in order for the upcoming Vibe to become active the same day the active Vibe expired.

The explanation of the Analytics page that a high ESI-value is positive and a low ESI-value is negative was removed. This was done to hopefully decrease negative attitudes to a low ESI-number. To clarify even more that the Analytics page had to do with how the employee felt about the company and not the other way around, the onboarding information on the Analytics page was reformulated. Since the need of having the possibility to go back and forth on the pages in the onboarding had been mentioned in earlier phases, a *Previously* and *Next* button was added for each screen.

Another part noticed that was not tested in the questionnaire, was that the Notifications page showed a negative trend in Well-being, while this category on the Analytics page has a quite high ESI-value. The negative trend was therefore changed

to the category Leadership that has the lowest ESI-value. Some of the information provided on this page was reformulated as it had been commented as confusing. For example, it was explained that PA is the employee's manager (Personalansvarige).

7.6 Test

A summative evaluation on the new iterations of the design was conducted through a Think-aloud (TA) together with Semi-structured interviews. This was done to bring in potential users to evaluate the design to gain an indication if the solutions were enough to solve the defined problems.

7.6.1 Think-Aloud and interviews

The TA protocol and Semi-structured interviews were conducted in the same way as in the Empathize phase. Six participants were recruited through convenience sampling, both students and workers with the ages between 23-32, who had not heard of Vibee before. During the Think-aloud and semi structured interviews, we acted as facilitators where one facilitator was present for each participant.

To get an outside perspective a pilot test was conducted to make sure that everything worked as it should and that all questions were understandable. The time for a complete session was again concluded to be around one hour.

The participants filled in the same informed consent form (Appendix B), and were asked the same pre-questions (Appendix C) as in the previous TA and interviews in the Empathize phase. They were then given a scenario that they are working on a company and are asked to download an Employee Engagement application called Vibee. The main task was the same as in the Empathize phase (Appendix D), i.e., having them interact with the application as freely as possible to gain insights about their intuitive understanding of the specific features but also the application and its value as a whole. One small difference compared to last time was that we decided to not take as detailed notes of what the participants were saying during the Think-aloud since it took too long to do this. Instead we focused on the participants facial expressions and where exactly the participants were interacting. This way we could be more focused on the participant and be ready to ask follow up questions. What participants uttered during the Think-aloud was instead transcribed from the screen recordings after.

As a complement to the Think-aloud, the participants got 15 questions to answer in an interview regarding their first impression and interpretation of the design, ease of use, overall thoughts of the concept and features. The focus was to gain an indication on if the solutions could be enough to solve or improve the defined problems, therefore some questions was reformulated from the previous interview (Appendix H). All participants had the possibility to interact with the prototype to revisit pages and features during the interview.

7.6.1.1 Analyzing gathered data

The data from the TA protocol and Semi-structured interviews was analyzed in an affinity diagram in order to gain an indication if the solutions were enough to solve the defined problems. The analysis was conducted in the same way as in the Define phase.

The screen recordings from the TA were looked through to transcribe what was said to support the notes that were taken and to get a full picture of how the user experienced the application. Later these notes as well as answers from the interview questions were transferred into color coded sticky notes on Miro for each part of the design and each of the questions in the interview. The different colors on the sticky notes represented each participant. Later, a bottom-up approach was used to group together the participants' interactions and/or comments based on similarity.

All six participants commented that the onboarding was straightforward, and all of them got the idea of the app being an app with a high focus on surveys. However, one of the participants made a concerning comment about being skeptical toward this kind of data collecting application.

The first thing they interacted with on the Home page was the Vibe cards, and all of them understood that it was anonymous to answer the Vibes. All of them also read about the information on in what way Vibes are anonymous and commented that it was good that the application informed users about this so that it would feel more comfortable to answer truthfully. The *April Vibe* questions were not changed much from the original version. As expected, the participants' impression of this section was pretty much the same as in the Empathize phase. The only thing actually *added* to the questions was the anonymity text in the top right corner next to the question mark icon. Two of the participants uttered that it is good to remind the user of this as they answer the Vibe. There was however still confusion regarding how often a Vibe should be answered where most of the participants said once a month.

Some were indifferent toward the expandable part with information about Vibe streak and Honey points, and some were positive. According to the majority of the participants, the Vibe streak would not have an affect on their motivation to keep answering Vibes. Two participants mentioned that it could impact their motivation positively if they got something out of maintaining the streak., e.g. Honey points or rewards. Some also said that the low effect on motivation could have to do with it not being a daily streak but a number that would increase only every other week. One thing mentioned by two of the participants was the fact that this section of the Home page was a bit hidden and could instead be open at all times or at least have a visible hint that it can be opened during the first interaction with the application.

They all noticed the Analytics section on the Home page where all participants understood what ESI was short for, and were intrigued to read more. One mentioned that it was not optimal to have the average ESI-value with a big circular progress bar on the Home page. This would make the participant feel less comfortable in

opening the app at the workplace as it would risk showing their average ESI to other employees, reducing the feeling of privacy and anonymity. The same person made a concerning comment that the name Employee Satisfaction Index (ESI) first conveyed a feeling of the employee being rated by the company and not the other way around - and that having a low ESI-value means that you will get fired. However, all other participants understood that the ESI-values were based on how they have answered in Vibes. It was clear for them that the values indicate how satisfied they as an employee are at the workplace.

Five out of six interacted with the clickable category cards on the Analytics page, and all participants interacted with the graph, where one of them had trouble pressing the checkboxes in the drop down menu due to the checkboxes being too small. Three participants were positive toward using the personal Analytics page stating that it would be fun to track. Two mentioned that they would not use it as they already know how they feel or think about things at the workplace and that it would be of more value for the company to overview this type of statistics. However, all of the participants showed positive attitudes toward having the possibility to compare the personal statistics to the company statistics. An important question brought up earlier in the design process was how an employee would feel if the personal statistics had all red meters with low ESI-values while the company page shows that the rest are all satisfied with their worklife. We asked the participants about this, and two said that this might make them question if the job is right for them, and three said that they in that case would expect to be offered help to improve the work situation.

All participants understood the information and interactions on the Notifications page. However one of the participants expressed concerns regarding it not feeling as if they are anonymous when getting a notification on their own negative trend. The comment made was that it seemed easy for the company to track who is feeling negative about something. One idea from a participant was to add an anonymous chat to increase the likelihood of getting in contact with someone about the work situation. Two of the participants mentioned that this feature was good as it actually provided them with a way to take action and try to make the work situation better for themselves but also for other employees. Two participants said that it was a good feature but seemed to forget or not fully understand it as they during the interview commented that they would like to see a helping hand from the company when their values tend to get very low.

Regarding the Challenge page, five out of six participants understood the Completed (Avklarad) button as well as other interactions on this page. The information was also mostly understood with some confusion with a few icons. For example, the lock icon for the upcoming challenges made one of them think it was locked and that they should complete one or more challenges in order to unlock it. Regarding the links and calendar added to the challenges to provide tools to complete them, all of them either commented or interacted with the links. Five out of six interacted with the calendar. However, they expected slightly different things to pop when pressing it. Some expected to overview a calendar, and some expected to be able to add the

challenge into it.

The participants said that they could do challenges all from once a day to once a week. Our impression was that all the participants had quite relaxed thoughts regarding the challenges and that they themselves could choose how often they wanted to complete a challenge. Compared to the original version of this page, the participants mentioned nothing about being stressed or overwhelmed, and instead we got the impression that they were quite positive toward it.

The participants understood most of the Rewards page, however, three of them thought that they somehow could choose between rewards, and one asked if they could earn more Honeypoints and increase their current reward.

The participants had a clear understanding of the purpose of Vibe and its features. All participants stated different reasons for why the application could have a value for an employee at a company. One commented that the value for the single employee could be even clearer, and that it is more clear how it has value for the company. Challenges were seen as the most valuable feature for the majority of participants. The impression was that they viewed this page as a voluntary and fun feature. An idea for improvement from one of the participants was to include an element of being able to see the amount of employees that have conducted a challenge. This would, according to the participant, increase the motivation. Some also mentioned the Analytics- and Vibe pages to be of value. Two participants mentioned that the rewards feature was important for the motivation to use the application. One participant was completely open for trying this type of application, one was positive towards the challenges but not the Vibes due to untrust of being completely anonymous, and the other four were positive towards using it but said that it depended on a few external factors. One said it depended on previous experience with one's manager or boss and another one commented that it depends on number of people using it and that many users will lead to a higher likelihood of anonymity, but also that it becomes a social motivator if the impression is that everyone uses it and discuss the challenges and Vibes at the workplace. Lastly, it had to do with one's role or position. One said that since working as a consultant would mean daily contact with another company than the one you are hired by, a high emphasis should be put on how the Vibes stay relevant for those not working in-house.

Only one of the participants was skeptical toward this kind of application and only saw rewards as a motivation for using it. The participant uttered this skepticism already at the onboarding of the application, with a comment that read: "Should I be completely honest with everything? I think I may be a little skeptical about this way of collecting data".

8

Results

This chapter will present the final iteration of the Vibee prototype that was used in the Test phase.

8.1 The application onboarding

Before entering the Home page of the Vibee, an application onboarding is shown briefly explaining the different features in Vibee; Vibes, Challenges (Utmaningar), Rewards (Belöningar), and Analytics (Analys), in four different screens. This looks pretty much the same as in the original prototype, except for having the size of the text bigger, and adding a Previously (Föregående) and Next (Nästa) button letting users go back to previous screens. The last screen before entering the Home page, the Next button is changed to *Get started* (Kom igång). The formulation of the information for each screen is also changed a bit, providing more information about the features than in the original prototype. The information shown on these screens are; *Vibes - Share your opinions completely anonymously in pulse surveys (Vibes) and earn points (Honeypoints)*. (Figure 8.1a), *Challenges - Complete Challenges and earn Honeypoints*. (Figure 8.1b), *Rewards - By collecting Honeypoints, you unlock Rewards that you can collect or donate*. (Figure 8.1c), and lastly *Analytics - Opinions about your well-being at the company are compiled through responses to Vibes. You can explore the statistics on the Analytics page, which is only available to you*. (Figure 8.1d). The text on the Analytics page was changed to make sure that users understand that the data analysis was compiled through their answers in Vibes.

8.2 The Home page

The Home (Hem) page (Figure 8.2a) is divided into three parts: overview of Vibes and Analytics (Analys) as well as Vibe streak and the amount of Honeypoints earned. The Vibes were kept on the first page to be easily noticed as the developers of Vibee have mentioned this to be the most valuable feature in the application.

A difference from the original prototype is that Vibes are shown as two cards where the user can swipe between active and upcoming Vibe (Figure 8.2 b). On these cards, users are presented with the name of the Vibe, in how many days it will expire, how many Honeypoints they earn when answering the Vibe as well as how many questions it includes. To make it easier for users to know the maximum amount of time

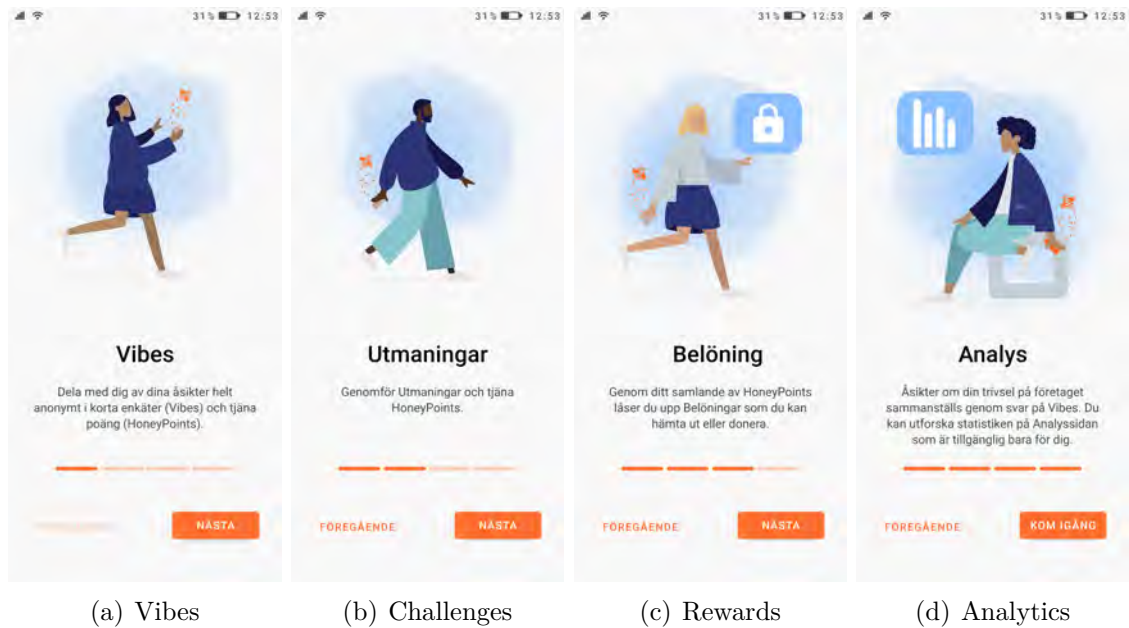


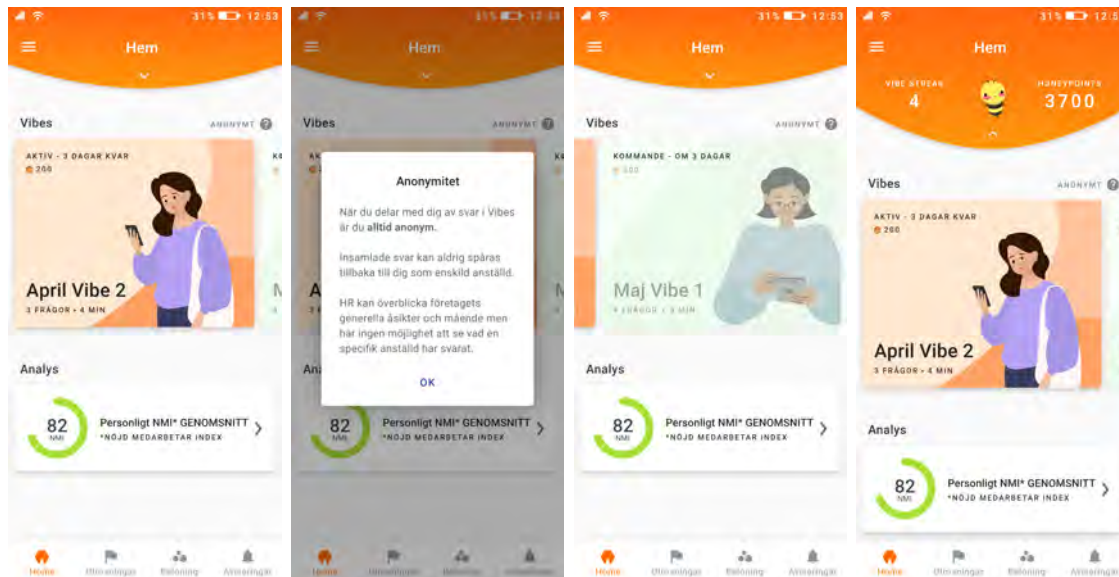
Figure 8.1: The iterated onboarding screens

and effort that they could spend on the application, some information was added to the original design, i.e., whether the Vibe is active or upcoming, how many days are left either to complete it or until the upcoming Vibe becomes active. The cards also have information on how much time it takes to answer. When selecting the active Vibe card on the Home page, the questions for that specific vibe appear. When a Vibe is submitted, the user is brought back to the Home page, getting a pop-up message on the bottom of the screen, showing how many HoneyPoints the user has earned, just as in the original prototype. The active Vibe is also removed, only showing the upcoming Vibe.

Above the Vibe cards is information that the Vibes are anonymous together with a question mark icon. When interacting with this icon, a short text explaining how the Vibes are anonymous appears (Figure 8.2c) stating: *When you share answers in Vibes, you are always anonymous. Collected answers can never be traced back to you as an individual employee. HR can overview the company's general opinions and well-being but has no opportunity to see what a specific employee has answered..*

The Analytics page (Figure 8.2a) is moved from the navigation bar to the Home page under Vibes. This was done to provide an overview of the analytics to decrease the user's feeling of being forced to look at the detailed analytics. The analytics are presented on an interactive button with an overview of the user's personal average ESI-value together with a circular progress bar, and clarifying the abbreviation of ESI, i.e., Employee Satisfaction Index (Nöjd Medarbetar Index). The clarifying of the abbreviation was necessary since participants testing the original prototype uttered confusion over what ESI stands for.

At the top of the Home page the user can drag down an arrow and view their Vibe streak, e.i., how many Vibes they have answered in a row. The user's amount of Honeypoints earned is also shown here (Figure 8.2d).



(a) Home page first view (b) Upcoming Vibe view (c) Text about anonymity (d) Vibe streak and amount of Honey points

Figure 8.2: The Home page

8.3 The Vibe questions

When clicking on the active Vibe on the Home page, the Vibe questions for that specific Vibe appear. These questions are not changed from the original prototype since it was removed from one of the defined problems. An example of a Vibe question shown in Figure 8.3 the user get the statement *I can see a clear career development in my role* where the user can choose to answer Yes (Ja) or No (Nej) by selecting the thumbs down or up. The user can either press the button Next (Nästa) when selecting an answer option or Skip (Hoppa över) the question. One change from the original prototype where that the same anonymous text together with the interactive question mark icon of the Home page was added to each separate Vibe question.

8.4 The Analytics page

From the Home page, the user can enter the Analytics page (Figure 8.4a). A lot has been changed on this page compared to the original prototype. The personal tab is still shown before the company tab. However, instead of having the user's name on the personal tab, this was changed with the word Personal (Personlig) to decrease the feeling of not being anonymous. At the top of the Analytics page the user can

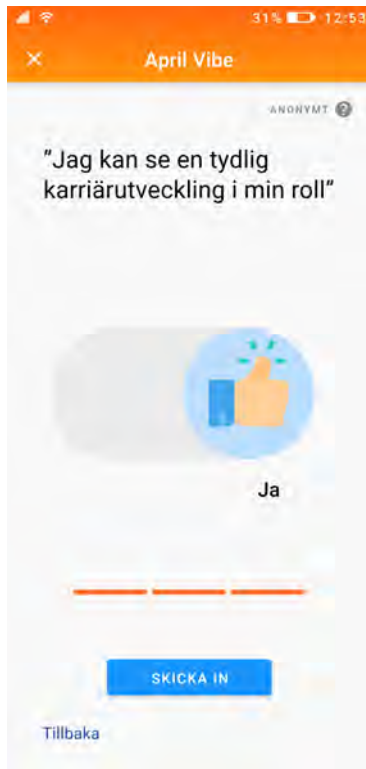
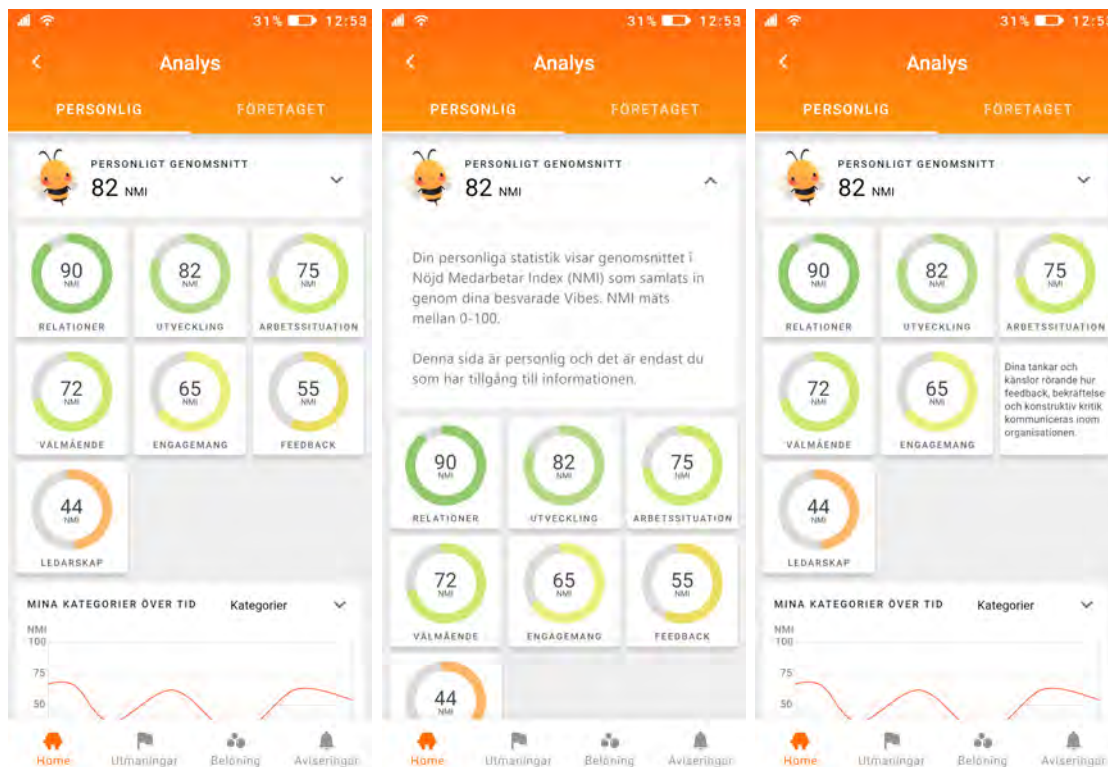


Figure 8.3: Example of an iterated Vibe question

expand a section where this section was changed from being called *Your personal statistics* (Din personliga statistik) to instead showing the user's personal average ESI-value. When expanding this section a text about how ESI-values are collected is explained, stating: *Your personal statistics show the average in the Satisfied Employee Index (ESI) collected through your answered Vibes. ESI is measured between 0-100. This page is personal and only you have access to the information.* (Figure 8.4b). This text is similar to the original text, except for removing some text, for example: *[...] a high number is positive and a low number is negative*, to reduce the risk of users thinking it is bad to have a low ESI.

All seven categories are the same: Relationships (Relationer), Development (Utveckling), Work situation (Arbetsituation), Well-being (Välmående), Engagement (Engagemang), Feedback, and Leadership (Ledarskap). The categories are however shown in different clickable boxes with a circular progress bar instead of linear as this would make all categories fit into the same screen, with the aim of providing a better overview hence making users less overwhelmed. The order of the categories goes from the highest to the lowest ESI-value instead of all categories in a mixed order. There are no icons for the different categories and the negative and positive trend and arrows pointing up or down depending on if the ESI-value has increased or decreased was removed since this did not show any purpose according to potential users. When selecting one of the categories (Figure 8.4c), a descriptive text is shown. This text is much shorter than in the original prototype and explains more clearly that it is the user's thoughts and feelings of how well the company is doing

in the different categories. For example, on the Feedback the text in the original prototype; *The feedback category deals with questions concerning how feedback is communicated within the organization. This includes communication, confirmation, and constructive criticism.* was changed to: *Your thoughts and feelings regarding how feedback, confirmation and constructive criticism are communicated within the organization..*



(a) Overview of Analytics page (b) Information box about ESI (c) Feedback category text

Figure 8.4: The iterated Analytics page - Personal tab

As in the original prototype, the Analytics page has a graph showing ESI for all categories over time (Kategorier över tid) (Figure 8.5a). In this iterated prototype the users also have the possibility to filter between the categories to get a clearer view of each category over time or compare two or more categories with each other (Figure 8.5b and c).

The company tab looks the same as the personal tab, except for the explanation of ESI and the categories where it instead explains that the ESI- values are an average of answers from all employees using Vibee. The figure of the bee shown at the top of the personal statistics is on the company tab a beehive surrounded by a lot of bees.

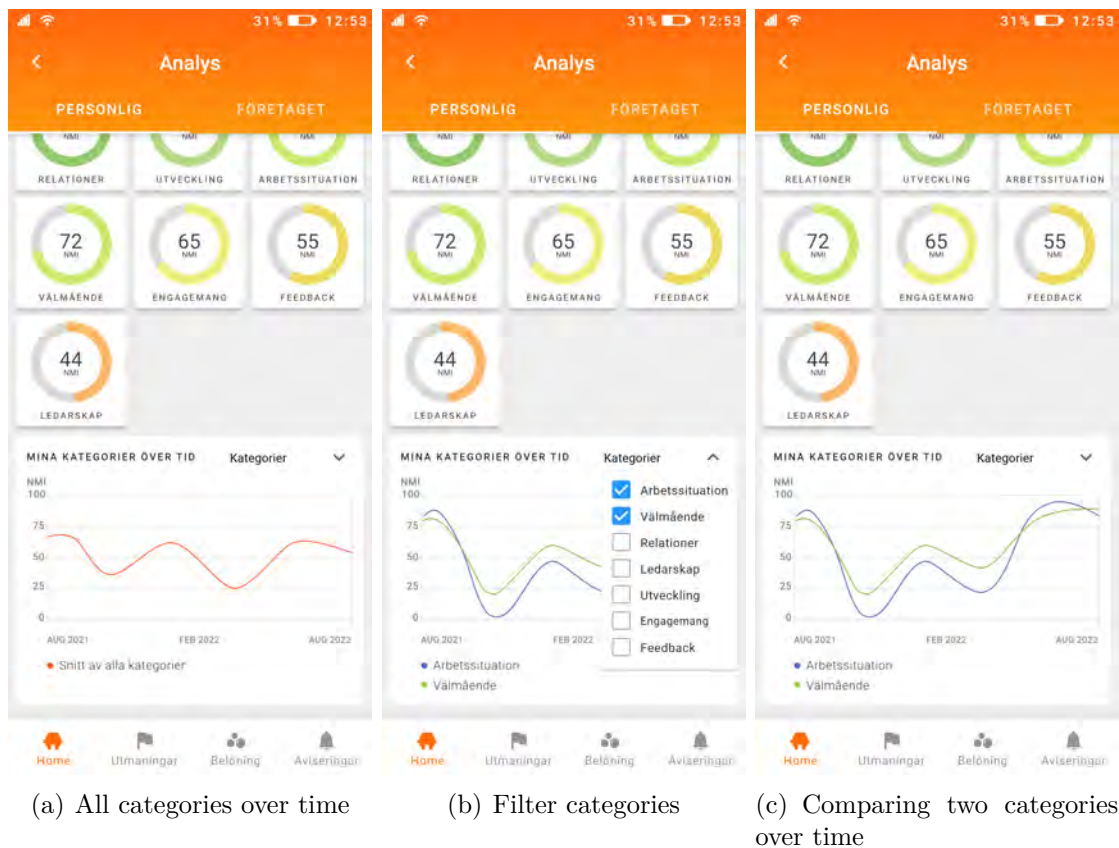


Figure 8.5: The iterated Analytics page - Graph of categories over time

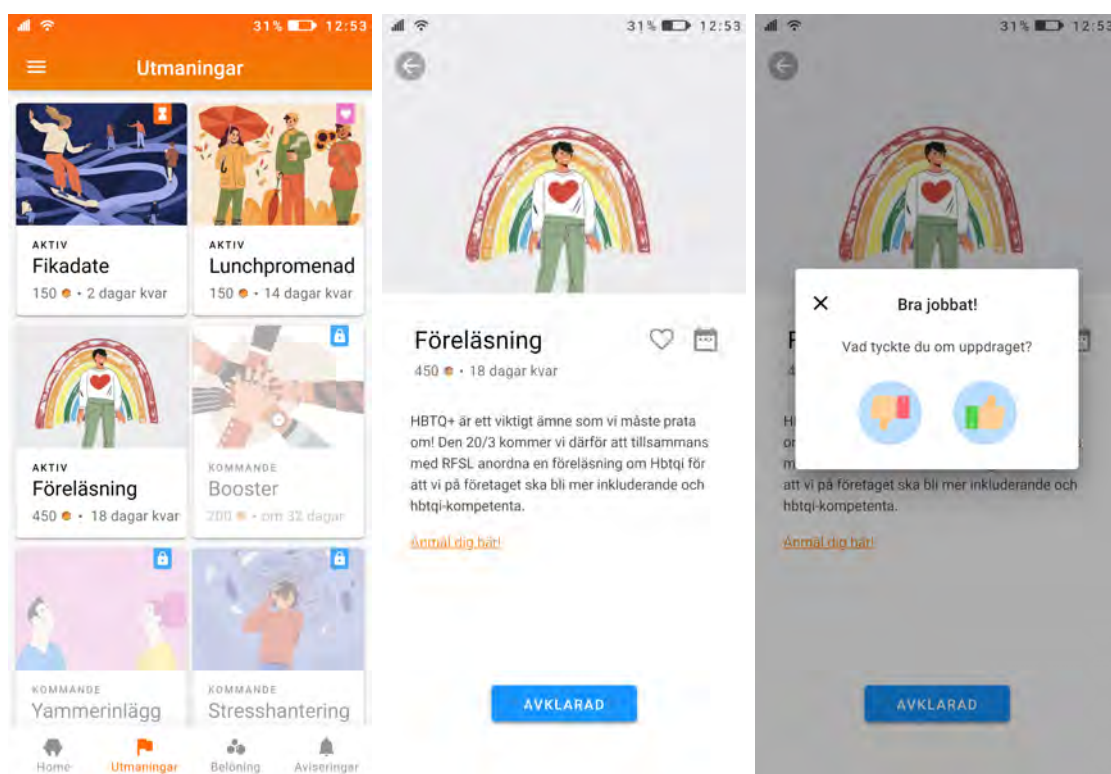
8.5 The Challenges page

The Mission (Uppdrag) page was changed to be called Challenges (Utmaningar). When entering the Challenges page (Figure 8.6a), the user can see an overview over all active and upcoming challenges that are represented by different cards. The challenge cards inform the user about the amount of Honeypoints earned if completing the challenge as well as how many days are left to either complete it or until it becomes active.

To make the whole page less overwhelming and stressful, all of the completed- and one of the active challenges were removed from the overview, and the upcoming ones were designed to be grayed out and not clickable. This way, the user can interact with the three active and only get an overview of the three upcoming ones. The upcoming challenges will still be viewed in the overview to make the user curious over what will come, and get a feeling of how many challenges will be active each month to make it easier for them to get an intuitive understanding about the the maximum amount of time and effort the user can spend on the application.

When selecting an active Challenge (Figure 8.6b), the user will get the information about that challenge, see how many days are left to complete it and how many Honeypoints will be received. In this iterated prototype a favorite function has been

added in the form of a heart icon where the user can mark a challenge they would like to complete as a favorite by tapping the heart. This heart will also be shown on the overview page when a challenge has been marked as a favorite. A calendar icon has also been added to make it easier for users to schedule challenges. A link has been added on some of the Challenges to provide help tools for completing them. For example on the Lecture (Föreläsning) challenge, the user is provided with a link to a registration form. One last change is that the Done (Klar) button is changed to Completed (Avklarad). Similar to the original prototype, a pop-up appears when pressing the Completed button where the user can rate what they thought about the challenge by either pressing a thumbs up or thumbs down button (Figure 8.6c). The completed challenge disappears from the overview and a small pop-up message with the received Honeypoints appears at the bottom of the screen.



(a) Overview of the Challenges page (b) Example of an active challenge (c) Completing a challenge - confirmation message

Figure 8.6: The iterated Challenges page

8.6 The Rewards page

The Rewards (Belöningar) page (Figure 8.7) looks the same as in the original prototype since this was not a part of the defined problems. A minor refinement was made by reformulating a few words to make the text more clear. On this page the user is presented with the currently viewed reward, information on what reward it is and if the user had enough Honeypoints to collect (hämta) or donate (donera) that

specific reward. When collecting a reward the user gets the confirmation message: *Collect the reward? - You've got this reward for all your hard work, time to pick up!*. A similar confirmation message appears when donating a reward together with how much money is donated and to what charity the money goes to. Thereafter a pop-up message that confirms the chosen action. The user can scroll between collected/donated rewards and an upcoming reward. For all rewards the user is provided with information on how many Honeypoints that are needed for a specific reward compared to how many Honeypoints the user has.

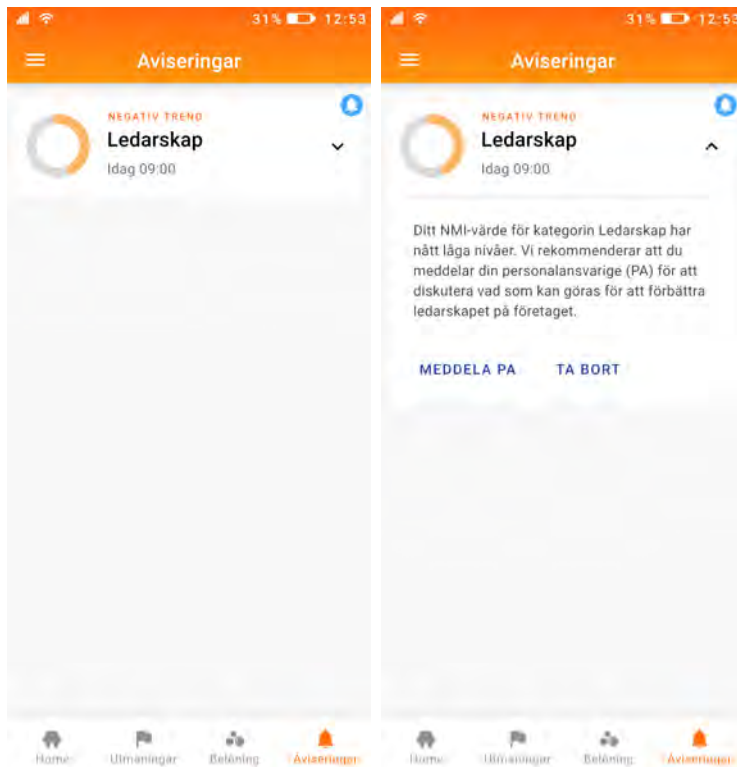


Figure 8.7: The Rewards page

8.7 The Notifications page

The Notifications page was moved from being placed as a tab on the Vibes page to being placed in the navigation bar. The name of this page was also reformulated from being called *Notifikationer* to *Aviseringar*, both being synonyms of notifications in English. If one of the categories has a negative trend, this will be shown here (Figure 8.8a). This page is similar to the original prototype except for a few changes. A circular progress bar of the specific category was added instead of having a specific icon representing the category. The information provided (Figure 8.8b) was reformulated to make it less confusing where for example the Swedish word PA is explained to be the employee's manager (personalansvarig). The information now says: *Your ESI-value for the Leadership category has reached low levels. We recommend that you notify your manager to discuss what can be done to improve*

company leadership. The user can choose to message their manager, and will get a confirmation message stating: *You are not anonymous in this message, but your data remains private. By clicking on continue, a message is sent to your manager with a request to be contacted*. If the user instead decides to delete the notification the confirmation message *We see that you have not notified your manager and urge you to handle this together with your manager or other trusted person* appear.



(a) Negative trend - closed

(b) Negative trend - opened

Figure 8.8: The iterated Notification page

9

Discussion

This chapter will include a discussion surrounding the process and used methods and the results. Lastly, a brief discussion regarding generalizability and ethical issues is provided before stating examples of future work.

9.1 Reflection on process and methods

Think-aloud was a suitable method to use in the Empathize phase to find different usability problems in the original prototype. This method was conducted in the same way in the Test phase when using the iterated prototype which gave us the possibility to compare the usability problems in the original prototype with the iterated prototype. The participants testing the original prototype did not test the iterated one since it could lead to bias, both since the participants are then familiar with the application, and might be more positive towards the iterated prototype when knowing that we were the ones designing the iterated version. Having new participants testing the iteration also gave a larger amount of participants in total reviewing the whole concept of the application. The environment in which these two tests were conducted were different which could have affected the results. The first one was conducted in a home environment which can be seen as a more relaxed and less serious setting compared to the last TA which was conducted in a school environment.

When conducting the TA's both in the Empathize phase and Test phase, a goal was to have the participants place themselves in a real life scenario when interacting with the prototype. To make the interaction with the prototype feel as natural as possible, it was decided to not include tasks for participants to complete but instead browse through it on their own in a way they felt most intuitive. It is however important to remember that how they interacted with the prototype during Think-aloud might be completely different from a real life situation of browsing through a full functioning application for the first time.

It was decided to include six participants when conducting think-aloud since this, as mentioned, is enough to find around 85% of the usability issues [24]. In these user studies, the interviews were conducted as a complement to Think-aloud, and the same participants were therefore chosen as interviewees as well. These interviews were mostly focused on the usability and what was said during the Think-aloud with a few questions regarding the participants' needs and opinions on the whole experience. When conducting interview studies to discover users' experience and

needs, more than six participants are required [24]. Responses from interviewees not concerning pure usability, e.g., removing the Achievements page as this was mentioned as an unwanted feature, has been taken into consideration during the iteration of the design, but it is of high importance to further discuss the topics with more subjects in order to draw any conclusions.

During the interviews in both Empathize phase and the Test phase, the participants still had access to the smartphone with the application up on display, and had the possibility to revisit pages and features during the discussion around it. It could sometimes be the case that the participant did not comment on a specific feature or design element during the Think-aloud, but when discussing questions surrounding it in the interviews they navigated back to it and commented on it with ease. This indicates that it was a good idea to have a complementary interview after the Think-aloud. The reason for this could be that they got more relaxed than in the rather unusual situation of thinking out loud and this made it easier to take in the information presented. Or that we during the interviews discussed which made them look for these specific things in the app. Another possible reason is that the design simply is not intuitive at *first* sight and that some things were easier to understand after looking at them one more time.

All of the participants in the Co-design workshop were interaction design students which was suitable for brainstorming solutions to the defined problems since they could discuss improvements with a theoretical background. However, a more diverse group could be beneficial to not only include designers' perspectives.

The choice of using an online questionnaire before the Test phase was to gain input from a greater number of participants than in the earlier user studies. The participants in this questionnaire were anonymous which could lead to them feeling more comfortable in being critical when answering questions. It is however important to take into consideration that it is not the same thing to view GIFs of the different features in the prototype compared to actually interacting with the prototype. It was also noticed that people participating in the other user studies were willing to share more developed answers where we as facilitators also had the possibility to ask follow up questions based on their answers.

9.2 Reflection on the results

Going back to the problem list to evaluate which of the problems can be seen as solved, or at least that the new iteration works better than the original prototype. All in all, problem 1; *How might we through the app design inform users about how features in the application work*, can be seen as improved as all participants showed a great understanding of the iterated prototype features in the last Think-aloud. Problem 2; *How might we through the app design inform users about how the application has value for the users*, was a hard problem to solve as it was hard to define a good way to communicate this through the actual design. The majority of the participants in the questionnaire and the interviews stated that they could see

a value for an employee. However, some commented that it is more obvious how it has a value for the company. To increase the understanding of how it can have value for a specific employee one idea is to further develop the onboarding to be more informative regarding this. This problem should also ideally be handled in earlier stages of the user experience and did not fit into the scope of this project as it concerns internal communication and management at the company. The utility, or value, for the user should ideally be clear even long before downloading the application because utility is the first step of a complete user experience. Furthermore, an About Vibe section could be implemented where the users can read about both Employee Engagement and its benefits, but also about the app features and how they will benefit them and their daily work life. The value of the application could also be communicated through an onboarding screen.

When testing if problem 3: *How might we through the app design inform users about how much time and/or effort is needed from them to use the app?* can be seen as improved, it was still a bit unclear for some participants how often they are expected to answer Vibes. One idea for improvement is to change the number of days on each Vibe and instead show between what dates the active Vibe will be active, e.g., “Active April 1st - April 14th”. This could make users understand that Vibes will be active twice a month without the need of counting the days in their head to make sense of the information provided.

Our interpretation from the second Think-aloud was that the participants understood that the challenges are voluntary and they made less stressed comments interacting with this page compared to the original prototype. This might be a consequence from choosing to remove already completed challenges as well as one active challenge and making the upcoming ones out grayed and unclickable. Another reason for a less stressful first impression could be from changing the word Mission (Uppdrag) to Challenges (Utmaningar).

Problem 3 was also one of the reasons for removing the Achievements tab since participants in the Emphasize phase had said this page to be overwhelming and stressful and that it felt like “a full time job” to use the application since it included too many ways to level up and earn Honeypoints.

Regarding the problem 4: *How might we through the app design inform users about that Vibes are anonymous*, even if the majority of the participants gave the impression of being more comfortable to answer Vibes truthfully when using the iterated prototype, one of them expressed skepticism regarding the anonymity even after reading about how it is anonymous. Hence, anonymity is an important thing to iterate further on. If the users do not feel comfortable answering Vibes truthfully, especially strongly negative answers, there is a risk of them just answering positively on all questions to gain Honeypoints. This may lead to the HR department getting an unfair image of how satisfied the employees are at their workplace which destroys the value of the application.

An anonymous chat function could be implemented and tested on the Notifications page, to increase the likeliness of employees contacting their HR manager. But for users being skeptical towards the whole idea about this type of data gathering, the transparency of anonymity needs to be increased even more. An improvement could be to show more detailed information regarding how the surveys are anonymous and maybe even show a visualization on how it will look for the HR manager that receives the data. However, different iterations of this needs to be tested. Furthermore, methods for understanding the specific reasons behind skepticism regarding anonymity should be conducted. It would be valuable to examine whether people are skeptical due to pure untrust or due to being uninformed and unaware of how the data will be reviewed by HR.

When it comes to problem 5; *design less confusing interactions on the Done (Klar) button for challenges*, the outcome of testing the new version shows that the word Completed (Avklarad) seem understandable enough as 61 out of 66 (99%) of the questionnaire respondents described with their own words what will happen, and their intuitive thoughts match with what actually happens. Problem 6; *provide tools or guidance that facilitate completing challenges*, was aimed to be solved by implementing links and icons on the pages where the user has selected to read more about a challenge. The links seem to be a good way to help the user forward toward completing a challenge, as all participants either commented or interacted with them. The calendar however would need some more work as it was not intuitive to all of the participants that they could press it and/or what exactly would happen when pressing it. To make the calendar icon more intuitive, one idea is to add a plus sign into it, to hint that it has to do with *adding* something.

Regarding problem 7; *visualize achievements (progress for things such as completed Vibes and challenges) in an easier way*, removing a whole page of achievements from the original prototype was a rather drastic move. It seems that the Honey-point amount and Vibe streak presented on the Home page in the new iteration might lay a bit too hidden as some participants were positively surprised when they randomly found it. So a future iteration of the design might be to test if this information could lay on the Home page but constantly shown instead of hidden in a drop down section. The motivation the Vibe streak could elicit needs to be tested during a longer period to see whether it is too small of a gamification aspect or if more gamifications needs to be reimplemented somewhere in the application.

For problem 8 *How might we visualize the users' personal and company analytics (summarized through answers on Vibes) in an easier way?* a lot of changes needed to be done from the original prototype. When comparing the outcome from the Think-aloud sessions in the Empathize and Test phase, the impression was that the participants using the iterated prototype were feeling less overwhelmed and stressed and showed less skeptical attitudes towards the Analytics page than the participants testing the original prototype. Some participants testing the iterated version of the prototype saw the Analytics page as a valuable feature while this was not mentioned at all with users testing the original prototype. The most likely reason for this might

be that the page is changed to be more condensed, fitting more information into one screen to provide a better overview. After the last user study it was also clear for all of the participants that the page provides a summary of how they as employees have answered in Vibes, and not that it shows how well they are performing in their role, even though one participant understood it first after entering the Analytics page. To reduce the risk of misinterpreting Employee Satisfaction Index (ESI) to be a term for how satisfied the company is with their employee, this term could be called something else in the application, e.g., Personal Satisfaction Index.

To summarize, problem 1-8 can be seen as improved when looking at the test participants' reactions toward the iterated prototype. However, improvements can of course be done on all of them.

9.3 Ethical issues

Ethical concerns have arisen throughout the project and have been discussed before each conducted method. Consent has been received from people prior to their participation, letting them know in what way the data will be confidential or anonymous, and that their participation is voluntary and that they can withdraw without any consequences. Conducting the Think-aloud sessions involved situations in which the participants could feel e.g., nervous or stressed due to the rather unusual situation. To prevent this from being an uncomfortable experience, we did our best to inform them about all details, e.g., that the prototype is not a working product and that they should therefore not be hesitant to try all the features. The Think-alouds, semi-structured interviews, co-design workshop and questionnaires have been thoroughly planned beforehand. With the aim to make them feel comfortable in sharing true unbiased opinions, tasks and questions have been formulated with care, discussing what small linguistic details to avoid.

Ethical issues concerning the future use of this type of application have been considered when designing the iterated version of the original prototype. Issues were found regarding the first impressions of the original prototype, leaving the participants with a feeling that it was not completely anonymous, and that some of the features seemed like a chore they have to do to “become a good employee”. A user should always feel safe when using a product, especially as the product has a purpose of increasing well-being.

9.4 Future work

The first fundamental step towards a good User experience (UX) is to convey the utility to the user [18]. This has to be communicated to the employees at the company *before* they are expected to start using the application. Future work should hence include exploring how to reach out with this type of information, where a focus should lay on conveying the value and benefits of use for the single employee. The second step toward good user experience is the usability part [18], which has

been taken care of to a good extent in this study. However, longitudinal studies are necessary to draw conclusions regarding users' understanding of positive impact on work life and individual well-being. This because they first after a period's use will be able to see the positive effects that continuous pulse surveys (Vibes) and the other app features will have on their personal employee engagement, hence satisfaction at work. These future tests should be done with actual employees at a consultant company in order to get target users' opinions on the whole experience. To reduce the risk of Vibee and other Employee Engagement Softwares facing the same critique as New Public Management (NPM) it could be good on a managerial level to follow up the early insights from survey data - and discuss possible improvement with the employees. This to increase the transparency by making employees feel involved in the process and not monitored.

The desirability should be high to provide a good user experience. The aesthetics of the application is important to make it memorable, and make users want to continue using the application frequently [16]. In this study, the delimitation was to focus on the design and information provided and the actual interactions within the application. It could be valuable to conduct a study solely on aesthetics to focus on desirability. Two participants in the Empathize phase commented that the design could be interpreted as a bit childish, and that it might not fit perfectly for an application that handles a rather serious matter, i.e., satisfaction at the workplace.

The accessibility aspect was not focused on during this project as wished, as we made use of the already developed design language of Vibee. The accessibility should therefore be tested at in a future study.

10

Conclusion

This study has researched the fields Employee Engagement, Employee Engagement Softwares as well as user resistance where a gap in literature was found, i.e., a lack of guidelines available for interaction designers when designing a EES with a focus of minimizing the risk of user resistance. The aim of this study was therefore to contribute to the field through an answer to the research question *What guidelines can be provided for designing a new Employee Engagement Software aimed to engage everyone, including skeptics?*. A Research through Design approach was taken, following the 5 Phases of Design Thinking Process, using an already existing EES application prototyp called Vibee.

Throughout this project, problems were encountered that could lead to users being skeptical towards either the whole idea of Vibee, or specific features. These have been aimed to be solved by iterating the design and information provided in various ways. Testing the final iteration of the prototype showed that people understood the core idea behind Vibee, and said that they were open to use it. Although, some areas of concerns still remain that needs to be iterated further to minimize the risk of user resistance even more.

This study resulted in a iterated version of the Vibee prototype, and many valuable insights have been gained through the whole design process. These learnings will be presented below, in the form of a list of seven guidelines for interaction designers to take into consideration when designing a EES application to minimize the risk of user resistance.

Focus on transparency and continuously reminding the user about anonymity

Make it clear for the user about anonymity and information on how their data is being handled. Transparency regarding the anonymity of answering surveys is the key for making users comfortable to answer the surveys truthfully. One way to do this may be to include information about anonymity on several pages in the application.

Employees review their workplace, not the other way around

If providing an overview of the employee's answers in pulse surveys, it is important to consider the choice of words carefully, as well how the UI is designed, in order to make the employees understand that they are not the ones being reviewed, but instead that the app is for *them* to review their workplace. Formulate the information

with emphasis on words such as *you* and *your* (opinions, thoughts..) to not make it sound like the data overview is compiled through all employees' survey answers.

Consider terminology and language

Focus on terminology, phrasing of information as well as translation from one language to another. Consider choice of words that might be synonymous but convey a slightly different meaning. The language should be positively encouraging and motivating, but it should be clear that the features in the application are voluntary to use and not mandatory work tasks. When translating the information in an application to another language, consider the choice of translated words to not have the intended meaning skewed.

Provide explanation on new important concepts at first encounter

Do not put the user in a situation where they have to search for the meaning of a newly introduced concept. Instead, provide explanations where the users are first introduced to it, to make the application more intuitive.

Focus on simplicity

Consider the features provided and stick with functions that are necessary for an EES application. By not including too many or overwhelming features, the focus and value of the application might lose its meaning.

Enable integration with other softwares

Make it easy to integrate the EES with other softwares used at the company where, e.g., chat-, meeting-, and scheduling features already are provided.

Test first impressions and intuitive understanding

When conducting methods of testing prototypes, allow participants to interact as freely as possible to open up for first impressions to get insights on both usability but also overall understanding of what the app is for. This to make sure that the users understand the core idea of the application at first encounter with it. A version of Think-aloud but without any predefined tasks works well.

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A

Guidelines from literature

1. Increase understanding of value/impact the app will have on the individual user
2. Increase understanding of value/impact the app will have on the company
3. Provide information about the amount of effort/time expected of the user
4. Provide information on when the application will be used
5. Provide information about how it will affect the way they work
6. Provide information on why it is suited for the different users.
7. Allow users to shape how they use it
8. Let users know if it will control or limit them in any way
9. Keep a high level of ease of use/usability/usefulness
10. Show users what areas are most relevant to them
11. Strive for intuitiveness on how users start to approach using it

B

Consent form for TA-protocol and Semi-structured interviews

We conduct this user test as a part of our master thesis project, and our goal is now to understand our users better. The test is divided into the two following parts:

1. **Think aloud protocol**

The first part consists of a method called Think Aloud Protocol. Here, you will be asked to think out loud while completing a few tasks in a smartphone application.

To be able to go back and analyze the test later, we will:

- Take notes on what is being said
- Start a screen recording on the phone that capture both what happens on the screen and what is being said out loud

2. **Semi-structured interview**

An interview will then be held to understand you as the user better, and together discuss the app design and functionalities.

To be able to go back and analyze the test later, we will:

- Take notes on what is being said

Participation is voluntary. The gathered material will be anonymous and will be used to analyze the app design and functionalities. Quotes from Think Aloud Protocol and/or the interview may be used in written form in the master thesis report and/or presentation.

You have the right to withdraw at any given time, as well as requiring your data to be deleted, even after a completed test.

I have read and understood the information presented above

Signature for consent of data collection:

C

Pre-test questions

1. Age?
2. Gender?
3. Education background?
4. Occupation?
5. Approximately how much phone screen time do you have each day?
6. Can you name of your most used apps?
7. Have you used an employee engagement application/software/program before?
If yes: What type of application?
8. Do you use any phone applications related to your workplace/school? How often? What type of tools/apps?
9. If not phone applications, do you use any workplace/school desktop tools? How often? What type of tools/apps?

D

Think-aloud protocol

Practice tasks in the Tradera application

1. Find a Yatzy game and add to favorites
2. Explore what products exist under the category “Home electronics”
3. Find “Messages”

Task in the Vibee application The task is to go through a prototype of the app Vibee and explore all the features the app has to offer in whatever order you want.

E

Semi-structured interviews in Emphasize phase

1. What do you think this app is for?
2. What do you think you are supposed to do on this application and approximately how often do you think you are supposed to use it?
3. After having interacted with the app, how would you describe your personal understanding of what Employee Engagement is about?
4. What features do you find most valuable and why?
5. If you could change one thing in this product, what would it be and why?
6. What features would you like to see in this app that are not in this prototype? Try to think outside the box.
7. Was this application similar to something you have used or heard of before? If yes: What application/website have you used/heard of?
8. You may have noticed that you got a different amount of honeypoints for the different Vibes and challenges. How do you interpret that different things are worth a different amount?
9. What do you think happens with the answers you give in Vibe surveys?
10. The plan is that through the Vibe surveys, the HR department can track employee's feedback on their wellbeing, thoughts regarding the work environment, colleagues, managers, progress, etc. These answers will be shared anonymously. What do you feel about that?
11. As you might have noticed, you get rewards automatically when you reach a certain level of honeypoints. Another way to provide rewards could be to let you as a user collect honeypoints and then choose freely from a set of different reward products or services, or to donate them of course. What way would you prefer?
12. Before entering the "notices" tab, what did you expect to be there?
13. How likely would you say it would be for you to start using one of these applications if they were provided at your workplace. Please elaborate on your answer.

F

Consent form for Co-design workshop

Hi!

The workshop that takes place on Thursday 24 March 2022 at 11:00 will consist of a collaborative brainstorm of various kinds, where the goal is to find new design solutions together in an existing app design. You do not have to come prepared in any way.

We will take pictures of the material produced, as well as take notes which will be used in project reports, presentations, and portfolios.

Participation is voluntary, and no personal data will be saved. You have the right to cancel your participation at any time.

For questions before or after the workshop, contact:

- lovsan@student.chalmers.se
- holmjos@student.chalmers.se

I consent

Yes

G

Description of extreme characters

Spongebob is funny, hyperactive, clueless, and childish with a happy-go-lucky personality. He is also smart and knows what is right. He is extremely goal oriented and nothing prevents him from completing a task. He is not only extremely good at his job as a chef, but has also a strong passion and an excessive love for the job. He enjoys his job more than any other activity and is sad when he can not be at work.

He is social and loves to hang out with others. He sees everyone around him as friends or soon-to-be friends. SpongeBob also does a lot to impress others and achieve their goals.



- + Social and outgoing
- + Hard working
- + Smart
- + Curious
- Workaholic
- Naive
- Anxious

Patrick Star is kind, lazy, uneducated, naive, and generally ignorant. He is very immature for his age and engages in many childish activities. He has a short stubbornness and is prone to psychopathic tendencies if something upsets him.

Patrick suffers from low self-esteem and gets very jealous when he sees the success of others. He is also selfish and sometimes a bad friend. Even with good intentions, he often does not take into account the environment or individuals around him. He likes to chill under his rock on the seabed but he goes out every now and then, usually to hang out with his best friend. He is mostly unemployed.



- + Kind
- + Funny
- + Childlike mind
- Low IQ
- Easily distracted
- Lazy
- Cheap

Squidward Tentacles is considered rude, stubborn, snobby, often in a bad mood, selfish and pessimistic. Sometimes even a little sneaky sadistic. He sees the world in such a negative light that he is rarely seen greeting someone with a smile. He is intelligent and highly educated and he often becomes jealous of those who are more talented than him. He has a cynical attitude and great self-esteem and sees others as uncivilized idiots. He prefers to be alone and does not let anyone get close to him.

He hates his job as a cashier and is often seen sleeping or reading at work instead of working. Despite this, he still works there and never thinks about looking for another job, but endures it out of sheer laziness and stubbornness.



- + Intelligent
- + Creative
- + Independent
- Narcissistic
- Arrogant
- Rude
- Lazy

H

Semi-structured interviews in Test phase

1. What do you think this app is for?
2. How would you describe what Honeypoints, Vibes, Challenges are?
3. What do you think you are supposed to do on this application and approximately how often do you think you are supposed to use it?
4. After having interacted with the app, how would you describe your personal understanding of what Employee Engagement is about?
5. What features do you find most valuable and why?
6. If you could change or delete/add something to the app, what would it be and why?
7. Was this app similar to something you've used or heard of before? If yes: What application/website have you used/heard of?
8. Would you feel comfortable responding honestly to Vibes? Please elaborate on your answer.
9. How do you feel about being able to see your streak on how many Vibes you have responded to, as well as how many Honeypoints you currently have?
10. What are your views on the Challenges page?
11. What do you think about the amount of active and upcoming challenges?
12. What are your views on the analysis page?
13. Do you think that you would have gone to the analysis page yourself if you had had the app? Please elaborate on your answer.
14. Do you think this application could have value for employees in a workplace? Please elaborate on your answer.
15. How likely would you say it would be for you to start using one of these applications if they were provided at your workplace. Please elaborate on your answer.

I

Online questionnaire

Pre-questions

1. Your age:
2. Your occupation:

Application onboarding

GIF showing the application's onboarding

1. I consider the app introduction to be ...
[1. Very unclear - 5. Very clear]

Vibes

GIF showing the Vibes on the Home page

1. I consider the information that a Vibe is anonymous to be ...
[1. Very unclear - 5. Very clear]
2. How often do you think you need to answer a Vibe?
3. I consider to see my Vibe streak to be ...
[1. Very demotivating - 5. Very motivating]

Challenges

GIF showing the Challenges page

1. What do you think happens if you press the button "Competed" button on one of the challenges?
2. I consider the information about when the upcoming challenges will be active to be ...
[1. Very unclear - 5. Very clear]

Rewards

GIF showing the Rewards page

1. I consider receiving rewards by responding to Vibes and completing Challenges to be ...
[1. Very demotivating - 5. Very motivating]

Analytics

GIF showing the Analytics page

1. Shortly describe your thoughts regarding the Analytics page:

Closing questions

I. Online questionnaire

1. The app has a value for employees of a company:
[1. Do not agree at all - 5. Completely agrees]
2. Please elaborate:
3. Could you have imagined using this kind of application at your workplace/future workplace?
[Yes - No]
4. Please elaborate: