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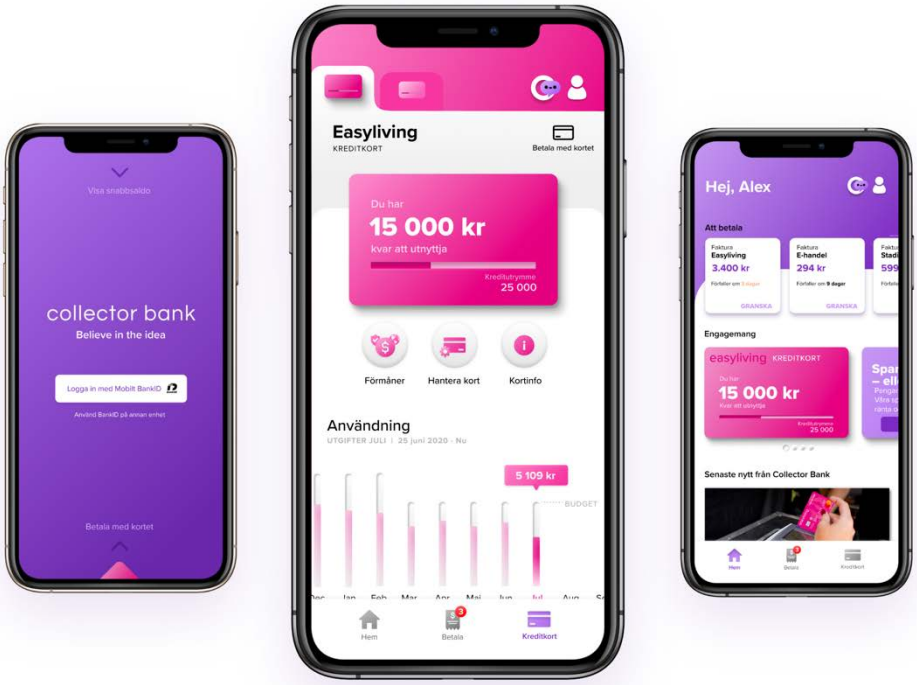

Designing to Improve the User Experience of a Credit Card Service

Master's thesis in computer science and engineering

CAROLINE FALK AND DANIELLA HEDLUND

Department of Computer Science and Engineering

CHALMERS UNIVERSITY OF TECHNOLOGY

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MASTER'S THESIS 2020

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Supervisor: Thommy Eriksson
Advisor: Hedda Ottersten, Uptive
Examiner: Staffan Björk

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Department of Computer Science and Engineering
Chalmers University of Technology
SE-412 96 Gothenburg
Telephone +46 31 772 1000

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Abstract

The digitalization of society means a change in interaction between banks and their customers. In the non-digital age, customers visited their local branch office for a personal meeting. Today, customers demand multiple channels for interaction, including digital platforms for self-services. Thus, this means new challenges for banks, on how to design the user experience of the digital platforms that meet the needs of the customers.

The aim for this thesis has been to define important guidelines to consider for an improved user experience, when designing an interface of a digital credit card service. This has been done on behalf of Collector Bank, with the purpose of identifying user needs and impact areas on how to improve the value for the customer. This, by giving the bank the knowledge to prioritize measures in order to reach their business goals with the service. The delimitations of the study were set to focus on the user experience of the app interface, but with considerations for the credit card service to understand the value of the product.

The results of the preliminary study have been identified behaviors of the credit card customers and their needs and requirements regarding the user experience of the app interface. Five behavioral archetypes have been identified; the deal seeker, the analyst, the comfortable, the endeavor and the spontaneous. The user needs were of three recurring patterns, which was defined as the focus areas for an improved user experience; safety, financial control and additional value. Moreover, impact areas were defined together with the bank to identify the business goals and desired impact with the product, and by this have a shared vision and be able to prioritize needs that met the business goals.

The results of the study were founded in a data collection consisting of 22 interviews with customers of the bank, an observational study with the customer service department, a literature review within the problem domain and a heuristic evaluation of the current interface of the app. The findings were utilized to develop a concept for the app interface. The concept proposed design solutions on how to fulfil the user needs, and how to meet the desired impact with the credit card service by interface design.

Keywords: user experience (UX), user interface (UI), user research, interaction design, prototyping, design process, credit card, mobile banking.

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To all employees at Collector Bank, who welcomed us into the team, supported us and helped us during this project.

Finally, our appreciation to each other. For our team spirit, completing each other's strength and weaknesses and always encourage each other to do our best and deliver a great thesis.

Caroline Falk & Daniella Hedlund,

Gothenburg 2020

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1
Introduction

This chapter gives an introduction to the thesis. It gives an understanding of the background and problem domain and an introduction to the stakeholders of the project. Moreover, the aim and research question will be presented together with limitations, to frame the project scope of the thesis.

1.1 Background

Technology is thriving and the digitalization of the society is a fact. This means a change in communication, not only between people but in the interaction between companies and their customers. In the non-digital era, the bank customer visited a local branch office to make errands, but as the banking industry has been digitalized banks now have demands on providing multiple channels for interaction. This means new challenges for customer satisfaction, as the user may demand self-services and digital platforms that still need to give the trust and security a personal meeting may give. By this, the user experience of the digital channels a bank provides is of great importance.

1.1.1 The Bank

To be at the forefront within the field of banking, Collector Bank always strives to adjust its products towards the market demands, their consumers, and their needs – they are constantly evolving. Collector Bank was founded in 1999 by Lena Apler and Johan Möller and started as a non-performing loan company. After a reorganization in 2003, they became a credit market company that offers their own products towards their customers. They became a Swedish digital niche bank that offers financial solutions for private and corporate customers (Collector Bank, 2020). Private consumer services include saving accounts, credit solutions, and digital financial products. The business segment provides payment solutions for e-commerce and retail, factoring, loans, and savings accounts.

Collector Bank work toward core values and are the starting point in the entire business and their approach to employees, customer relationships, and the world. The core values are entrepreneurship, ethics, and engagement where entrepreneurship stands for their driving

force and willingness of being innovative and forward, and their ambition to always grow as a company. The second core value, ethics, does for Collector Bank imply zero tolerance of discrimination, having the responsibility to prevent criminal behavior and to be transparent when it comes to giving correct information about their terms and conditions. Engagement, which is the third core value, represents their dedication to doing their best and always finds the best solution, but also in the eagerness to invest in their employee's skill development since they work with technology that constantly evolving.

1.1.2 Project Brief

Collector Bank launched their first credit card, Collector Bank Easycard, in 2010 and has since then expanded with a second card – Collector Bank Easyliving. Two cards with different offers and benefits.

By launching an app in 2017, a compiled site was offered for the private consumer services (Collector bank, 2020). Since Collector Bank is a digital niche bank, they have to continuously develop their digital products to be at the forefront of the digital growth and market. The user experience is increasingly demanding and to be able to have a good market segment they now want to take the app to the next level – enhance the user experience and create an app that will meet the needs of their consumers.

To develop a user-friendly service that will increase the user experience, one must understand who the users are and what needs they have. The project brief, received from Collector Bank, was therefor to gain insights and knowledge about the credit card customers of Collector Bank and deliver these to the stakeholders. Hence, the problem statement was an open question with a request for an exploratory study which defined the user needs of the credit card and the mobile banking app. This means the formulation of the problem statement became a part of the preliminary study, as the study highlighted what was needed to be improved to tailor the user experience. The deliverables to the stakeholder was therefore the results of the preliminary study, and the results from the concept development. However, the developed concept was not aimed to cover all views the bank app requires but could be seen as an inspiration for how the user needs could be fulfilled in the interface.

1.2 Stakeholders

The stakeholders for this project are the two master thesis students, Caroline Falk and Daniella Hedlund, and the university they are enrolled at: Chalmers University of Technology. The university has provided a supervisor, Thommy Eriksson, who has given support in the process of writing the thesis.

The client for this project is Collector Bank. Because of this, the bank and its customers are stakeholders for this project. Furthermore, the consulting company Uptive has been the employer providing a project position for the two students. Uptive has also provided a mentor, Hedda Ottersten, working as a Customer Experience Lead consultant at Collector Bank. The mentor has been an advisor in questions regarding the client, and also given support in the working process.

As participants has been recruited for data collection and formative evaluation, they are another stakeholder for this thesis. The preliminary study has focused on customers at Collector Bank, thus they were recruited as participants in the study.

The most prominent deliverable with this project from the viewpoint of the university is a report that may contribute to research within the interaction design discipline. The goal from the client perspective is to deliver results that may contribute to an improved user experience for the credit card customers of the bank. Thus, there has been a need to balance time and effort spent on delivering a report that meets the academic requirements and results that might be fruitful for the company.

The interest with this project from the client perspective is to increase their customer loyalty in order to be profitable. Because of this, there is a motivation for the bank to increase the duration and conversion of the credit card service. Consequently, this means that the risk of customers using the credit more than their household economy can cope needs to be considered and cared for. This is an ethical consideration the bank is aware of, and this is reflected in the core values of the bank – entrepreneurship, ethics, and engagement. The goal from the student's perspectives has been to aim to empower the user and deliver a user experience that fulfil the user needs and provides financial control. As Collector Bank aims to have satisfied customers, and also has ethics in their core values pointing at the importance of being transparent and trustworthy as a bank, there has been a cooperative will in this project to empower the user. This means the aim has been to provide a user experience that will support the user in taking informed decisions regarding their economy and by this ease the effort of handling financial errands.

Hereafter, the client *Collector Bank*, will be referred to as *the bank* in this thesis.

1.3 Aim and Objectives

The aim of this project is to research how one could improve the user experience of a digital banking service, which in this case is limited to a credit card service with focus on the interface of an app.

The purpose is to give the bank a better understanding of their users and their motivations, and thereby be able to deliver services that fulfils the needs of their users. Moreover, the aim is to identify where it will be possible to have an impact to improve the value of the service for the users. This is because, with these insights, the bank may be able to prioritize measures in order to reach their business goals with their service.

In order to reach the desired aim of defining guidelines for improving the user experience, the following objectives should be delivered (*Figure 1.1*). This includes identifying user behaviors and their needs, define impact areas and visualize the gained insights and finally design a concept of an interface based on the insights from the preliminary study.

IDENTIFY USER BEHAVIORS AND NEEDS

Collect data to empathize with users in order to understand the behaviors and needs of the credit card customers.

DEFINE IMPACT AND VISUALIZE INSIGHTS

Visualize and communicate the insights gained through data collection. This is in order to highlight important aspects that should be brought in to the design phase, to ensure that the customer needs are fulfilled.

DESIGN A CONCEPT

Develop a concept of an interface for the credit card service that will meet the identified user needs. The interface design will be communicated through a prototype, and guidelines will be defined to conclude the insights gained in the project.

Figure 1.1. The objectives of the project.

1.4 Research Question

The following research question with sub-questions has been formulated for this project.

What guidelines could be considered in order to improve the user experience when designing an interface of a digital credit card service?

- What are typical behaviors of credit card consumers?
- What needs and requirements can be identified of the consumers of a credit card service?
- What design solutions for an app interface could be developed to meet the needs of the credit card consumers?

1.5 Limitations

This project has been framed by the master thesis course of 30 credits at Chalmers University of Technology. The resources are the two students, working at full time for 20 weeks.

This study focuses on identifying user needs of the current customers of the bank. In other words, the findings of this study may not be applicable for any credit card service but is tailored for the bank. This is because, the main data collection for this study has been conducted with current customers of the bank. However, the generalization of the results will be commented on in the discussion chapter. To narrow it further, this thesis focus on how to improve the user experience for the current customers of the bank, and accordingly, not how to extend the target group to attract potential customers. Thus, the focus has been on the user experience during the use of the credit card service, and not the phases of before and after usage.

There are many factors to consider regarding the user experience of a credit card service. Thus, to define the scope further, this project will focus on improving the digital platform from the customers point of view. In other words, a limitation has been set to not cover for other contact points such as email and contacting customer service. The concept development and resulting design guidelines are developed primarily for mobile devices, based on the fact that the bank is a digital niche bank and digital solutions for a credit card should always be close at hand. Because of this, the web interface of the bank has therefore been excluded from this project. Moreover, the proposed concept will not cover the whole interface of the digital platform, but rather highlight solutions on how to fulfil identified needs of the users.

The concept development phase will be limited to show potential solutions on how the needs of the customers could be fulfilled in an interface of an application. Due to the limited time, the evaluation of the concepts will not be tested and validated with representative customers of the bank. Instead, usability testing has been done with other participants, and the results for this has therefore been identified usability errors. This means the produced concepts has not been validated with users for solving their needs but should rather be seen as suggestions. However, as design is a continuous process, this could be seen as a first step in the process of improving the user experience of the app for the customers of the bank.

1.6 Project Planning

The following segment gives an overview of the working process and time plan for the project.

1.6.1 Working Process

An overview of the process can be seen in *Figure 1.2* below. The first phase includes a preliminary study with a diverging and converging step, where data was collected and then analyzed to make conclusions and build synthesis. The results from the preliminary study can be read in Chapter 5. The second phase includes the concept development, where the gathered insights from the preliminary study was utilized to develop concepts that would fulfil the needs of the users. This was an iterative process, where the first step consisted of ideating functions and visualizing functions using paper prototyping. Then, a usability test was conducted to improve the design further, and a next iteration included prototyping the concepts digitally. The knowledge gained from the concept development phase, supplemented with the insights from the preliminary study, was concluded in design guidelines. The results from the concept development can be read in Chapter 7.

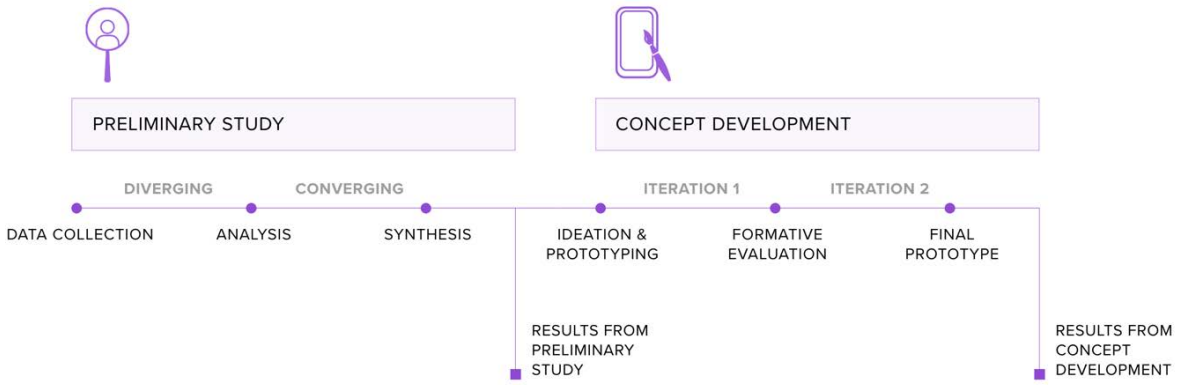

Figure 1.2. Working process - Overview.

1.6.2 Time Plan

The time plan set for the project has been outlined in *Figure 1.3*. This figure shows the final time plan, as this was revised during the process. The figure includes the phases of project planning and a literature study, to plan the process and gain knowledge in order to reach the desired goal. Thereafter, the preliminary study included a data collection in order to gain insights that was later on defined. The concept development started after this, with the stages of ideation, prototyping and evaluation. This was carried through with an iterative approach. The plan also includes time planning for writing the thesis report and preparing the presentation.

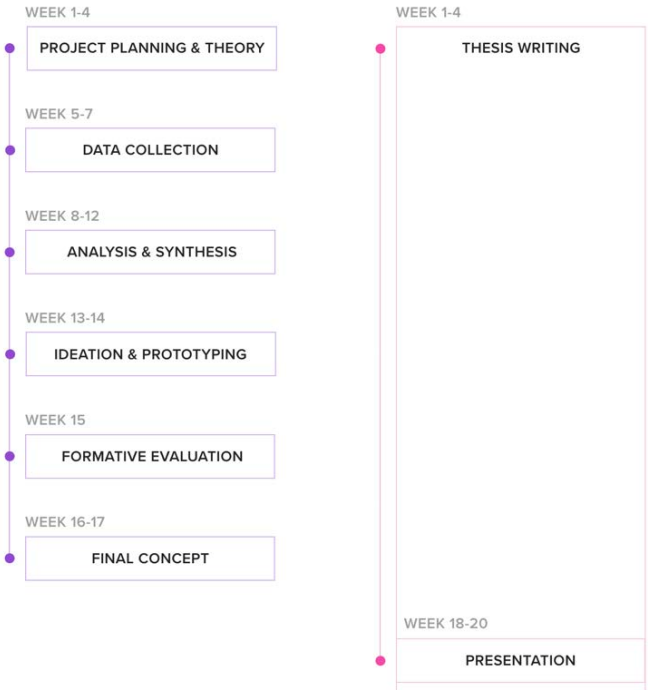

Figure 1.3. Working process - Time plan.

1.7 Ethical Considerations

When pursuing a research project there are important ethical issues that needs to be considered. For data collection, it is important to think of anonymity, confidentiality and informed consent for the participants. Moreover, it is important to consider how the data will be stored; for example, who should have access and for how long. Because of this, one should inform the participants in the study what data is collected, how it will be kept and how it will be used. Furthermore, one should have knowledge in the regulations regarding data collection, such as GDPR (The General Data Protection Regulation).

To convey the consent form, each interview began with informing the participant about their anonymity, the aim of the study and where and for how long the data will be stored. The anonymity was ensured by having the participants names replaced with a number. This entail no traceability back to the participants. All interviewees were informed, which they all approved, that the interviews will be stored in the database of the company no longer than 6 months. This to make sure all important data was gathered. The responsibility for the files is, during the master thesis writing, the two students. The responsibility will then be transmitted to the stakeholders at bank. However, the employees at the bank will have access to the files during the thesis as well, to be able to gain insights alongside the project. All interviewee where agreed upon it was okay to record the interview, to not loose important aspects regarding the use of credit cards.

For this project, there might also be several ethical issues regarding finance for private consumers that needs to be considered. Credit card services could for example raise ethical issues regarding consumerism. A credit card might give a consumer the ability to create opportunities and realize ideas, however it might also lead to outcomes where a consumer will not be able to handle their financial situation. Thus, it is very important to design solutions that will empower the user to help them make informed decisions regarding their financial services. Because of this, the focus for this project will be to make an impact on customer satisfaction, by providing financial control and make the consumers more aware of their expanses and financial situation.

2

Theory

This chapter includes a theoretical framework that has been compiled to provide information about previous research and theory related to the problem domain and project scope.

2.1 The Credit Card

The following section describes the history behind credit cards, what a credit card is and some advantages and disadvantages that comes with the use of a credit card. A short description of the application phase is also provided.

2.1.1 The History of Credit Cards

The history of the credit cards begun in the 1950s when the founders of the Diners Club, Ralph Schneider and Frank McNamara, came up with the first universal credit card – a charge card (Encyclopaedia Britannica, 2019). The card allowed the cardholder to charge their meals at a couple of restaurants in the New York area. At the end of each month, the cardholders were getting a statement and were required to pay the entire bill (Bank of America, 2020). The Diners Club card was followed by the American Express Company, who entered the market with a travel and entertainment card in 1958. These early credit cards were accepted by restaurants, hotels and airlines and was the first multipurpose charge cards.

1958 was also the year when the first successfully credit card system was established. Bank of America launched their card, BankAmericard, in Fresno California (Encyclopaedia Britannica, 2019). This card became the first successful modern credit card and could be used for any type of purchases at the involved merchants. This was also the first time someone offered revolving credits which gave the customers the possibility to pay with installment (Bank of America, 2020). The first BankAmericards was tested in Fresno California and was sent out to 60,000 customers with an offer of 500 dollars as a credit line (99% invisible,

2020). The launch became successful and could therefore be rolled out statewide in California in 1959.

Bank of America began to license their card to banks across the country in 1966 and became the first nationally licensed general-use credit card program. More and more merchants started to accept the card and by June the same year, 1966, 61,000 merchants accepted the card and were used by 1,765,000 customers. BankAmericard were by 1968 affiliated with banks in Canada, Great Britain, Ireland, and Japan as well.

When the establishment of the successful BankAmericard was acknowledge, other banks started to use the same strategy of sending out credit cards to customers. By 1970 more than 100 million credit cards were in circulation across the U.S and all the issuing banks formed together National BankAmericard Incorporated (Bank of America, 2020). In 1976, the BankAmericard change its name to Visa. The name Visa was chosen to reflect its international acceptance, since the name are associated with universal acceptance within many languages.

2.1.2 Credit Card – What is it?

A credit card is a card containing revolving credits a cardholder can use to purchase goods and services. It is issued by a bank or a credit institution and allow the cardholder to borrow money – the financial company lends money (Bloomenthal, 2019). When paying back the borrowed money, the cardholder also must pay interest and other agreed-upon charges. A credit card usually got an interest-free grace period which means that the cardholder got a few days, normally 40-60 days, to pay the whole installment without paying any interest for borrowing the money. Since a credit card include revolving credits, and not a lump sum as a loan, allow the user to pay back at their own pace.

The Application

When applying for a credit card the customer needs to meet certain requirements. The customer fills in a form answering questions regarding household expenses, what the card will be used for and set a desirable credit amount. The financial company will then base the decision on whether the customer will be approved a credit card or reject the application on the customer's income, existing loans and previous credit history (Kortio, 2020). However, when a customer not meeting all the requirements the financial company, the bank or credit institution, still could prescribe the customer a credit card but with a lower credit limit.

Advantages and Disadvantages

With a credit card comes advantages and disadvantages. A credit card could give the cardholder a feeling of security both when it comes to being a buffer in emergencies and not having enough money (Opploans, 2020). A credit card could thus be a quick and easy solution. Feeling safe could also be obtained since the card enables trackability. The invoice enables an overview of the transactions and could therefore create an easy overlook to make sure everything is correct and no fraud has been made (Veloxia, 2020). Since the invoice is sent each month as a presentation of all purchasers done during the former month, the cardholder will get a better economic overview as well.

Benefits differ between companies and distinguish between different cards. Benefits that usually are provided along with a credit card is different and extra insurances, for example, travel insurances, purchase and supply protection and comprehensive insurance. Some credit cards also offer different bonus programs which normally give the cardholder cashback or points to use for other purchases. Installment, interest-free grace period and 0 percent of currency change are other benefits that is brought with the use of a credit card (Kortio, 2020).

But along with a credit card comes also disadvantages. By always having access to money, or in this case credits, can to some extent be an advantage but could also lead to overconsumption and thus result in an unsustainable behavior (Opploans, 2020). Using a credit card and its credits means borrowing money, and that's not for free. A credit card could result in spending money you don't have, and lead to high debts because of the possibility to pay by installment and thus need to pay for extra charges – interest rate and other fees. The benefits that comes with a credit card could also be a disadvantage for some users. This because it works as an incentive and could thus incent people to buy more or pay with installment.

2.1.3 The Digital Transformation of the Banking Industry

Before the thrive of digitalization, bank customers needed to visit their local branch office to do their errands. However, as the use of computers and mobile phones has increased, so has self-services for banking errands. This implies new means of interaction, thus providing new touch points or service delivery channels for the banks.

New ways of interaction also mean new challenges for customer adoption. As argued by the researchers Bomil and Han (2002), ease of use and usefulness has been considered two important factors for customers to accept and use internet services. However, as argued by the mentioned researches, this does not cover the full picture when it comes to internet banking. In their study, the results showed that another important influence for internet banking is trust. Hence, the digital transformation implies new challenges when designing the digital channels.

2.2 Design Theory

Design has been defined in many ways. It may refer to an idea, a prototype or a finalized product but can also be described as the process of giving form to something new. Design is not only the form or appearance of an artifact but concerns how it works and what value it may have for its users. Heskett (2005) highlighted the importance of meaningful design by describing design as "the human capacity to shape and make our environment in ways without precedent in nature, to reserve our needs and give meaning to our lives". Thus, the aim with design is to improve the human condition.

To compare with natural sciences, this concerns the understanding and explanation to how the world is. As Lawson (2006) advocates "Unlike scientists who describe how the world is, designers suggest how it might be". The distinction between explanatory sciences and design was made by The Nobel laureate Herbert Simon in 1969, as he defined design thinking by advocating "The natural sciences are concerned how things are. --- Design, on the other hand,

is concerned with how things ought to be, with devising artifacts to attain goals" (Simon, 1969).

Historically, design has been seen as an add on in the process of product development, in favor for engineering. But to cope with requirements of users, design needs to be considered in the development process, to give form to solutions that will fulfil the needs and requirements of the users and by this give meaning to their lives.

2.2.1 Wicked Problems

To work with design may be seen as a wicked problem, defined by Rittel and Webber (1973) as a problem without a definitive formulation. A wicked problem has no stopping-rule, meaning that there will be no clear end in the process of answering the problem. Instead, wicked problems may just be symptoms of another problem. As an example, when designing an interface for an application, there will be no point where one has reached the right solution, but it is a continuous process of improvement. Solutions are therefore not true or false but may just be better or worse.

When approaching a wicked problem, an iterative process is therefore to prefer. This is because, as one gains more knowledge about the problem, one may then have insights for the next step in the process - insights that one did not have in the beginning of the project. This is why the first step in the design process is a diverging phase of understanding the problem domain and emphasizing with users. Furthermore, when exploring the solution space, the design should be very responsive to changes in the beginning. Then, by testing and evaluating the design continuously and increasing the fidelity successively, this will lead to a better design and thus a better answer to the wicked problem.

2.2.2 User Experience Design

User Experience encompass all aspects of an experience in the interaction with a product, service or system. It concerns how well the product fulfils the needs of the user, and how the user value their experience. This includes measures such as ease-of-use, effectiveness and intuitiveness, but also more subjective values such as emotions, motivations and attitudes towards the product. According to the ISO standard 9241-11, their definition of user experience is "the user's perceptions and responses that result from the use and/or anticipated use of a system, product or service" (ISO, 2018). User Experience can also be defined as a user-centered process, applied to develop meaningful and valuable experiences of a product (Interaction Design Foundation, 2020). This process typically includes user research, usability, interface design and branding.

There are several factors that influences the user experience of a product. One framework used to visualizing this is the UX honeycomb (Morville, 2004), which highlights the following properties influencing the user experience: useful, findable, credible, valuable, usable, desirable, accessible. An adaption of this was made by (Karagianni, 2018), changing the order of the words and adding the explaining themes think, feel and use. An interpretation of the honeycomb model can be seen in *Figure 2.1*.

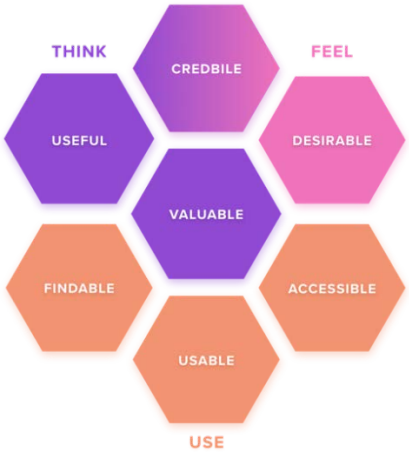

Figure 2.1. The UX Honeycomb.

2.2.3 Usability

Usability is a part, a sub-discipline, of the broader term User Experience, which focus on the ease-of-use of a product (Interaction Design Foundation, 2020). Usability is defined, according to the official ISO standard 9241-11, as *"the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use."*

The level of usability is determined by the features the design has, along with the purpose it will be used for and the context it will be used in. According to Jakob Nielsen, (2012), are usability defined by 5 quality components:

- **Learnability.** Learnability refers to how easy it is for a user to accomplish basic tasks when maneuvering the interface for the first time.
- **Efficiency.** Efficiency is about how quick a user can perform a specific task once they have learned how to master the interface and what actions that are possible to perform.
- **Memorability.** Memorability is how great a design is regarding the learnability in order to reestablish proficiency after a period of not using it.
- **Errors.** Another quality component is how easy it is for the user to recover from errors. It is about how many errors a user will do during the use phase and how severe they could become.
- **Satisfaction.** Satisfaction refers to how pleasant the design is to use.

Usability is typically measured during the development of a system, in order to find errors and problems that will affect the usage of the product (Interaction Design Foundation, 2020). It is typically measured through a method called usability testing. Usability testing are used to evaluate the use of a design with real users where the users complete several tasks while being observed by a researcher (Expreience UX, 2019). This to see how usable and easy the design is to be able to reach the goal. Usability testing indicates where users encounter problems and confusion.

2.2.4 Inclusive Design

Inclusive Design is the process of designing for diversity. The methodology highlights the importance of designing products, services and systems in a flexible way so all people can engage. The inclusive design leader Susan Goltsman defined it as “Inclusive design doesn’t mean you’re designing one thing for all people. You’re designing a diversity of ways to participate so that everyone has a sense of belonging.”. This means a great responsibility for designers, to make thing accessible and prevent exclusion.

Microsoft has exhibited three key principles in their work about inclusive design (Microsoft, 2018). The first one is “recognize exclusion”, which focus on the importance of having knowledge to be able to identify when there is a lack of accessibility. Thus, one needs to think of the full range of humanity and what needs there will be to fulfil to make everyone be able to participate in a user experience. The second principle says, “solve for one, extend to many”. This emphasis the fact that by solving one need for one situation, this may be valuable for the next person in another situation. All disabilities are not permanent, and disabilities can also be context dependent. Visual feedback may help a person with a hearing impairment in one situation, and then be valuable for another one when being in a noisy environment. The third principle states “learn from diversity”, which means a focus on the user and that we can gain new insights by studying new ways for participation in user experiences.

2.3 Behavioral Science

Behavioral science is a multidisciplinary field studying human actions from various aspects (Encyclopædia Britannica, 2020). In user experience design, behavioral science can be utilized to better understand people’s behaviors; such as habits, choices and decision making. When understanding behavioral patterns of users, designers can utilize this knowledge to better fulfil the goals and needs of users. This section will therefore highlight theories for applying behavioral science for designing purposes.

2.3.1 Behavioral Economics

Behavioral economics concerns the effects of psychological and social factors on people's financial decisions (Nationalencyklopedin, 2020). It is a discipline that studies people’s economic behavior in practice. The study of behavioral economics emphasis empirical evidence on how for example social and psychological factors influencing decision making, and how this may differ from classic theory within economics. As an example, one acknowledged contributor within the field is Daniel Kahneman, who won The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel in 2002 "for having integrated insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty" (Nobel Media AB, 2020).

2.3.2 Nudging

Nudging is a method in behavioral science that steer people toward good decision making without taking away the feeling of having the freedom to choose and make decisions by themselves (Nationalencyklopedin, 2020). It is used to break invasive behaviors and change habits. Nudging is achieved by barely noticeable indications that steer people in the direction of making the right decision.

Digital Nudging

Digital nudges are used when the aim is to guide people's behaviors in a digital choice environment. It means using user-interface elements which alter peoples decision making in a predictable way (Weinmann, vom Brocke, & Schneider, 2016). Weinmann, vom Brocke, and Schneider (2016) describe in their article that the outcome of all choices and decision making are influenced by the digital choice environment unconsiously and are dependent on how the choice is presented. This means that depending on how the user-interface elements are designed will steer people in a particular way and could thus lead users to making the most desirable choice. Since the design lead to different consequences dependent on how it is presented resulting in designers having the responsibility of the outcome and must thus understand which effects their designs has. The designer can therefor choose whether to implement a design that nudges intentionally or one that increase the free will. This is thus an ethical question whether it is to steer them to make a good personal decision or take the choice that will bring revenue to the company.

Today nudging in a digital environment are increasing and are used to influence real-world behavior (Weinmann, vom Brocke, & Schneider, 2016). An example of this is Fitbit activity monitor who are nudging people with reminding them to exercise, giving feedback on previous activty and presenting friends' statistics and thus nudge them to advance their activity level.

Hotjar (2016) write in their article "How to nudge for good (and not evil)" on their website that to be able to be successful people need to trust you and perceive the feeling of being safe. By being trusted the customer will know that they're being moved in the right direction.

To be able to nudge the users correctly, one need to understand them. According to Hotjar (2016) is the most important part for a design to be successful, is that it should be helpful – make it simple and easy to use and be a knowledgeable guide.

To relate nudging to the field of banking, having a credit card could lead to consumerism since the user always have access to money – money they might not have. For this project, the aim is to go toward a healthy usage of a credit card and will thus use persuasive design and nudging as methods to make sure the customers of the bank will take the right path and make them aware of their behavior. This means to provide a concept that will give the customer a better overview of what actions that are possible and steer them in the right direction of making the right decision.

2.3.3 The Fogg Behavior Model

The Fogg Behavior Model (FBM) is a framework to describe what causes behavior change (Fogg, 2009). The theory proposes three factors that must meet in order to change a behavior; motivation, ability and trigger. The model can be useful for persuasive design as it gives an understanding on how to design for behavior change.

This means for a user to perform a desired behavior change, they have to be motivated, have the ability to do it and needs a trigger to perform it. Accordingly, to trigger a behavior change for something difficult to perform, thus something with low ability, the user will need a great motivation to succeed. As the illustration of the model suggest (*Figure 2.2*), the likeliness to perform behavior change increases with a high motivation or high ability. The figure also suggests relevant subcomponents for the three factors; core motivators, simplicity factors and behavior triggers.

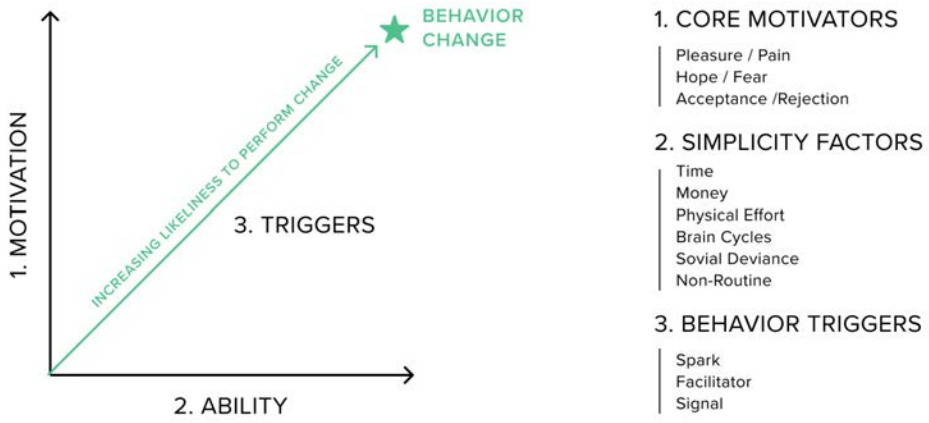

Figure 2.2. The Fogg Behavior Model.

3

Methodology

This chapter describes the applied methods for this thesis. The overarching strategy has been design-based research, further described in chapter 3.1. The design process has been visualized using the double-diamond framework, which can be seen in chapter 3.2. The double diamond framework describes the process of design in two phases. An overview of the process and applied methods can be seen in *Figure 3.1* below.

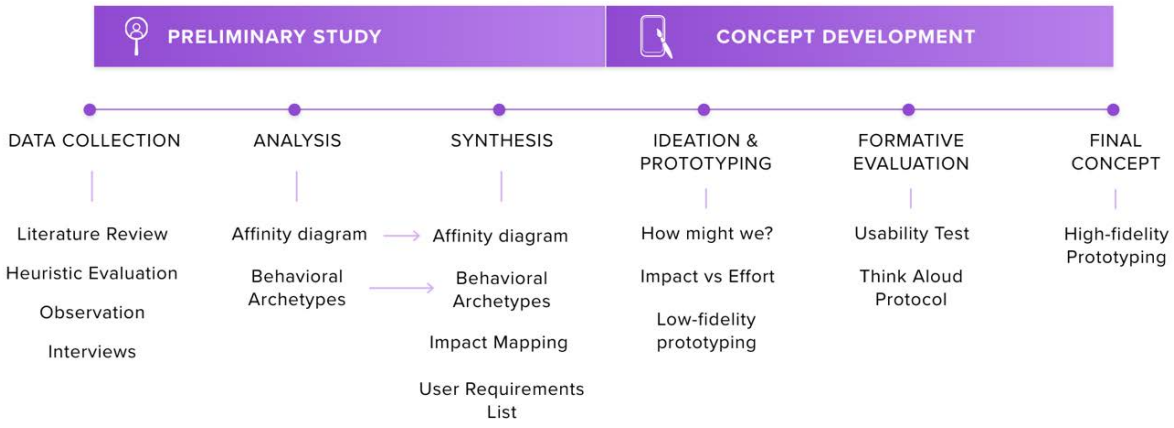

Figure 3.1. Overview of applied methods.

The first phase is the preliminary study, where data is collected to understand the research problem. In this phase emphasis is put on understanding the users and their situation. The second phase is the concept development where a solution to the problem is designed. This phase is typically iterative, ideating on how to fulfil the user needs and then evaluating the design for further improvement. The methods applied for the preliminary study of this project can be read in chapter 3.3, and the methods applied in the concept development phase can be read in chapter 3.4.

3.1 Design-Based Research

The research strategy for this project is founded on Design-based research (DBR). It is a type of methodology in research, referring to the process of developing solutions to problems, named interventions (Design-Based Research Collective, 2003). These interventions are then tested and evaluated for further improvement. Design-based research highlights thereby the importance of formative evaluation, by collecting data as the design is developed and refined. By this, it is an iterative process of designing, testing and evaluating for continuous enhancement.

Design-based research has its origins in learning sciences. Collins (1990) and Brown (1992) has been credited for proposing the methodology, which was by that date referred to as design-experiments in an educational environment. The idea was to educate by addressing complex problems in real contexts and using known and hypothetical design guidelines to test solutions. But also, to conduct assessment to enhance the learning environment and establish new principles for design.

The Design-Based Research Collective (2003) has proposed characteristics for a good design-based research, which for example includes ”development and research take place through continuous cycles of design, enactment, analysis, and redesign” and moreover, ”research on designs must lead to sharable theories that help communicate relevant implications to practitioners and other educational designers”.

One characteristic mentioned by The Design-Based Research Collective (2003), highlights the establishment of design guidelines. This is also mentioned by (2012) as follows “Designs evolve from and lead to the development of practical design principles, patterns, and/or grounded theorizing.” However, what the same authors also pinpoint is that these guidelines may not be appropriate to apply in all contexts - “These principles are not designed to create decontextualized principles or grand theories that function with equal effect in all contexts. Rather, design principles reflect the conditions in which they operate.” Accordingly, context is an important factor in this research strategy.

Challenges that may need to be addressed in this research methodology is objectivity, reliability and validity (Design-Based Research Collective, 2003). Design-based research may be applied in complex settings, and these factors are of importance for a scientifically valid result.

Moreover, planning the project and estimate time consumption may be another consideration. As Anderson and Shattuck (2012) put it, “The challenge of bounding the temporal scope of a DBR project is exacerbated by the requirement for multiple iterations.” As practicing design may be seen as a wicked problem, there is no stopping rule, and by this the intervention may continuously be improved. Thus, the planning needs to have a foundation with a clear goal and project scope, but still room for adaption as the process progress. As Wadsworth (2011) says in his book about doing research: “A research design guides initial actions but good research retains the capacity to respond as the inquiry unfolds.”

3.2 The Design Process

The process of design can be portrayed in many different ways. A key characteristic with the design process is that it is not linear, but iterative and explorative. Another fundamental aspect is that it should be user-centered, involving the users that will use the product, service or system in order to fulfil their needs. In the following section one model of the design process has been described - the Double-Diamond design process.

3.2.1 The Double-Diamond Design Process

The double-diamond is an acknowledge framework for visualizing the design process, originally developed by the British Design Council in 2004 (Design Council, 2019). There have been many adoptions of the double-diamond, highlighting different factors of the process. One interpretation of the double diamond framework adapted for this project can be seen in *Figure 3.2*. The process is divided in two overarching phases, visualized by the two diamonds, which is the preliminary study and concept development. The framework highlights four key steps – discover, define, design and deliver - and shows the diverging and converging phases of the process.

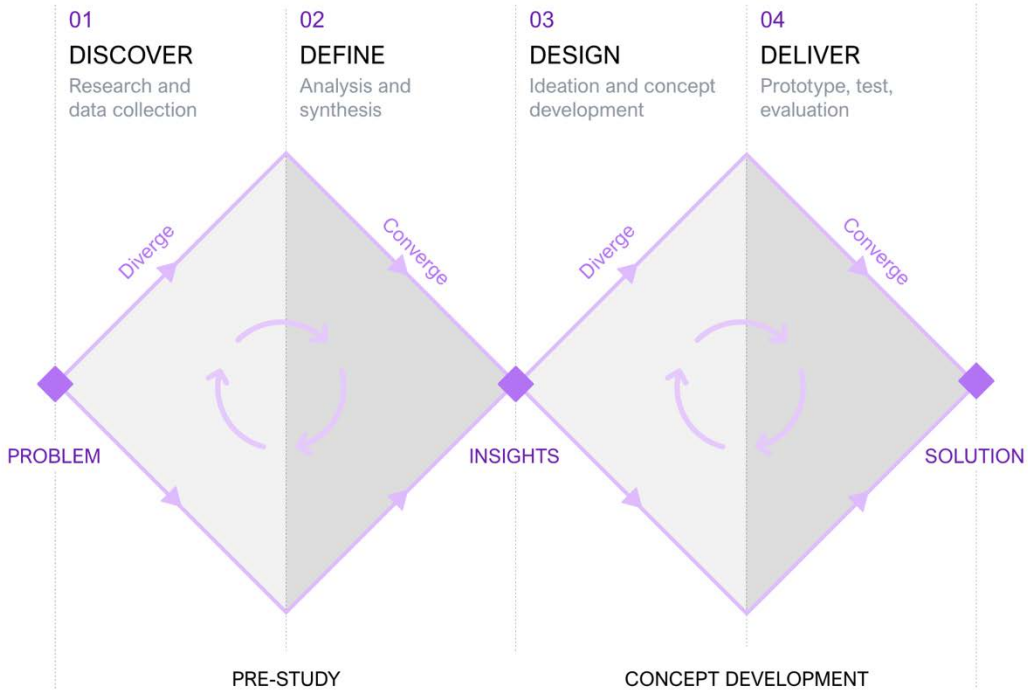

Figure 3.2. The Double Diamond Design Process.

The first step focus on understanding the problem and define the aim and scope of the project. Moreover, this is a phase of empathizing with users, to understand their needs and requirements. This means a diverging phase of collecting data and researching what the impact areas are to improve the user experience. The second step is a defining and converging phase where the data is analyzed to make a synthesis. The outcome of these two steps of the research phase is insights about the users and the problem to solve. In other words, what gives value and what is important factors in order to design things right.

The concept development starts with the third step, which is to design. Here one diverges to seek inspiration and information on how to design the solutions in order to meet the needs and requirements of the user. In this step, the goal is to explore the solution space in order to find the most valuable design. The fourth and last step in this process is to deliver the best possible design by prototyping, testing with users, and evaluate. However, it is important to consider that the design process is not a linear process, but an iterative process where these four steps may not be following each other in a chronological order.

3.3 Preliminary Study

The preliminary study encompasses methods for empathizing with users and collecting data, analyzing the gatherings, and finally visualizing and presenting the findings from the study. Thus, the preliminary study has been divided in three phases – data collection, analysis, and synthesis.

A consideration was made if the current interface of the app should act as a starting point in this study, and by this start with an extensive usability test and build the design process around improving the existing interface. But the students chose instead to put more effort on the preliminary study and first researching what the user needs were and then build the concept development on these findings, and by this not be too restricted by the previous design. This was also because the findings from the preliminary study was the main deliverable the bank requested, hence the behavior profiles and prioritized user needs in relation to impact areas for the credit card service. Because of this, the concept development could act as an inspiration for further improvements. So, for the preliminary study a heuristic evaluation was thought to be enough to understand the current situation for the customers, but still not be too restricted in the process of designing the interface.

3.3.1 Data Collection

For this project, the chosen methods for data gathering has been literature reviews to research the problem domain, a heuristic evaluation of the present interface in the app to understand the current status, an observational study with customer service and in-depth interviews with customers of the bank. In *Figure 3.3* below the four data collection methods has been illustrated, and the following chapter will encompass a description of these methods.

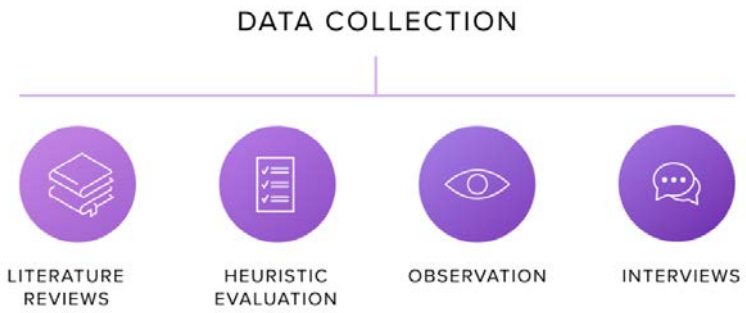

Figure 3.3. Methods for collecting data.

3.3.1.1 Literature Reviews

Literature reviews is a method to collect and summarize information from previous research. By this, published resources relevant for the given topic could be utilized to give a foundation for a design project (Booth, Colomb, Williams, Bizup, & Fitzgerald, 2016). Moreover, it is typically a fundamental part in academic papers, where the contemporary status within the research field is presented. However, not all information from the resources may be relevant, but the review should rather highlight important aspects and discuss the literature and draw conclusions in a converging way.

Design projects can benefit from researching information from various resources such as books, academic papers, websites and published design cases (Hanington & Martin, 2012). However, it is important to consider what resources to exploit, to make sure the data is reliable.

Literature reviews was utlized in the preliminary study to understand the current state-of-the-art within the problem domain. For this project, this included information regarding finance and credit cards to grasp what a credit card service exploit. This contributed to understand the situation for the customer. Moreover, design theory relevant for the project was summarized in order to pursue the project according to design methodology.

As argued by Hanington & Martin (2012), literature reviews are typically “one component of a larger research paper or project”. As a result, the findings from the literature reviews can be read in chapter 2, where relevant theory for the given topic has been summarized.

3.3.1.2 Heuristic Evaluation

A heuristic evaluation is a usability inspection method where one evaluates an interface according to an agreed-upon set of design principles, referred to as heuristics. The aim is to identify critical errors and usability problems in the interface. According to Nielsen (1994), the evaluators are called "heuristics" because they are “broad rules of thumb and not specific usability guidelines.” The method can be time and cost-effective since it does not demand participation from actual users, but can be practiced by, for example, members of the team.

There are established heuristics, rule of thumbs, one can use to evaluate an interface, like Jakob Nielsen and Rolf Molich usability heuristics (Nielsen & Molich, 1990). However, these can be adapted to be especially relevant for the intended user interface (Hanington & Martin, 2012). What is important here is to use heuristics that will support the design process in identifying usability problems that will obstruct the aimed user experience.

As described, heuristic evaluation is a method to assess the usability of an interface according to determined design principles. However, for this thesis, the method was put through by the two students and utilized in the data collection phase to understand the current status of the interface. As previously argued, this was done in favour for an extensive usability test to not be restricted by the previous design.

3.3.1.3 Observations

Observation is a data collection method – collect data through observing. Performing observations allows the researcher to study people, artifacts, events, behaviors and interactions in the natural environment and could thus bring a deeper understanding about them and the context (Williamson & Johanson, 2018).

There are various ways of how an observation could be executed – the technique for the study could either be structured or unstructured and be performed as a participant observation, fly-on-the-wall observation, field study or as a controlled observation.

Observation Techniques

A structured technique uses specific variables and has pre-defined material such as worksheets and checklists. While unstructured observation techniques are to observe with an open mind and has no pre-determined variables and objectives (Research methodology, 2019). Unstructured observations are usually used when the territory is new to the researcher and allows the researcher to search for situations that appears meaningful (Hanington & Martin, 2012). When not specifically knowing what will be observed, since the objective aren't clear, the researcher has a guiding set of questions that will be reconstructed during the study – the researcher is primarily observing and construct the questions based on what is being seen.

Participant Observation

A participant observation is an observation method where the researcher participates in the study and thus become a participant. It is an ethnographic method which means examine and sample real experiences of participants (Hanington & Martin, 2012). This result being able to get an emphatic understanding of the users and their life by experience the same situation as them.

Fly-on-the-wall Observation

A fly-on-the-wall observation imply the researcher not taking part of the study and are not involved with the activities and the people – the researcher is unobtrusive and not interfering during the study (Hanington & Martin, 2012). This method attempts to minimize influencing or bias people since the researcher is not engage with the participants. This could however lead to not connect empathically and any question that may arise would stay with the observer since not being able to probe or follow up with participants.

Field Study

Field study, also known as naturalistic observation, is an unstructured observation method that involves studying participants in natural surroundings (McLeod, 2015) – observing users as they work. It offers contextual data on people, situations, interactions and the surroundings. This method is usually used as a pilot study since the researcher normally do not know what to observe and is thus a great starting point to get a better understanding on what type of behaviors to focus and study further.

Controlled Observation

Controlled observations are usually carried out in a laboratory and is a structured observation method. It is a controlled and structured study since the researcher decides where and when it will take place and with what participants (McLeod, 2015). The researcher classifies the observed behaviors into the pre-defined material and are usually coded into numbers or letters to be able to describe the characteristics.

In this project, an observational study was followed through at the customer service department at the bank. This was to get a first encounter with the end user, and get a grasp on what their main troubles was with the credit card service and the interface of the app. During the observation, causal interviews with the agent at the customer service was followed through, to get information regarding their experiences on what the customer needs and troubles usually were.

3.3.1.4 In-depth Interviews

An interview is a method that can give insights about personal experiences, opinions, perceptions and attitudes of a user (Hanington & Martin, 2012). The interview can be structured, following a predetermined manuscript of questions. A structured interview typically has closed questions, meaning that there is a limited set of possible answers. Another approach is the unstructured interview, which follows a flexible conversational format which allows for detours. The questions asked are open-ended, giving the respondent the possibility to give a free-form answer. The unstructured approach is valuable for exploratory purposes, when the researcher does not know what type of answer they will get. It is however recommended to have some kind of guiding set of topics that the researcher hopes to address.

A semi-structured interview on the other hand, is a merge between structured and unstructured interviews and can be a protocol of both open-ended and closed questions. It is an approach where the researcher has a manuscript to follow but can choose to deviate from it and ask follow-up questions if the respondent touch upon an interesting conversational topic. In all cases, the researcher needs to be able to adapt and to be personally sensitive, while still being organized and responsible in adhering to the protocol of the session (Hanington & Martin, 2012).

For this thesis, in-depth interviews were the main data collection for the preliminary study. This was because interviews are a beneficial method for capturing insights about users and their motivation for having a credit card. The method was also thought to be beneficial because the plan was to map out behavioral archetypes of the target group and their needs. Moreover, the method was chosen for practical reasons, as it could be followed through by calling the participants remotely.

However, other methods were also considered as interviews only gives data on based on recall. Hence, this may not give the full picture as users may not always be able to verbalize what their actions are in relation to the product. As credit cards and the associated app are used in different environments during temporary events over a long period of time, methods such as diary studies was also considered. However, this would require more effort from

participants in the study, and it would take more time to put through. Thus, after consideration interviews were thought to be most suitable for this study and the project scope decided to be limited to this data collection.

3.3.2 Analysis

After the data collection, a converging phase of analyzing the data was followed through. The data was analyzed from two different perspectives, by summarizing the findings both from a user perspective where behavioral archetypes took form. But also, from a content perspective, where the information gathered where mapped out in different categories depending on its subject. The results from these methods was then used in the synthesis phase to visualize findings from the preliminary study.

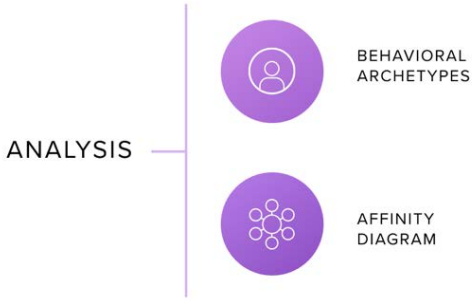

Figure 3.4. Methods for analysis.

3.3.2.1 Behavioral Archetypes

In user-centered design, it is of importance to empathize with users to tailor the experience according to their needs and goals. To understand the users of a design, one wants to know what a user does, how and why they do it. Behavioral archetypes is a method to conclude typical behavior patterns, which can be used in the team to strategically make decisions that serves the best interests of the users and makes the greatest impact for the business. Doneva (2017) defines the method as the following in an article on Medium: “The behavioural archetypes represent typical motivations, goals and general attitudes of the customers and also how these can change based on the quality of their experience with the brand over time.”. In other words, behavioral archetypes can be used to communicate the behavioral pattern of a user, but also their mindset and what emotional state they are in when interacting with the product and how this can be influenced.

Behavioral archetypes can be compared, but should not be mistaken for, the acknowledge method personas. Personas is a semi-fictional representation of a typical user and focus on who the user is (Farino, 2013). This means especially demographic data that can be utilized to define characteristics of market segments. However, as personas may the describe who a user is, behavioral archetypes were chosen as the method focus on what the user does and what the motivations are for their behaviors. Thus, this highlights how the users behave when interacting with a product, and because of this it is a useful tool for designing user experiences (Ben-Menachem, 2020). Therefore, demographic information and background about the user was excluded in favor for defining the user needs and behavior patterns regarding credit card services.

3.3.2.2 Affinity Diagram

Affinity diagrams is a method used to analyze and sort data based on similarity. The method is typically used with recorded data on post-its, that are put up on a wall in clusters to get an overview of the data collection. The method can be used by having predetermined titles, using a top-down approach where the data is sorted in the agreed groups. In exploratory studies, however, it would be recommended to use a bottom-up approach by searching for patterns and assign titles as the clusters of data take form (Hanington & Martin, 2012). Affinity diagramming can be used as a method for analyzing data from interviews, by grouping quotes in overarching themes and categories. It is also a beneficial method for grouping data from observational studies, and by this highlight important aspects and extract insights.

Affinity diagramming was utilized to map out the content of the data collection. To compare with behavioral archetypes where the data was analyzed from a user perspective to grasp the target group, this method was used to categorize the findings in different areas within the problem domain.

3.3.3 Synthesis

The insights gained in the preliminary study was summarized and visualized in a synthesis phase. By this, the analysis was a converging phase leading to concluding insights. Because of this, the results from analyzing the data by behavioral archetypes and affinity diagramming is one contribution to the synthesis. As these methods was described in the previous chapter about the analyzing phase, the description of these methods can be found there. Moreover, a user requirement's list was done to compile all user needs gathered. Finally, impact mapping® was used to visualize how the fulfilment of user needs could lead to the fulfilment of user and business goals.

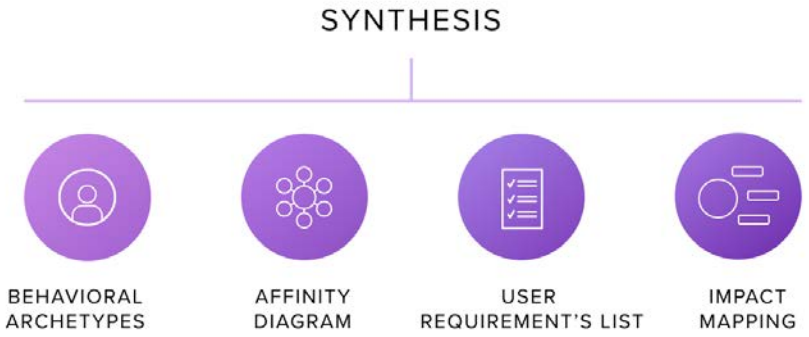

Figure 3.5. Methods for synthesis.

3.3.3.1 User Requirements List

A user requirements list compiles the user needs of a product. User requirements differ from system requirements, by being on a higher level of abstraction (Mehta, 2019). System requirements are more detailed, describing a precise function, while user requirements may be fulfilled by various functions. Business goals determine the aim with the product in terms of what the company or organization wants to achieve with the product. To break it down in a simple visualization, the hierarchy can be portrayed as the figure below shows (*Figure 3.6*).

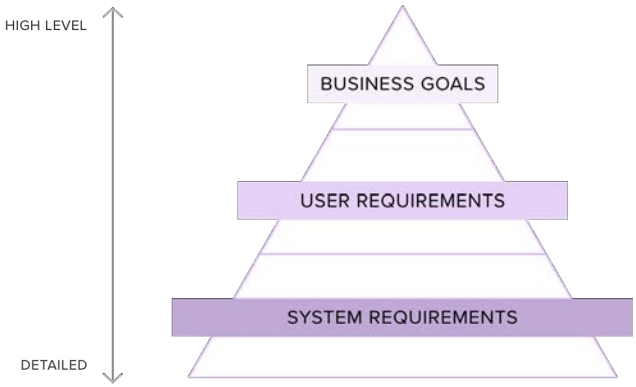

Figure 3.6. Categorizing requirements.

In this study, we have conducted user requirements – in other words user needs. Business requirements, thus the business goals, has been set together with the bank. We have not considered the system requirements in this study, as the focus has been on what user needs can give a good user experience and also how they can be contributing to the fulfilling of business goals with the product.

3.3.3.2 Impact Mapping®

Impact Mapping® (*Effektkarta*® in Swedish) is a methodology used for product development in IT-related projects (Ottersten & Balic, 2007). It is a method to explore, discuss and evaluate the impact of a product. Moreover, it is beneficial to make sure the solutions that are developed will solve actual user needs and also fulfill the business goals with the product. With an impact map, one can visualize the connections between desired impact, user needs and functions.

The impact map is constructed with three levels – impact, use and solution answering the questions why, how and what (Domingues, 2017). The first level focus on the purpose with product, hence what impact the product should have. Because of this, an aim should be formulated to set the goal with the project. Moreover, dimensions metrics is goals to measure the outcome and success of the project. The metrics is also a method to see if the design and outcome meets the desired impact. By this, one has concrete goals to fulfil, and metrics to see if these are met. The next level, usage, focus on users and their needs in relation to the product. Here, behavioral archetypes are defined to conclude behavior patterns of the users and prioritize user needs. Finally, the last level highlights what solutions could fulfil the user needs and the aim of the product. This is formulated in terms of capabilities, being the qualities of a solution and functions, which is requirements for functionality. An interpretation of the impact map can be seen in *Figure 3.7* below.

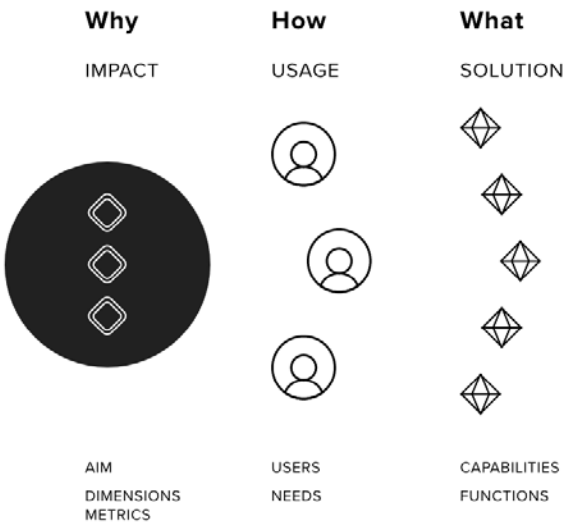

Figure 3.7. Illustration of an impact map.

For this project, the impact map was used as a tool for defining the aim with the product together with representatives of the bank. This was done to build consensus on what impact the project should have and what the goals were with the product. The defined behavioral archetypes were also utilized for this map, to prioritize user needs and highlight the user's motivations and behaviors in relation to the product. Moreover, the map was utilized to visualize the connections between desired impact, user needs and developed functions.

3.4 Concept Development

The concept development exhibits methods for designing an interface. This includes ideation methods for exploring possible solutions and prototyping methods for communicating a proposed design, which will vary in fidelity as the project progress. As mentioned previously, the design phase is iterative. Thus, concept development means going interchangeably between prototyping methods and formative evaluation to refine the design.

The methods will here be presented in the order they have been applied in the project, starting with the phase of ideating and low-fidelity prototyping. This was followed by an evaluation in form of a usability test. After the test a second iteration was done to ideate on how to improve the prototype further, and the results from this was the final prototype.

3.4.1 Ideation & Prototyping

The ideation phase started by rephrasing the gathered user requirements as questions of how we might fulfil these needs, to develop functions. Thereafter, an evaluation method was used to assess how much value the solutions gave in comparison to how much effort it would take to implement it. At last, low-fidelity prototyping was done by first doing paper prototypes and then sketch wireframes digitally.

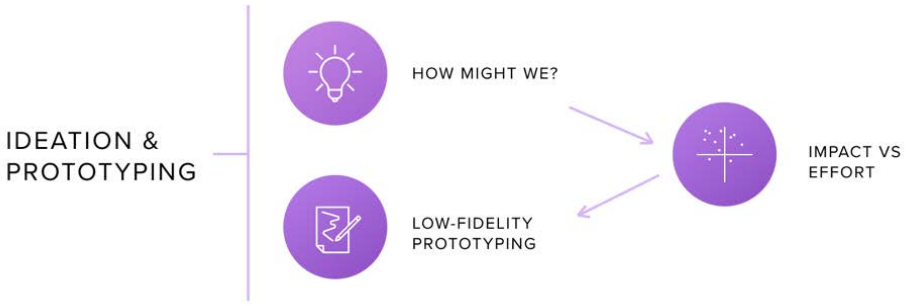

Figure 3.8. Methods used for ideation & prototyping.

3.4.1.1 How Might We?

How Might We is an ideation method where insights from user research is reframed as a question, and by this find opportunities for design (IDEO.org, 2020). In other words, this is a method for ideating on how to fulfil user needs and solve problem areas. This means reframing an insights statement by asking "How might we solve this problem?" or "How might we fulfil this user need?". The need or problem to be solved should not be to narrow; there should be a variety of design solutions that could solve the problem. However, it should not either be too broad to not be able to find designs that will fulfil the need. Thus, it is a balance to find the right abstraction level for the insight statements used as a basis for developing design ideas.

How Might We was chosen as the first ideation method in the concept development phase. This was because this method was thought to be applicable for the extracted user needs gathered during the preliminary study. Hence, this method could be used to ideate on what functions in a user interface could solve the collected problem areas.

3.4.1.2 Impact vs Effort

The method *Impact vs Effort* is an evolutionary matrix to compare the impact of a function, thus how much value it would give to the experience, versus the effort it would take to implement it (Gray, 2010). The method is carried out by placing the functions in the matrix, and by this one can prioritize which solutions to go further with. As the matrix in *Figure 3.9* shows, solutions with high impact and low effort will be placed in the upper left corner. Thus, these functions are prioritized to go further with, in comparison to functions in the lower right corner which would give a low impact and high effort to implement.

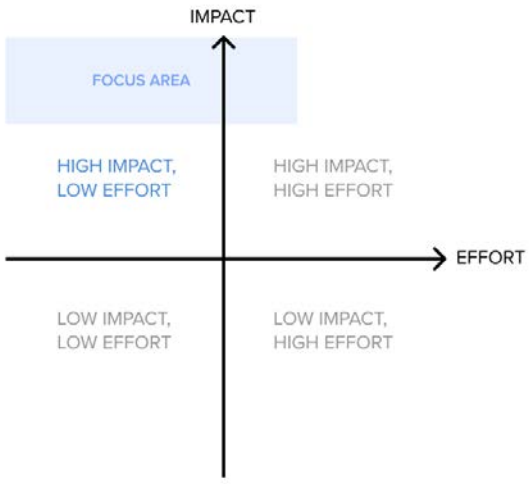

Figure 3.9. The impact vs effort matrix.

To estimate the impact, one could look at findings from user studies, to see how many and how important user needs one could be fulfilling with the proposed function. The impact is also based on how well the function meets the desired impact. To estimate the time and effort for implementation, one could involve designers and developers with previous experiences from similar tasks.

3.4.1.3 Low-fidelity Prototyping

A prototype is the first, or a preliminary version of an artefact. Prototyping is used in the design process to test, evaluate and iterate a concept for continuous improvement. A prototype could either be constructed as a low-fidelity prototype or a high-fidelity prototype. Hanington & Martin (2012) describes the method as follows: "Prototyping is the tangible creation of artifacts at various levels of resolution, for development and testing of ideas within design teams and with clients and users."

Paper Prototypes

Low-fidelity prototypes are commonly used early in the ideation process to test and evaluate concepts at an early stage (Hanington & Martin, 2012). The most common low-fidelity method in interface design is paper prototyping, which implies sketching screenshots on paper. These types of prototypes allow the designer to focus more on the ideation and content rather than technical parts and aesthetics (Esposito, 2018).

Brainwriting

To support the process of sketching paper prototypes, the brainstorming method brainwriting was used. Brainwriting is also known as the 6-3-5 method and is an ideation method where the participants sits by themselves at first and document three ideas for a chosen period of time. The numbers in the method refers to 6 participants who will write down 3 ideas on a piece of paper for 5 minutes. When the time is up the documents is passed on to the next participant, which means the ideas of the previous person will be present on the paper. The task for the next participant is to take these ideas further, to build new ideas based on the previous ones.

This is repeated for several periods until all papers has been sent round the table so that all participants have contributed. Then, the ideas are presented and discussed. Brainwriting makes it possible for each participant to explore their thoughts without the influence of others, which might contribute to a wider solution space. Moreover, as one is exhibited to the ideas of others gradually when the papers are passed on, this might trigger new ideas. This method may also contribute to the feeling of ownership of the group and not by individuals, as the ideas are built upon.

Wireframes

Low-fidelity prototyping can also be done by sketching wireframes digitally. Thus, the prototype will not be as detailed and refined, and can potentially be done in greyscale. The purpose of having prototypes in low fidelity is to be able to design and evaluate quickly, and by this make allowances for changes. These prototypes can preferably be used to get constructive feedback and may thus result in users feeling easier to give their true opinion and suggest changes, as the design may not seem as set as if the prototype was in high-fidelity.

3.4.2 Formative Evaluation

Evaluation methods are essential for improvement in concept development. There are mainly two types of evaluation - formative and summative (Joyce, 2019). Formative evaluation means assessing and testing the design as it takes form and is generally qualitative data on how to improve the design further. Summative evaluation, on the other hand, is mainly done as an aftermath with quantitative data which measures how the design performs. As Hartson & Pyla (2012) put it in their book “In simplest terms, formative evaluation helps you form the design and summative evaluation helps you sum up the design.”

For this project, the focus has been on formative evaluation during the iterative concept development phase. A usability test in combination with a think out loud protocol has been applied in the project (*Figure 3.10*).

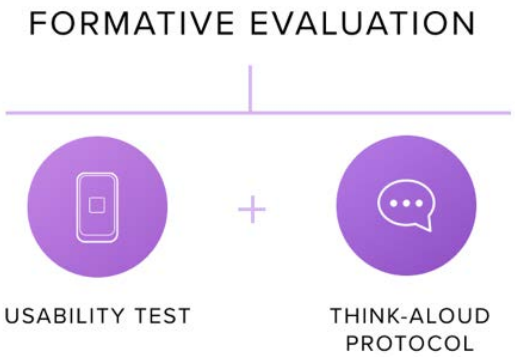

Figure 3.10. Methods used for Formative Evaluation.

3.4.2.1 Usability Test

A usability test is an evaluative method used in design practices where users are involved to find potential usability problems and opportunities for improvement in an interface (Hanington & Martin, 2012). Moreover, it is a useful method to learn about users and their preferences for user interface design. A test typically involves a facilitator, leading the session, and a participant, preferably from the target group of the product being tested. The participant should be representative of the target group since the results from the test should reflect insights that are relative for the users who will use the interface later on.

The test consists of a number of tasks the participant is asked to perform while the facilitator observes. The tasks performed should be representative activities of what a user usually does in the interface (Moran, 2019). This is why it is important that the user is representative for the target group, as the tasks should be something they comprehend, so the results of the test contribute to make the interface better for the intended users.

3.4.2.2 Think Aloud Protocol

The think-aloud protocol is a method used for testing with users, where the participant is asked to verbalize their thoughts as they complete a task (Hanington & Martin, 2012). This method is therefore useful to supplement usability testing, as this could help reveal feelings and thoughts of the participant.

There are two common techniques for Think Aloud Protocol; Concurrent Think-Aloud and Retrospective Think-Aloud (Hanington & Martin, 2012). The first procedure implies that the user has to think out loud during the completion of the task, while the second method suggest the user to express their thoughts after they have completed a task. For this project, the Concurrent Think-Aloud technique was used, as the complexity of the task was thought to be acceptable for managing to talk at the same time. Because of this, one could get instant feedback of what they are thinking when integrating with the interface.

3.4.3 Final Concept

During the concept development process the fidelity of the concept increased. Thus, the process first started with ideation and prototyping in low fidelity, to explore possible solutions and evaluate and iterate. At last, in the concluding phase of the project, the final concept was prototyped in high-fidelity (*Figure 3.11*).

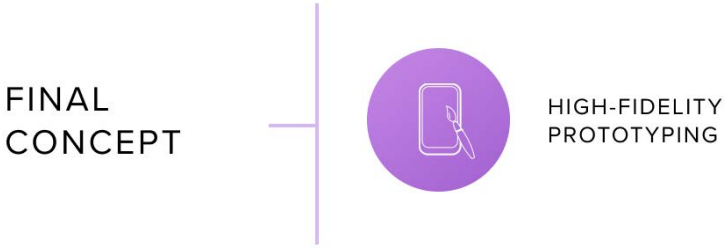

Figure 3.11. Method for final concept

3.4.3.1 High-fidelity Prototyping

High-fidelity prototypes are close to the final product, both when it comes to look and feel and sometimes in functionality too. They are computer based and are used later in the design process to be able to evaluate and receive feedback from clients and users where they give response regarding aesthetics, form, interaction and usability (Hanington & Martin, 2012). Since high-fidelity prototypes are close to the final product, these types of prototypes are more likely to collect true human performance data, thus participants are more likely to behave naturally when testing (Esposito, 2018).

A high-fidelity prototype of the interface was chosen as a medium for the final concept, as the purpose of this was to give inspiration on how to fulfil the user needs. Thus, the high fidelity of the concept could contribute by giving a more detailed visualization of the concept.

4

Execution of Preliminary Study

This chapter describes how the preliminary study was followed through. The process involved data collection, analyzing the data, and building synthesis to summarize the insights gained in the study.

4.1 Data Collection

The data collection consisted of a heuristic evaluation of the current interface, an observational study with customer service and in-depth interviews with customers of the bank. Moreover, literature reviews were done to research the problem domain. The results from the literature review is the theory and framework presented in chapter 2, and because of this the review is not further described in this chapter.

The main data collection method for the study was the interviews, while the observational study was used to get a first understanding of the users, and also for validation purposes. The heuristic evaluation served the purpose of giving an overview of the current status of the interface,

4.1.1 Heuristic Evaluation

Since the project was to improve the user experience of the bank's digital banking service – the app – with a limitation to the credit card, the preliminary study started with a heuristic evaluation. This in order to examine the existing interface and gain knowledge of the product and its possibilities of improvements.

The chosen heuristics for this evaluation where Jakob Nielsen and Rolf Molich 10 usability heuristics, which is shown in *Figure 4.1*. This since they were thought being applicable and suitable when evaluating the interface of the bank's app. We carried out the evaluation by going through each heuristic, on at a time, in a numerical order.

Figure 4.1. 10 Usability Heuristics according to Nielsen and Molich (Nielsen, 1994)

Visibility of system status was the first heuristic to examine. By examining this heuristic, it gave insight into if the app and its functions give appropriate feedback in order to know what actions that has been made. It gave awareness if the system provides its users with information about the current state – always keeping them informed about the state.

The second heuristic to investigate where *Match between the system and the real world*. This heuristic examines if the interface speaks the same language as the users – if it consists of familiar words, phrases and concepts. When examining this heuristic, it revealed if the app uses a familiar language that would generate a knowledge on how to interact with the service in a correct way and knowing what actions that are possible.

The next heuristic that was investigated was number 3 – *User control and freedom*. When examining this heuristic brought insights into if there were any usability problems regarding giving the user control when making mistakes, when the user for example choose another action than intended. This means that the system should support the user with an undo/exit in order to be able to easily leave the unwanted state.

The rest of Nielsen and Molich usability heuristics, number 4 – 10, was examined in the same way as the previous mentioned and gave a lot of insights on the current interface – the existing usability problems. The result of this evaluation can be read in chapter 5 – Result of preliminary study, section 5.1.1 Heuristic evaluation.

4.1.2 Observation with Customer Service

An observation was carried through at the customer service department of the bank. This in order to find out what questions and what problems customers usually call the customer service for – what they need help with. Observing alongside, and talking to, customer service gave us insights into problem areas that were useful for us since we then could use this knowledge to come up with questions to the in-depth interviews to find out more about those problem areas.

Since the field of banking and credit cards was new to us, we chose to carry through an unstructured observation technique. This as we wanted to observe with an open mind. To be able to identify why the customers are calling the customer service we chose to make a template on beforehand with a set of parameters to answer while observing the in-calling customers. Those parameters were: gender and the approximate age, the feeling they conveyed at the beginning of the conversation, why they were calling (their problem), the solution of their problem and the conveyed feeling when solving their problem (*Figure 4.2*).

Figure 4.2. Parameters to answer during the observation.

The observation was performed together with an agent at the customer service department – the team manager of contact center. He took on the role as a customer service agent and therefore handled the incoming calls. While he helped the in-calling customers could we, at two different occasions, observe and listen on the ongoing dialogues. The preset form of parameters where meanwhile filled in, which gave us an overview over why one usually chose to call the customer service.

During the in-calls could questions arise regarding the customers and their problems and were thus asked to the agent after each phone call. The questions were based on what was being heard.

To compile and analyze the observation study, an affinity diagram was executed. This can be read in the section 4.2.2.

4.1.3 In-depth Interviews

In-depths interviews were chosen as a method to explore what purpose customers want the credit card to fulfil. Hence, the interviews were thought to gain insights about personal experiences, behaviors, needs and attitudes about the credit card with focus on how to improve the digital services and most prominently, the app. Accordingly, the data collected could then be utilized to develop a concept for the app that will serve needs which makes the users reach their goals with the product.

Selection of Participants

The interviews were done with customers of the bank with two main target groups in focus. These were defined together with the bank's stakeholders and were; customers who had been registered during the previous year and new customers who recently applied for a credit card. The first selection of existing customers was the larger target group, while new customers was interviewed as a complement to give another perspective and highlight why and how they become customers, their goal with applying and expectations of the card. In total 22 interviews were conducted, where 17 interviews were with customers registered 2019 and 5 interviews with new customers from 2020 (*Figure 4.3*).

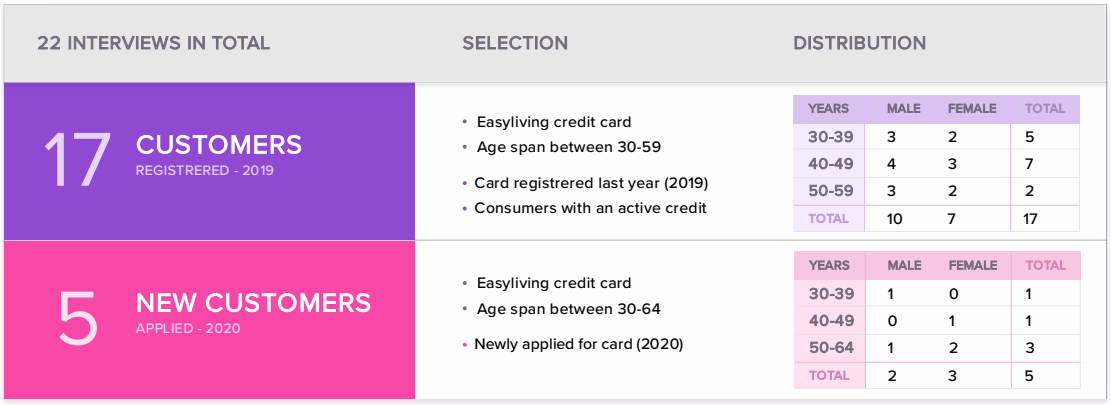

Figure 4.3. Selection of participants for interviews

The first selection was customers with an age span from 30-59 years who had an Easyliving credit card registered during last year (2019). To make sure they have used their card, and by this have information to give about their experience, a selection was made to target those who had an active credit. Moreover, existing customers had probably used the digital bank services such as the app before and could therefore describe expectations and needs based on their experiences. As these customers had applied for the card last year, they were thought to remember their intention with getting the credit card, and also be able to tell if they had used it for their first purpose or not.

The recruitment was done by sending out an e-mail to the customers within the delimitation, and they could then fill in a form to book a time slot for an interview (*Figure* 4.4). An incentive of a cinema ticket was offered as a gratitude for participating in the study. This may however have trigged a certain target group to participate in the study and could thus result in missing other target groups when defining behavioral archetypes. This is further discussed in chapter 8, discussion.

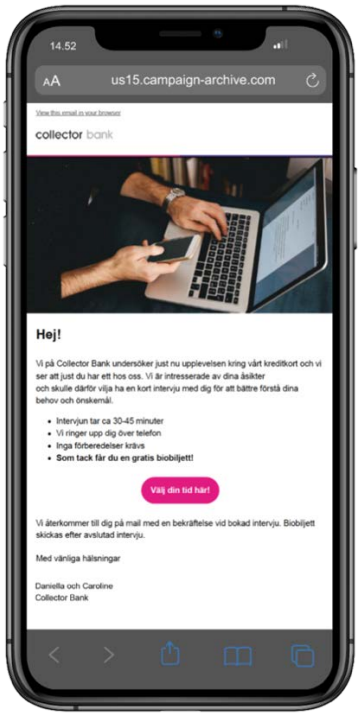

Figure 4.4. The e-mail sent out to customers to recruit participants

A second selection of interviewees was new customers who had just applied for the Easyliving credit card. The recruitment was done by having a widget with a link to the form where they could set up for an interview at the end of the application form on the website. New customers were targeted as these were thought to especially gain insights about their motivation for applying. As they just applied, they could bring knowledge about their underlying needs and expectations of the credit card and the digital services. Moreover, they were thought to gain insights about the application process and how and why they become customers.

The Interview Structure and Manuscript

The interviews were conducted with a semi-structured approach. A manuscript was utilized, where the questions was based both on insights from the observations and on data gathered from previous summations about recurrent questions to the customer service department. However, allowances were made for detours within the subject. The approach was to first ask open questions, such as “What do you think when you hear the word credit card?” or “Can you tell me about the last time you used your credit card?” and then ask follow-up questions. When needed, the conversation was guided with more specific questions related to the subject.

An overview of the manuscript with examples of questions can be seen in *Figure 4.5*. As the picture illustrates, the focus for existing customers was questions regarding their motivation and attitude towards credit card, what they used it for and how they used the digital platforms – with focus on the app. In comparison, the focus for new customers was how they become customers and the application process as well as their motivation and attitude towards credit card. As most of them had not use the credit card yet, these questions were left out. The full manuscript (in Swedish) can be seen in *Appendix A*.

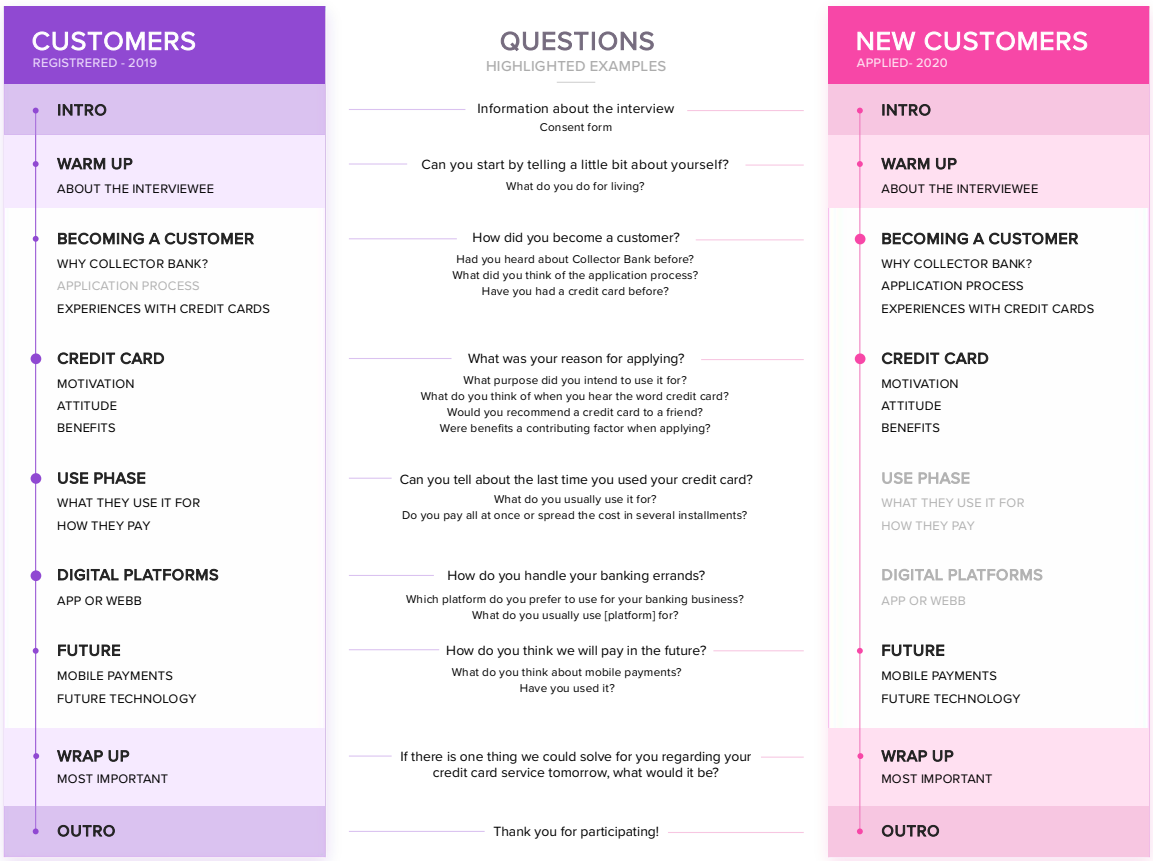

Figure 4.5. The manuscript with customers (left), new customers (right) and examples of questions asked (middle).

In general, the manuscript was set up as follows. First, the participant was presented with information regarding how the interview was going to be done, what it was going to be about and the purpose of the study. Moreover, they were asked to consent and also informed by their rights to cancel the interview anytime and also comforting them by informing them that there are no right or wrong answer, we were just interested in their previous experiences, thoughts and feelings.

When the introductory part was done, the recording was started. As a warmup, the participant was asked to tell a little bit about themselves – where they lived, what they did for living and so on. Then, the themes covered was how they found the bank and the application process. Moreover, what their motivation was for applying for a credit card and their thoughts and feelings about using a credit card. Another theme that was touched upon was what they used the credit card for, was it used as their primary card for all their purchases or for a specific category such as travel expenditures. We asked if they used any digital service such as the application or web, and what they used it for and what they thought about it. Moreover, we discussed what they thought about future payment solutions. At the end, we asked the question “If there is one thing we could solve for you regarding your credit card service tomorrow, what would that be?” and if they had anything else that we could bring with us in order to improve the user experience of the digital services.

The Setting

The interviews were held using a telephone and speaker. By this, both researchers of this thesis could participate in the conversation. One researcher was responsible for leading the conversation, whilst the other took notes and added to the conversation when needed. The interviewee was called at a booked time, and when the introductory information had been gone through the conversation was recorded in consent with the participant. The recording of the interview was done with a recording software during the call. In addition, as a backup, a recording was also done with another phone.

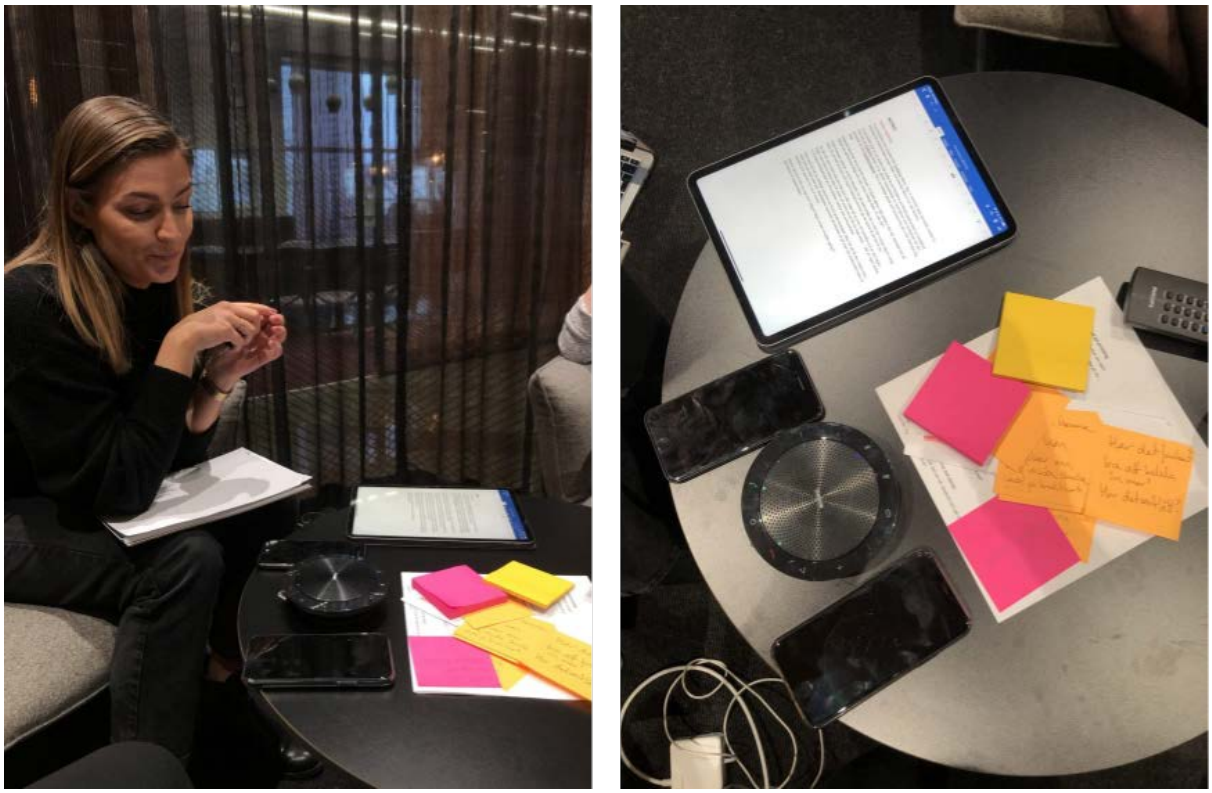

Figure 4.6. The setting of the interview

Collected Data

In conclusion, the data collected during the interview was the recorded audio files and notes taken during the interview. After the interview a discussion was held to talk about what insights the interview provided, and a list with thoughts that were top of mind were conducted. This lists from the discussion was used as a complement when analyzing the data for the behavioral archetypes. Later, the audio files were transcribed to text, as the textual data was going to be used in the analyze phase.

4.2 Analysis

After the data was collected, an analyzing phase was carried out to converge and build synthesis. Thus, this was a step in the process to summarize the findings from the preliminary study. The analysis was done by two different approaches. First, the data was analyzed from a user's perspective with the goal of identifying behavioral archetypes. This analysis was done by analyzing the interviews individually at first, to identify patterns of behavior and user needs for each interview. Then all interviews were analyzed to look for recurring patterns that could build up the behavioral archetypes. Second, an affinity diagram was conducted to map out themes in the data gathering. In other words, the collected data was then analyzed based on its content regardless of what individual the source of information come from. An overview of this can be seen in *Figure 4.7*, and the following section will describe the execution of these strategies in detail.

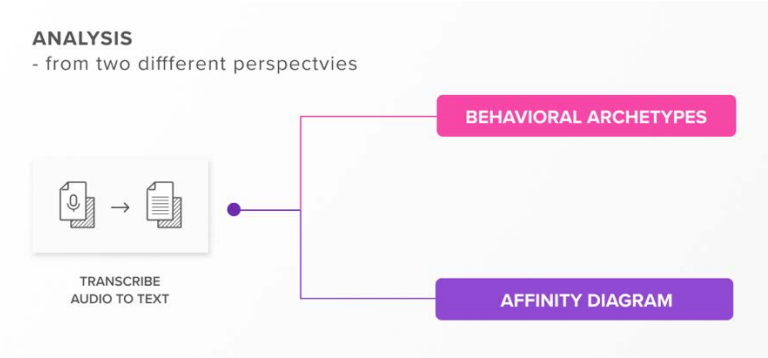

Figure 4.7. Analysis from two different perspectives

4.2.1 Behavioral Archetypes

To be able to identify users of the bank, what mindset, and attitudes they have towards the use of credit cards and their behavior related to the use, behavioral archetypes where chosen as a method. The outcome of this method was based on the in-depth interviews conducted with customers of the bank.

In order to carry out and develop behavioral archetypes, the recorded interviews were first transcribed into text and printed out (*Figure 4.8*). To then be able to identify and model behavior archetypes, the execution of this method started with defining different areas. This to only highlight relevant data. The areas received a color each to be able to highlight and mark out important quotes with these colors and thus make it easier and more accessible to summarize the interviews. The areas and their related color can be seen in the figure below (*Figure 4.9*).

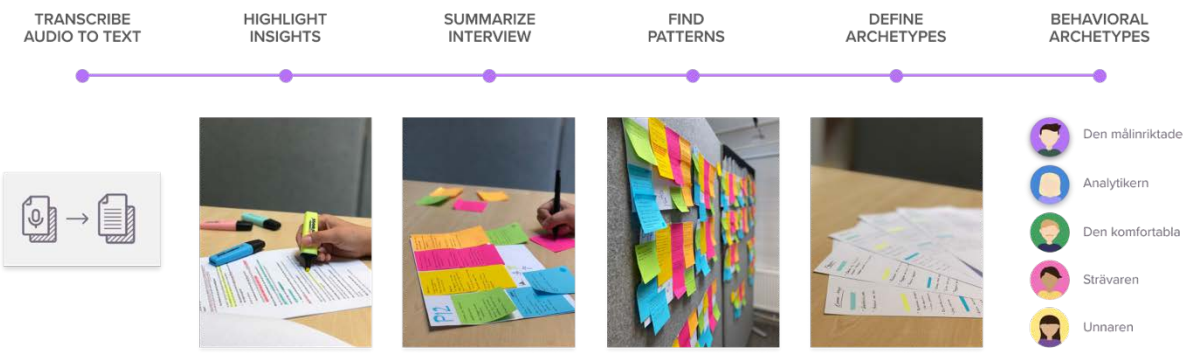

Figure 4.8. The process of defining behavioral archetypes.

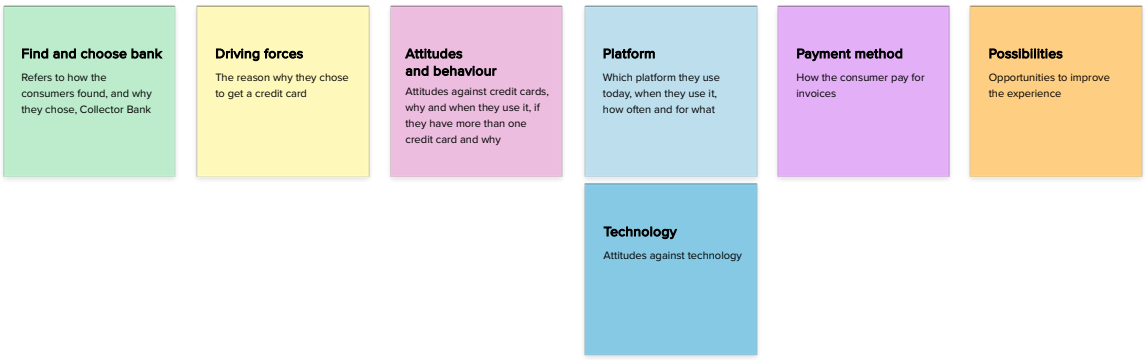

Figure 4.9. The areas and their color.

After going through all the interviews and highlighting the important data, they were summarized on colored post-it notes. Each post-it represented one area. The summaries were put up on a partition wall (*Figure 4.10*) and grouped after typical behaviors and other similarities to be able to define behavioral archetypes. It should be noted that this analysis was done with an exploratory approach, meaning that it was not decided on beforehand how many archetypes that should be identified, but the patterns were found gradually.

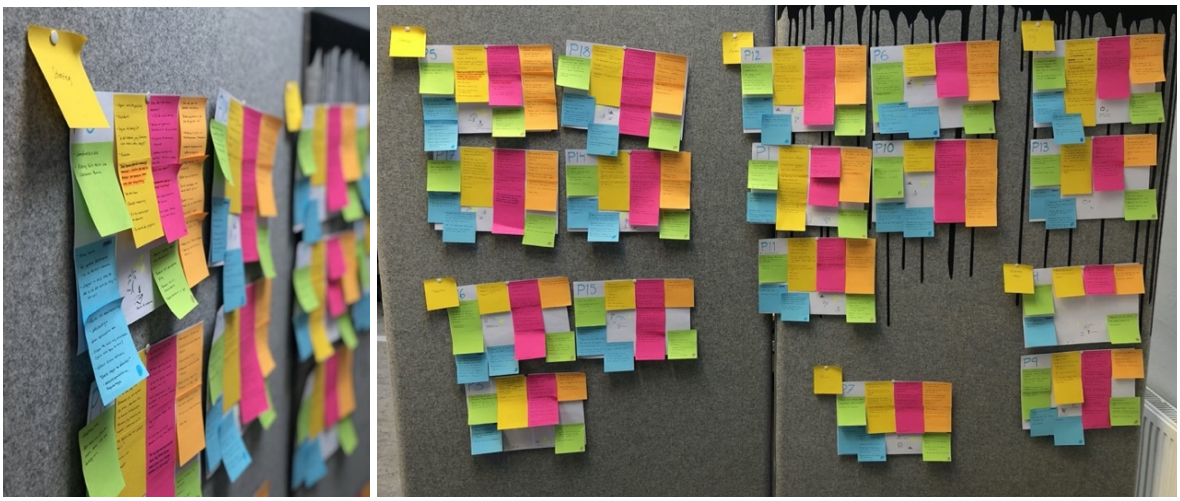

Figure 4.10. Summaries grouped after similarities.

4.2.2 Affinity Diagram – Observation with Customer Service

Affinity diagramming, also known as the KJ method, was done to categorize the data in relevant themes and by this highlight insights from the data collection in a systematic way. The categorization was done with a bottom up-approach, meaning the overarching categorizes was not predetermined, but patterns were found during the process. The first affinity diagram was done to highlight insights from the observation with customer service and in-calling customers.

The document with parameters, that was filled in during the observations, was printed and cut into pieces – one call on each note. All data were compiled and analyzed to be able to pinpoint the most significant on post-it notes (*Figure 4.11*). This to get a better overview of what the purpose of each phone call was and to facilitate the categorization. All notes were placed on a table along with different categories that emerged during the process. To have everything gathered and saved, the affinity chart was digitized (*Figure 4.11*).

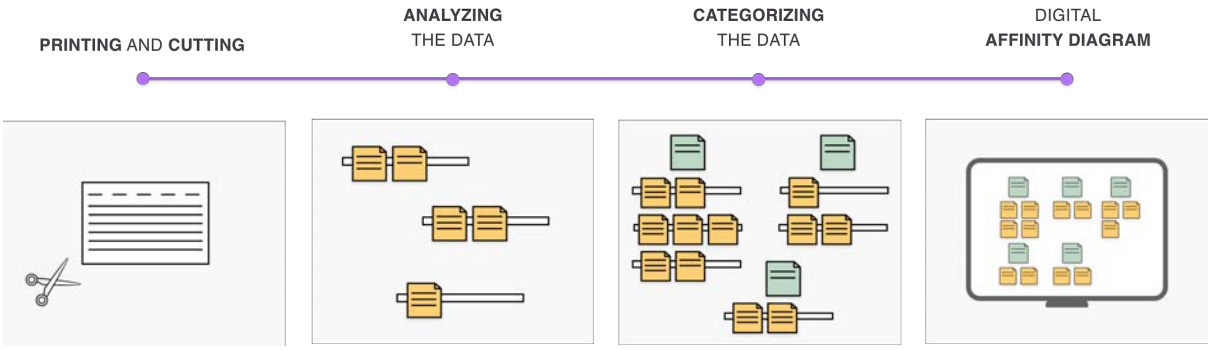

Figure 4.11. Overview of the affinity diagramming process on observation.

4.2.3 Affinity Diagram - Interviews

To highlight insights from the in-depths interviews where affinity diagramming chosen as a method. As for the affinity diagramming on observational data, were this done with a bottom-up approach to categorize the data.

The audio data from the interviews were transcribed into text, and then cut out in quotes. The paragraphs were then categorized based on the similarity of the insights. First, the data was categorized in overarching themes. Then, during a second iteration of categorization, each theme containing a pile of quotes was categorized in smaller groups of paragraphs and insights from each group was highlighted. This was then reviewed and relevant groups of data, highlighted insights and belonging quotes were put in a digital affinity diagram structured as a mind map. An overview of the process can be seen in *Figure 4.12*.

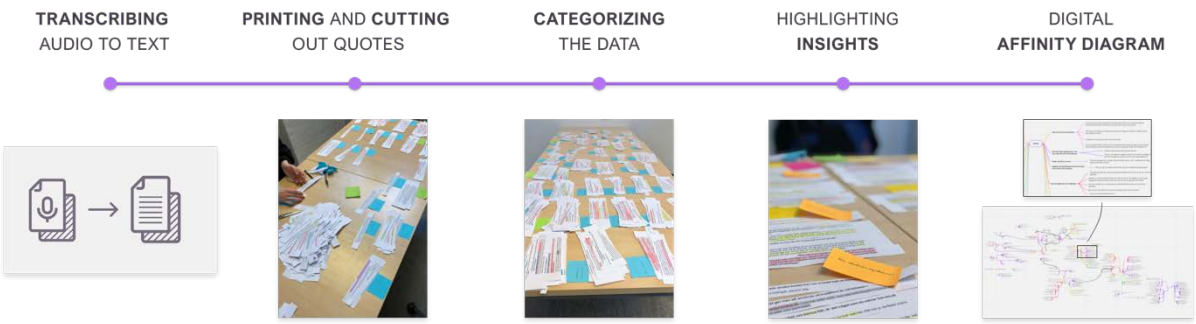

Figure 4.12. Overview of the affinity diagramming process

From the affinity diagram, three focus areas for the user experience was identified. This was recurring patterns that could be identified in the data, that the user needs could be categorized in. The connection between focus areas and the desired impact of the project was then defined using impact mapping, where the execution of this can be read in 4.3.1.

4.3 Synthesis

The synthesis was the phase of summarizing the findings from the preliminary study. This means the results from the analyzing phase - the affinity diagrams and the analysis leading up to the behavioral archetypes. The synthesis was also built with defining impact areas and business goals, as well as defining the user needs in a user requirements list. The impact areas were set in this synthesis phase as this were when we had enough knowledge to know what appropriate goals were to improve the user experience.

4.3.1 Impact Mapping – Impact & Focus areas

As described in the methodology chapter, impact mapping is a method to highlight connections between impact areas, user needs and design solutions. In the preliminary phase, the impact areas and user needs were defined, whereas the design solutions were developed during the concept development phase. This section will describe the execution of framing the desired impact, and the user needs will be described in the next chapter, as these were described in a user requirements list.

The impact areas were framed together with representatives of the bank during two remote workshops. This was to get a shared vision on what the goals were with the digital channels in relation to the credit card service. This was done by first phrasing a sentence concluding the aim with the service, in this case the digital channels for the credit card service. In other words, what impact should the product give. The aim was divided in three impact areas for fulfilling the desired aim. The impact areas were based on both the findings from the preliminary study, thus what the user needs were. Moreover, it was funded in what business goals and future strategy the bank had with the credit card service. Furthermore, impact metrics for how the goals could be measured was set. This was done by discussing which methods could be utilized to measure the goals, and also what metrics the bank had access to.

As the goals framed with the bank was business-oriented, three focus areas were formulated to set the aim with this particular project and highlight what factors should be considered for the concept development of the app interface. The focus areas were founded in the analysis and defined when categorizing the user needs, as these three themes was recurring.

The defining of impact areas composed the first level of an impact map, including the aim and desired impact for the business. A final impact map, visualizing the connections between impact areas, user needs and the concepts was produced after the concept development phase, and can be seen in chapter 7.4.

4.3.2 User Requirements list

A user requirements list was done to compile the collected user needs from the preliminary study. The needs were extracted from the affinity diagrams, by going through the diagram category by category and identifying what needs the collected data described. The identified needs were formulated and written down on sticky notes and placed next to the corresponding category of data (*Figure 4.13*).

Figure 4.13. Extracting needs from the affinity diagram of the interviews

The affinity diagram developed from the results of the interviews was the main source of information, but the affinity diagram based on the observation with customer service was also used to supplement the requirements list. This was done in a similar way, by extracting needs from the affinity diagram based on the observation. Moreover, the insights gained from the interviews with the customer service personnel was used to identify user needs. To supplement this, the bank shared a document with common questions about credit cards asked to the customer support. This was also used to add to the list of user needs.

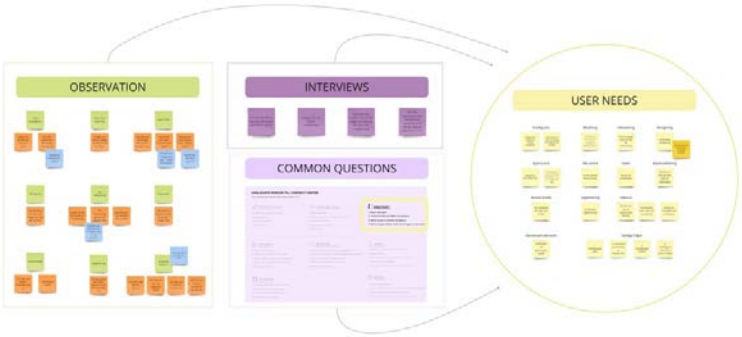

Figure 4.14. Extracting needs from the affinity diagram of observational study

The needs on sticky notes was then extracted and categorized in groups. The groups had one overarching need or goal with a high abstraction level. The hierarchy of needs was then systematically placed and color coded, where the overall need had a purple sticky not and as the need was more defined and concrete the sticky note was colored yellow, green, blue and lastly pink. The pink note could even be a formulated solution to a need. An overview of how the needs were organized vertically, together with the needs categorized in clusters can be seen in *Figure 4.15*.

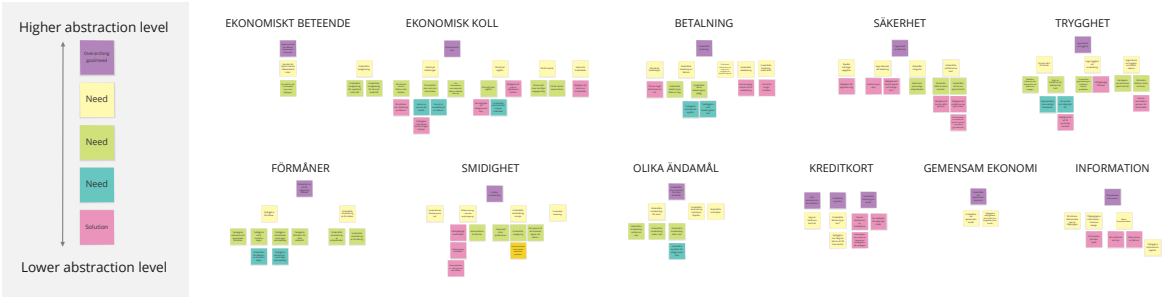

Figure 4.15. The extracted needs was categorized

The needs were then re-formulated with a title describing the overarching need for each category, and the user needs of that category was written in a list below (*Figure 4.16*).

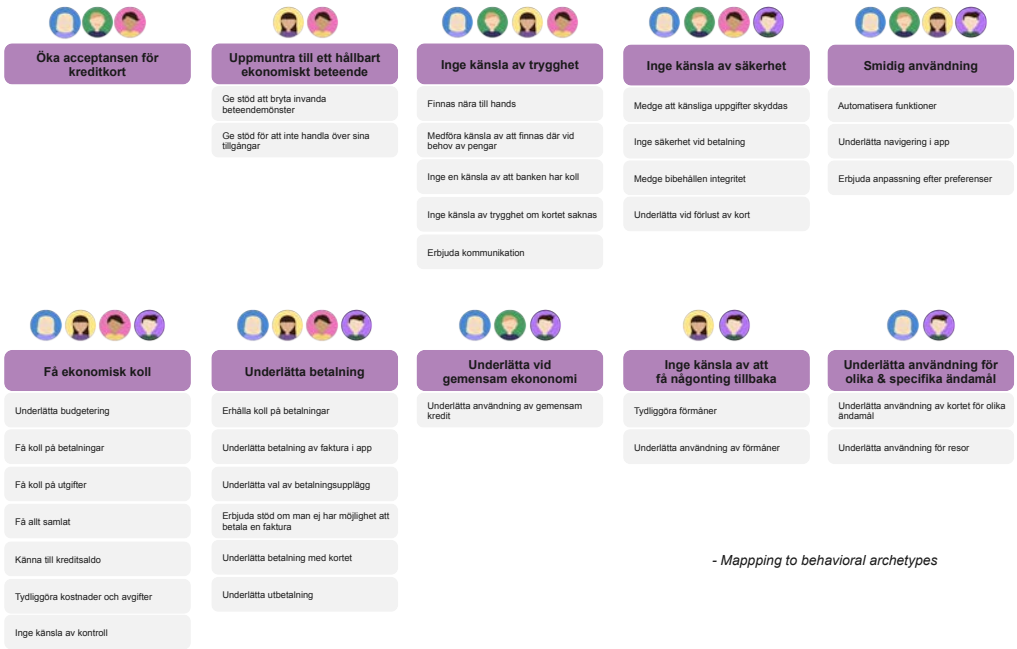

Figure 4.16. User requirements list: First overview

A more specific list of needs of each behavioral archetype was then concluded, where the needs were sorted individually by importance for each archetype. A template of how this list was structured can be seen in *Figure 4.17*.

Figure 4.17. User requirements of the behavioral archetypes.

Finally, a concluded list of all identified user needs was produced (*Figure 4.18*). The needs were categorized in three different categories, highlighting three overarching focus areas for the experience. The focus areas were based on the findings from the data collection, highlighting three important factors for the experience, which the needs were divided into. The needs were then mapped to which behavioral archetypes had each need, which was used as an indicator for prioritizing. Moreover, the needs were evaluated towards the impact areas, to see what needs could meet which impact goals.

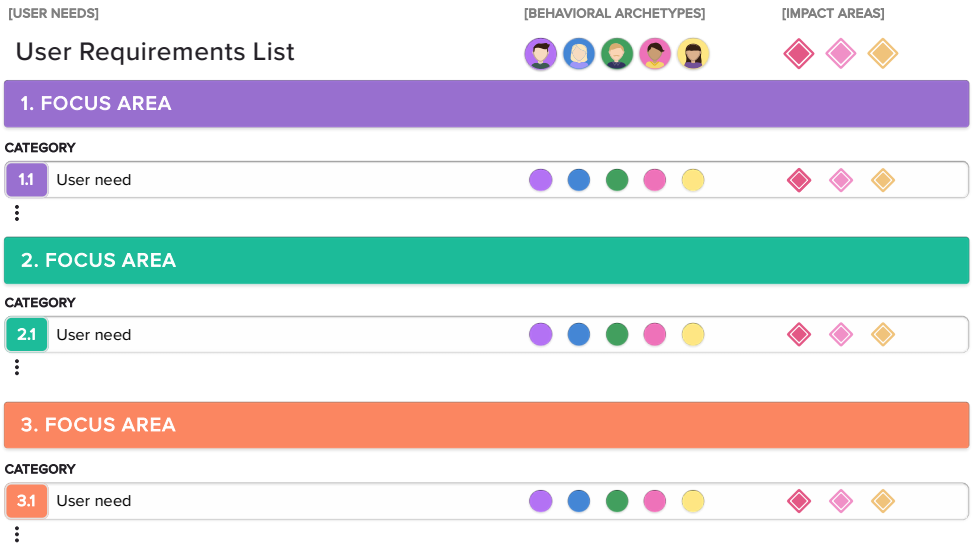

Figure 4.18. Structure of the User Requirements list.

The user needs documented in the user requirements list was then utilized in the concept development phase, to ideate on solutions to fulfil the user needs. Moreover, this was utilized for diverging, by being able to prioritize ideas. This was done by looking at what user needs the functions fulfilled, and accordingly what behavioral archetypes and impact areas could be met.

5

Results of Preliminary Study

This chapter will outlay the results of the preliminary study. The results are divided in the phases of data collection, analysis, and synthesis with a description of the outcome from each method. The findings from the preliminary study, and by this the summarized results of the preliminary study for the project, is concluded in the synthesis.

5.1 Results of Data collection

The results of the data collection are the gathered information from the heuristic evaluation of the current interface, the observation with the customer service department of the bank and the in-depth interviews with customers of the bank. As mentioned previously in the paper, a literature study of the problem domain has also been conducted, and the results from this has been presented as a theoretical framework in Chapter 2. However, the heuristic evaluation, observation and interviews will be presented in the following chapter.

5.1.1 Heuristic Evaluation

As mentioned in the section of examination of preliminary study, the heuristic evaluation gave us the first insights into the usability of the current interface. Since the project had a limitation to the credit card and its services where only the views that are connected to the credit card studied and evaluated. These views where both the login page (nr 1), the home page (nr 2), the credit card view (nr 3), the view of invoices (nr 4) and the chatbot view (nr 5), see *Figure 5.1*.

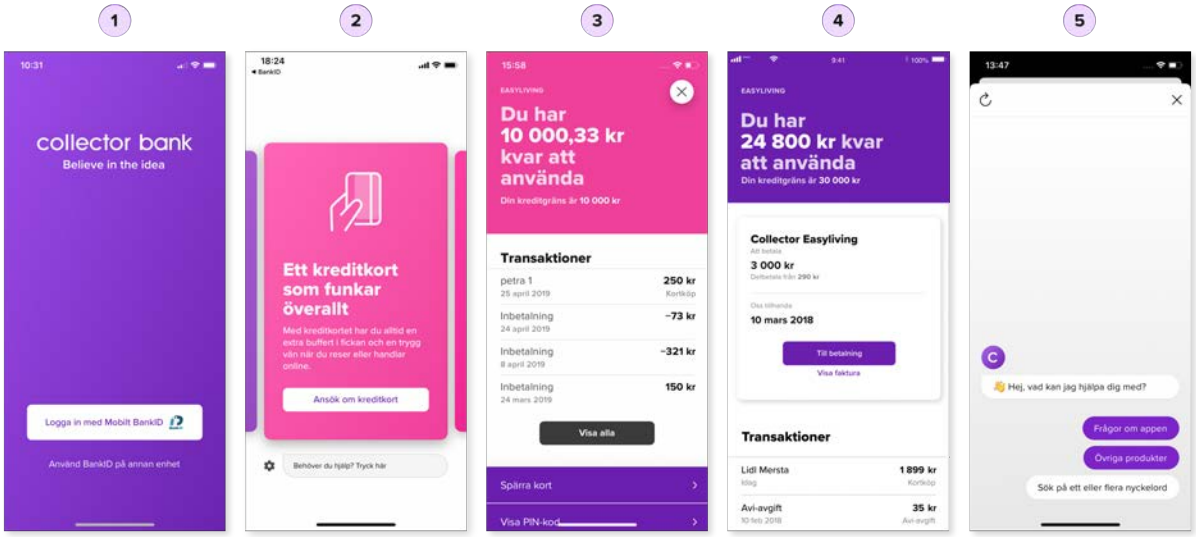

Figure 5.1. Heuristic evaluation mainly done on these five views.

When performing the heuristic evaluation with the established usability heuristics by Nielsen and Molich (1994), where several usability problems identified. However, functions that met the heuristics were also revealed and where thus along to the idea generation phase in order to inspire the new concept.

1 – Visibility of System Status

The first heuristic to examine was visibility of system status. This heuristic investigates whether the system gives the user feedback on their actions and giving the feedback within a reasonable time (Harley, 2018). Visibility of system status is about the importance of communication – the importance of giving information about the current state of the system. This in order to provide the user with a feeling of being in control when interacting with the system. The importance of feedback and giving it within a reasonable time is something Norman also emphasizes in his book *The design of everyday things* (2013). Norman implies that feedback should be provided immediately in order to not confuse the user. The feedback should however not be too vague or outrageous since it can lead to irritation instead of helping the user.

When interacting with the interface, a user needs to know if the interaction, for example pressing a button, was successful (Harley, 2018). This is done by giving the user feedback on his actions. When evaluating the banks current interface of the app it showed that the interface usually provides the user with appropriate feedback. It gives immediate feedback when pressing buttons by both changing colors and navigating the user to another window/view (*Figure 5.2*).

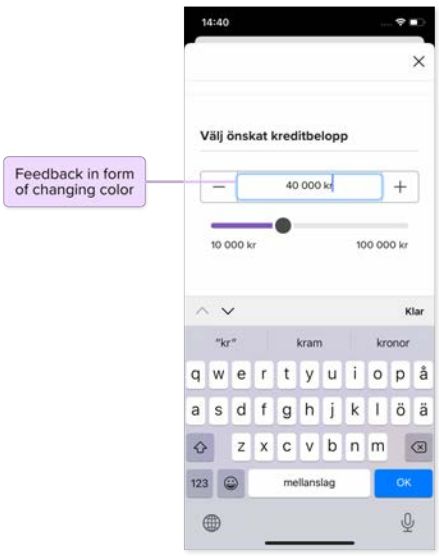

Figure 5.2. Feedback in form of changing color when pressing the button.

Feedback is given when a user entering the view of "Do you need help", here also known as the chatbot view. An animation of the company logo is indicating that the page is loading (*Figure 5.3*). This type of animation contributes to knowing what is going on. When writing in the search field will the user receive suggestions on things to search for, even when only typing the first letter, which is also a type of feedback on the user's actions.

Figure 5.3. The animation of the bank's company logo

Feedback should also be provided to show where the user currently is in the interface. This is also something that usually occurs in the current interface (*Figure 5.4*), but is, however, not fulfilled for all views. An example of a view that is not provided with this type of feedback is the chatbot view (*Figure 5.5*).

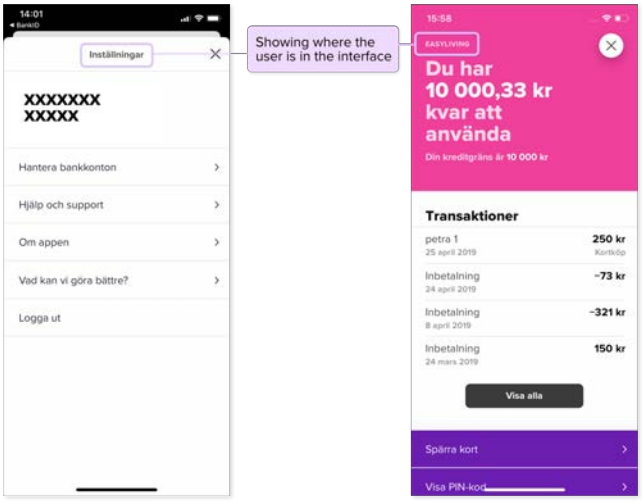

Figure 5.4. Feedback on where the user is in the interface.

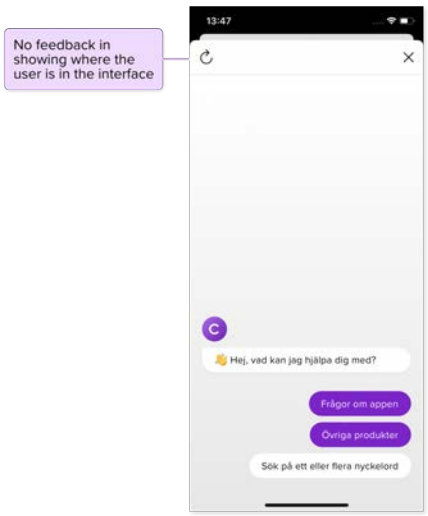

Figure 5.5. The chatbot view, not provided with feedback on where the user is in the interface.

2 – Match between System and the real World

Match between system and the real world is the second heuristic from Nielsen and Molich 10 established usability heuristics (Nielsen, 1994) 10 rules of thumbs, to examine. It examines if the system speaks the users' language. This means that the system should use familiar words, phrases, and concepts instead of system-oriented terms (Kaley, 2018). Not being able to understand the site will create uncertainty and may thus cause users to leave the site and go elsewhere to complete their tasks.

When examining this heuristic, you also check if the information appears in a natural and logical order, since the interface and its information should follow real-world conventions. According to Anna Kaley (2018) do human beings find comfort in familiarity and is why this heuristic is so important.

The first usability problem to notice when examining this heuristic was the gear symbol – it was ambiguous. This button, see *Figure 5.6*, takes the user to a new window where the user expects to come to the page of settings. This since a gear symbol usually implies settings. Instead, will this button bring users to a menu where they can see their connected accounts, get information about the app, get help and support by giving the user the opportunity to either call or email the customer service, being able to give feedback and to sign out from the app. There is nothing about settings for the app or the account which indicates that there is a mismatch between the system and the real world.

Figure 5.6. This symbol does not imply settings – a mismatch between the system and the real world.

Where there is a match in this interface is the use of familiar language. The current interface provides the user with easy and concrete words which helps to understand the meaning and what, for example, a specific button implies. When it comes to the transactions are these presented in a logical order – last transactions at the top – which is also a match between the system and the real world (*Figure 5.7*). This because the information appears in a logical order and is familiar to the users since it looks like other internet banking services and their transactions.

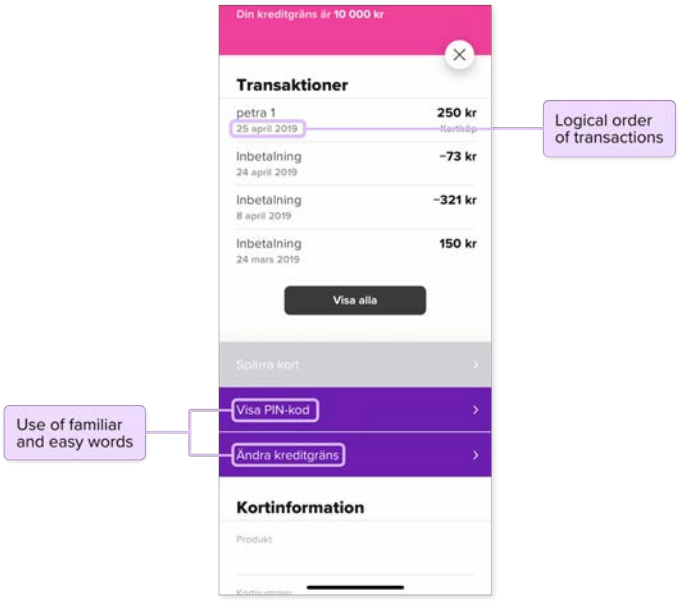

Figure 5.7. The use of familiar words and logical order of information.

3 – User Control and Freedom

This heuristic highlights the importance of allowing the user to be in control of the interaction. This means that the system should support the user when making mistakes with undo and redo or other clearly marked exits. It is especially important when it comes to mobile screens and touchscreens since accidental taps are common (Harley, 2018). It should be easy to leave the unwanted state if the user has, for example, made a slip when navigating through the interface. Clearly marked emergency exits and undo and redo buttons will foster a sense of freedom to the user. The user will be more confident and not afraid of clicking on a link or press a button if he is aware of how to go backward and leave an unwanted state.

If looking at the credit card view, there exists a clearly marked exit button (*Figure 5.8*).This will make the user aware of the possibility to go back to the previous page, the home page. Each view in the current interface has this feature which indicates that the interface meets the third heuristic – user control & freedom. The user can, in the credit card view, manage the card and thus being able to block the card, view the pin code, and change the limit of credits. When pressing "block the card", a pop-up window will arise, which allows the user to either continue the process of blocking the credit card or cancel the process (*Figure 5.8*). This provides the user to have the ability to control his action and thus have the opportunity to either continue or cancel the process.

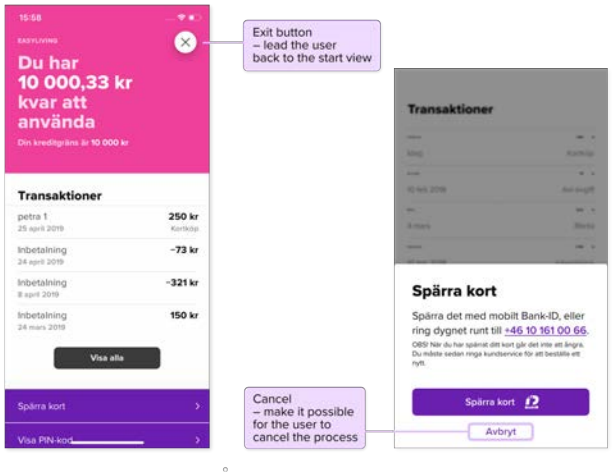

Figure 5.8. Two examples of clearly marked exits

4 – Consistency and Standards

The fourth heuristic focus on keeping consistency and using standards in a user interface. Graphic elements and terminology used in a user interface should refer to the same thing through the whole site (Moran, 2019). There is both internal and external consistency to maintain within this heuristic where internal consistency refers that similar components should function similarly. External consistency implies consistency outside products – maintain consistency between different products. Established UI conventions should be followed in order to not confuse the user. The user has existing expectations on how different elements should work and should thus follow the conventions and use familiar elements to not increase the cognitive workload.

When it comes to consistency and standards within the current interface are there both elements that follow conventions and those elements that go against it. When, for example, entering the chatbot there is a button to press in order to type a search word. As this does not looks like a typical button to press, and has the same color as the chatbot (*Figure 5.9*), makes this element ambiguous – it is difficult to understand what actions to make in order to complete the task. A search field usually has a loupe which indicates that it is a search field and has a describing text in another color than the rest – commonly grey. Since the text on this button is in the same color and font size as the chatbot complicates what this is supposed to indicate even more.

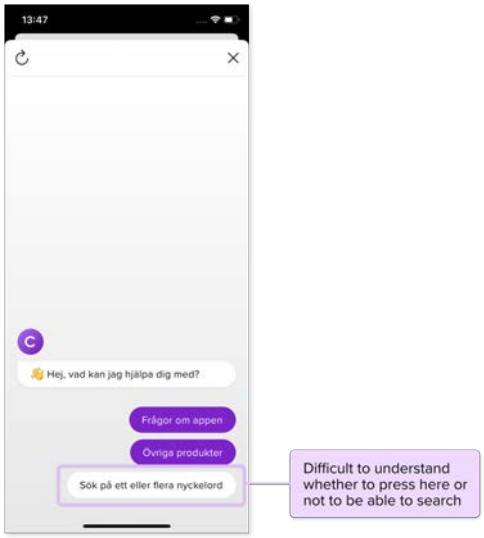

Figure 5.9. Consistency and standards, cognitive workload when not using conventions

The view of settings has a *help- and support* button where the user could get help by easily contact the customer service through the app. Either by phone or through sending an email (*Figure 5.10*). But when entering another view, for example, the credit card view, will the user, at the bottom of this view, have the opportunity to contact the bank directly. This without having to go through a help-and support button (*Figure 5.10*). Thus, in order to maintain consistency should these options be available in a *help- and support* button as well.

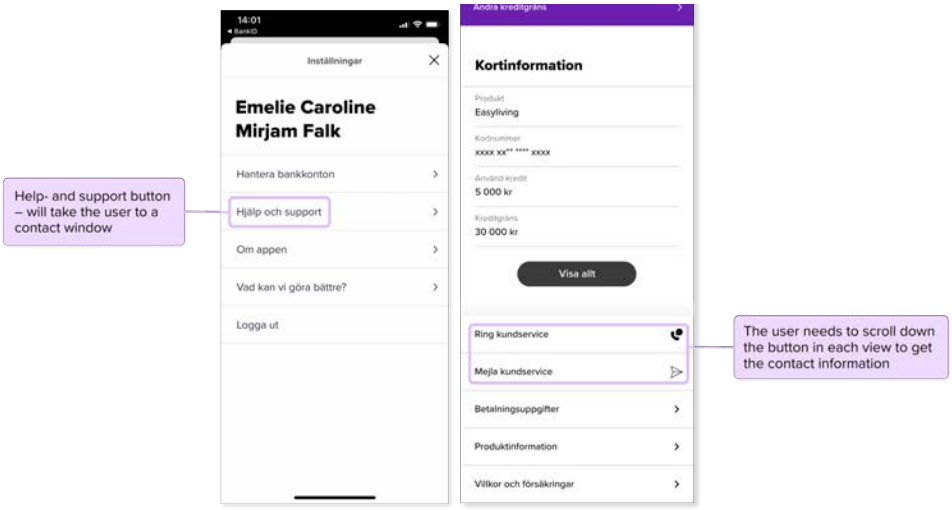

Figure 5.10. Not providing consistency

However, does consistency and standards exist within the user interface as well. For example, are all existing exit buttons placed at the top right corner and has the same style in form of having a black cross on a white background (*Figure 5.11*).

Figure 5.11. Exit buttons at the top right corner – consistency through the user interface.

5 – Error Prevention

Error prevention is the heuristic that focuses on designing a user interface that will guide the user to take the right path – prevent the user from making errors. According to Norman (2013) are errors divided into two classifications: Slips and mistakes. These two are further divided into classes – two within slips, action-based slips, and memory-lapse and three within the classifications of mistakes, rule-based, knowledge-based and memory-lapse mistakes. Slips are made by accident, and usually when not paying attention to the action and the task. A slip occurs when the user intends to perform one action but ends up doing another one. Mistakes, on the other hand, are conscious errors. It occurs when the user has a goal that are inappropriate for completing the task (Laubheimer, 2015). Linked to design do mistakes usually occur when an interface is not following mental models. This because the user will form a goal based on experiences that are not appropriate for the task.

In the chatbot window, the user can search for keywords and thus get help, both when it comes to the app itself and with the products of the bank, like the credit card, loans, invoices etc. Based on mental models for different chat forums, like messenger and WhatsApp, are you able to scroll downwards in order to see previous conversations. But this action is not possible in the chatbot window in the current interface. To be able to see pervious searches, the user must press on the latest search that has become gray (Figure 5.12). This can lead the user to making a mistake if he would scroll in this view. This because scrolling downwards will instead close the chatbot view and force the user to redo the whole process – to start over. Thus, to prevent errors, the closing feature could be limited to the exit at the top right corner.

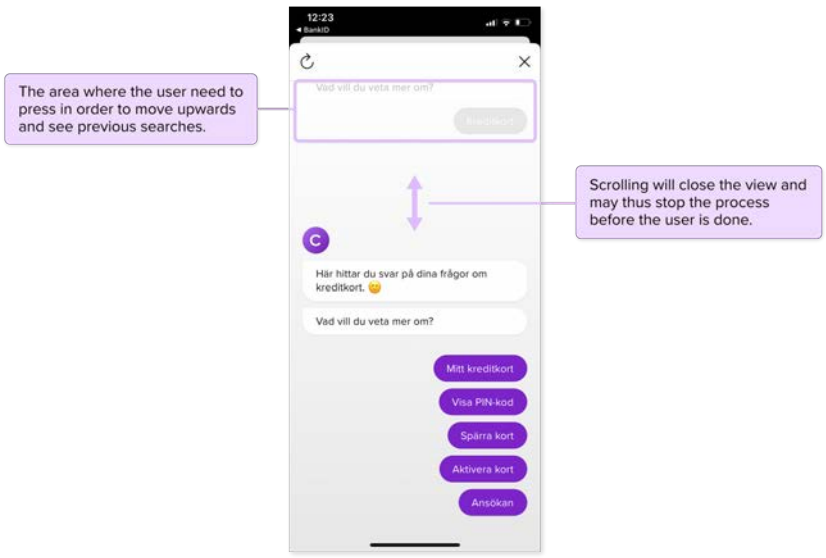

Figure 5.12. The user is not able to scroll in the chatbot view

Otherwise, the interface is designed to minimize the risks of errors. When the user, for example, is paying for an invoice in the app, is identification a mandatory task in order to approve the payment (*Figure 5.13*). This action could thus lead the user to be more aware of what he is doing and thus prevent making mistakes. Another similar prevention is when blocking the credit card. The user must then identify himself to be able to continue the process of blocking the card.

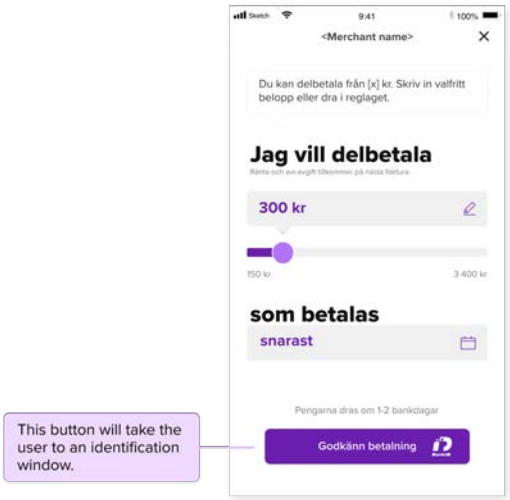

Figure 5.13. Preventing errors by providing with mandatory tasks, like the need of identification.

6 – Recognition rather than Recall

Recognition rather than recall is the sixth heuristic and imply the importance of making objects, actions, and options visible to minimize the user's memory load. It advises to advocate recognition over recall in user interfaces. This because recognition includes more cues that will help the memory retrieval and thus give the user help in remembering information (Budiu, 2014).

When looking at the current user interface has each card, each engagement, different colors (*Figure 5.14*). When entering these views, the colors are kept. Together with headings do these cues promote the user with help and could thus recognize where he is in the user interface.

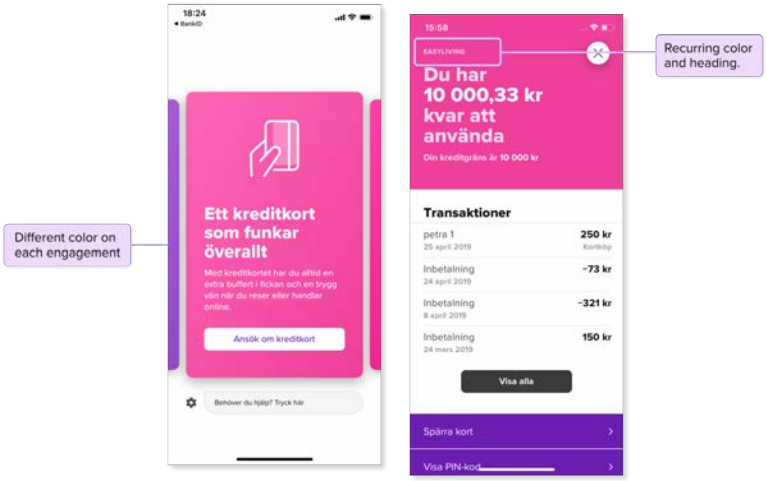

Figure 5.14. Easy to recognize the location with recurring color and heading.

A good feature that is implemented in the current user interface is the type ahead function when searching for keywords in the chatbot. When the user starts to type in the search field, choices on complete terms are presented (*Figure 5.15*). Cooper states in his book *About Face – The Essentials of Interaction* Design (2014) that this feature is a successful innovation since it increases the chances to enter a search term that is more likely to give a meaningful result set.

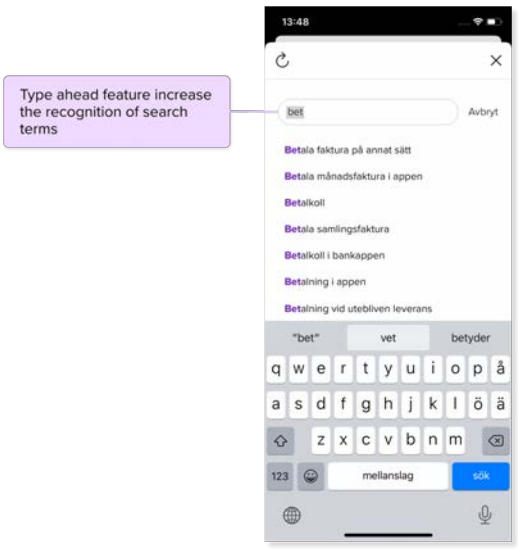

Figure 5.15. Type ahead feature.

7 – Flexibility and Efficiency of Use

The seventh out of the ten usability heuristics promote the importance of cater for both experienced and inexperienced users. The user interface should be efficient and flexible for experts but at the same time friendly to new users (Kane, 2019). The interface should thus be provided with accelerators and customization. Accelerators are options or actions that speeds up the interaction and are usually known by experts, while customization refers to tailoring the interface to the user's preferences. To accomplish a well-balanced user interface is Cooper (2014) promoting the process of inflection, meaning "organizing it to minimize typical navigation within the interface. In practice, this means placing the most frequently desired functions and controls in the most immediate and convenient locations."

Within the current user interface are there several opportunities to contact customer service at the bank. The user does not need to return- or be in a particular view to be able to contact them through the app – it is available in several views. This can thus be seen as being flexible and efficient for the user. However, the only way to enter the chatbot is through the home page which decreases the efficiency. Moreover, in the views of engagements, such as the credit card view or the view for invoices, the user must scroll down the bottom to get the contact possibilities (*Figure 5.16*). It would therefore be more efficient to have a fixed, constantly visible, symbol that are accessible in every view.

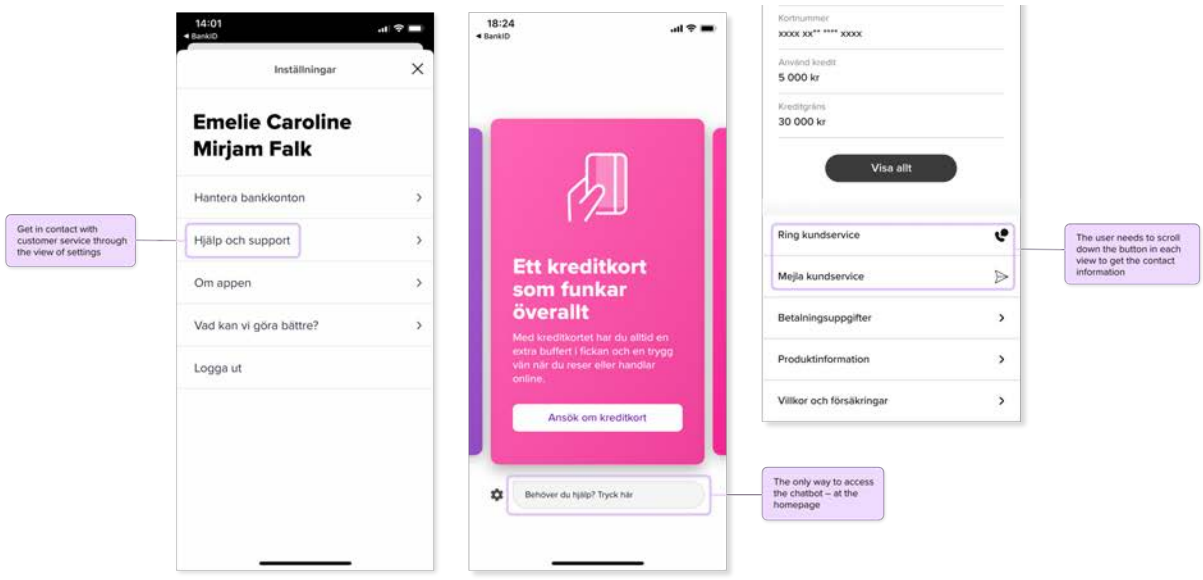

Figure 5.16. Different possibilities to get in contact with customer service at the bank

An accelerator that exist is the possibility to scroll down in order to close a view instead of pressing the cross that exist in each top right corner (*Figure 5.17*). This action may thus be more efficient for those who are used to this function – the experts.

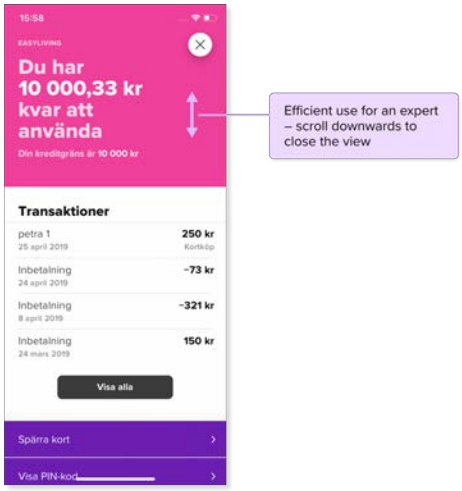

Figure 5.17. Scroll downwards to close a view instead of pressing the exit-button

8 – Aesthetic and Minimalist Design

This heuristic promotes an aesthetic and minimalist design, meaning keeping the content and visuals focused on the essentials. Anything that users have to process, text-content, visual elements and animations, could, according to Nielsen Norman Group (NN group) be counted as signals and noises. Noises are irrelevant displayed information for the current need and signals are relevant and useful information – information that the user want and looking for when using the interface (Chen, 2018). A high signal-to-noise ratio is therefore the key when developing user interfaces. However, the difference between signal and noise can be ambiguous since a signal to someone could be noise to another. To achieve a high signal-to-noise ratio the content needs to be reviewed. All provided text on each view should be relevant and important for at least some of the users, where the most relevant elements should have a high visual weight. This to create visual hierarchy to make it easier for user to see what information that is relevant and not in order to complete the task.

The app of the bank is today very simple and only contains the essential for its purpose – no unnecessary information is provided. The home page only contains of visual elements – the engagements at the bank, seen as cards (*Figure 5.18*). These cards expose the most relevant information in form of residual amount of credits, number of invoices and loans and how much savings they have. This information has visual hierarchy since the font is both larger and bolder than the rest of the text, indicating that this information is more important than the other. Having this information easily accessible was something that emerged through the interviews with users of the bank, since the most common task was to check their credit balance.

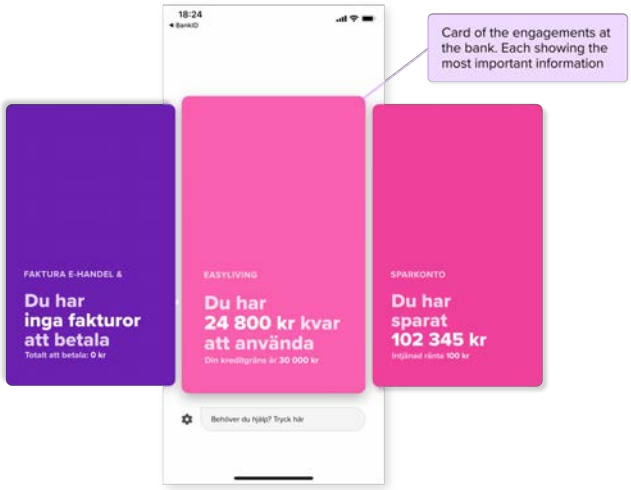

Figure 5.18. Few visual elements at the homepage

Another example that the interface of the app uses visual hierarchy is that important buttons are in contrasting color relative to the elements around them. The button to get to the payment of a certain invoice stands out in a purple color, which also the button to approve the payment, block the credit card and show the pin code are in (*Figure 5.19*). In the view for the credit card, the user can see their transactions. At first glance, the user can only see their last four purchases, but beneath these is a button which manage the user to see all their transactions (*Figure 5.20*). This button is also in a contrasting color. Thus, this interface indicates that the bank strives for a minimalist design.

However, this could be improved if, for example, the information for the credit card (*Figure 5.21*) would be transferred to another window (linked with a button). This because it was considered to be unnecessary since the same information is located both at the top of the view and on the card that can be seen at the homepage (*Figure 5.18*).

Figure 5.19. Contrasting colors on different buttons.

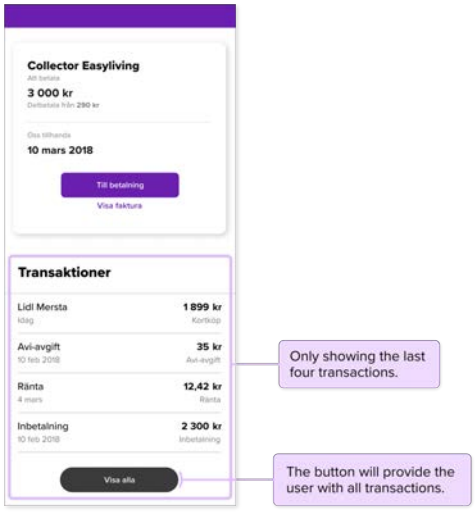

Figure 5.20. Provide the user with the last four transactions – minimalistic impression.

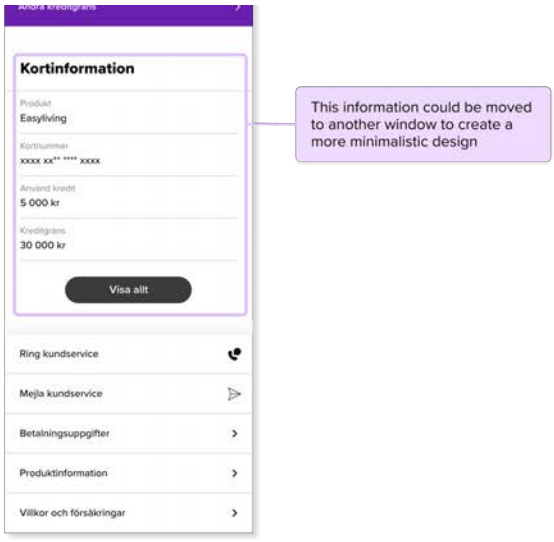

Figure 5.21. Move the information regarding the card to create a more minimalistic impression.

9 – Help Users Recognize, Diagnose, and Recover from Errors

This ninth heuristic, help users recognize, diagnose, and recover from errors, advocate the importance of dealing with errors. The interface should communicate when an error has occurred, tell the user what the problem is and how to fix the problem (Moran, 2019). Providing the user with an error message, the message must be expressed in a plain language (Nielsen, 1994).

During the heuristic evaluation, when the current user interface was examined, two errors occurred. One indicated that it was a technical error while the other indicated that mobile where not connected to the internet (*Figure 5.22*). The user received clear messages but got no explanation if the problem could be solved or how to solve it. However, when typing in wrong keyword or one that does not match the content, the interface provides the user with examples on how to proceed in order to get the answer on their question (*Figure 5.22*). This indicates that the current interface should in some way be improved when it comes to giving the user the help to recognize, diagnose and recover from errors.

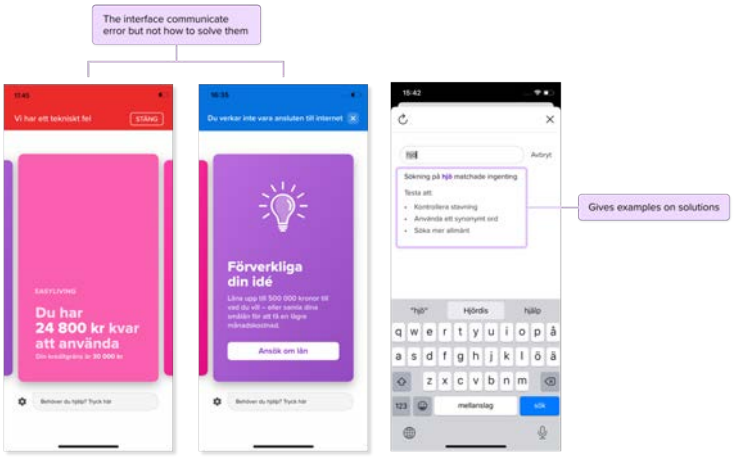

Figure 5.22. Help users recognize, diagnose, and recover from errors

10 – Help and Documentation

Help and documentation is the tenth heuristic and indicate the importance of supporting the user when needed. Help and documentation can be through onboarding pages, walkthroughs, popovers, videos, chatbots, web chats etc. (Rosala, 2019). However, it is important that help documentation is focused on the user's task in order to be as helpful and efficient as possible. There should not be documentation everywhere and should thus be provided where users might require help when performing a task and just with necessary information.

If the user needs help with queries about the app or the bank's other products and engagements, the chatbot is available at the home page. As mentioned in the section of heuristic number 6 - recognition rather than recall, does the chatbot have a type ahead feature which provide various suggestions and thus ease the search and makes it more efficient to get help. If not finding the requested help, the user both have the possibility to either call or email customer service.

Something that did not emerge during this evaluation was whether the current interface offered new users an onboarding process. After talking to employees at the bank, it emerged that such a process does exist. Nevertheless, we didn't investigate these pages, it's difficult to say how well they meet this heuristic.

5.1.2 Observation with Customer Service

The observation with customer service were conducted at two occasions and resulted in an initial understanding of why consumers usually choose to contact customer service. The data collected from this study, and thus the result, were the templet based on answers from customers and notes from the interview with the employee.

These insights were brought along to the analysis phase where an affinity diagram was made in order to find patterns and thus find customer's needs and requirements.

5.1.3 In-depth Interviews

The in-depth interviews were held with 22 participants in total. The participants were customers of the bank, where 17 had applied for a credit card the previous year 2019, and 5 had just recently applied for a card in February 2020. The data collected from the interviews were the recorded audio files, which was then transcribed into text. Hence, the results from the in-depth interviews were the audio and text files with the 22 customers of the bank (*Figure 5.23*). The resulting transcripts were then used in the analyze phase for identifying behavioral archetypes and highlighting and categorizing insights in an affinity diagram.

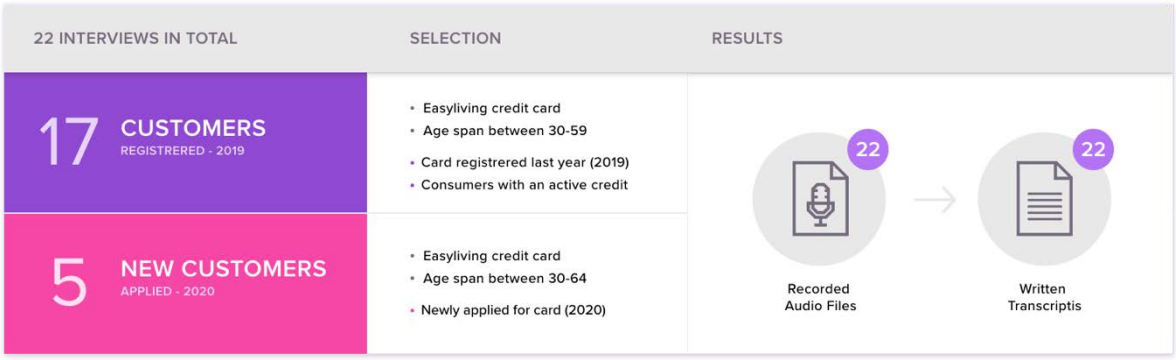

Figure 5.23. Results from interviews

5.2 Results of Analysis

The results from the analysis will be presented in the synthesis, as the analyzing phase was a step in the process of summarizing the findings from the preliminary study.

5.3 Results of Synthesis

In this section, the results of the synthesis phase of the preliminary study will be presented. This includes the descriptions of the five identified behavioral archetypes and the results from the affinity diagrams. Moreover, the definition of the desired impact and focus areas was defined. Finally, a user requirements list was concluded.

5.3.1 Behavioral Archetypes

As mentioned in the execution of behavioral archetypes did this method result in five different target groups: The Deal Seeker, The Analyst, The Comfortable, The Endeavor and The Spontaneous.

The Deal Seeker

The Deal Seeker is the customer who is looking for the best deal (*Figure 5.24*). They are constantly in search of credit cards with the best benefits and have multiple cards since they believe that no card it the most optimal. *The Deal Seeker* uses credit cards as their primary card and sees it only as a payment method – a payment method where one can get something back. Since they pay for everything at the same time, interest is not an important factor when choosing a credit card.

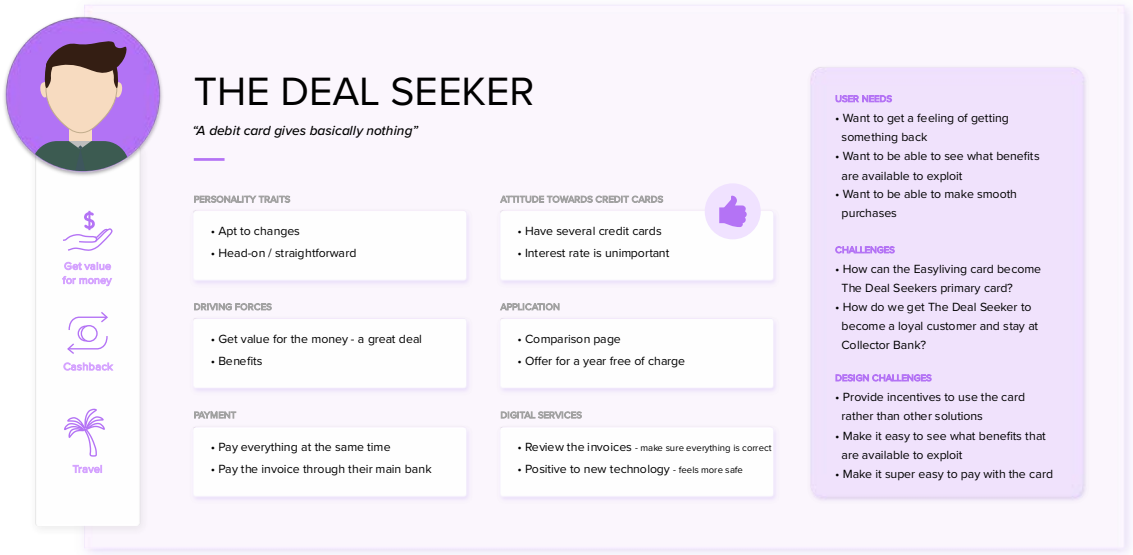

Figure 5.24. The Deal Seeker

The Analyst

The Analyst is a meticulous customer who wants to have control over their finances (*Figure 5.25*). They like to organize and structure and would therefore like to have the opportunity to compile and follow up on their expenses. For *The Analyst*, a credit card provides a flexible way of planning and budgeting its finances, but is mainly used when traveling – to have all the expanses collected in one place and to get the benefits when travel, like no currency charge. At home, *The Analyst* has the credit card as a buffer – an extra security. The invoices are payed directly in order to avoid the feeling of having something left behind. There is some concern about missing a payment and it is therefore important to communicate when there is an invoice to pay.

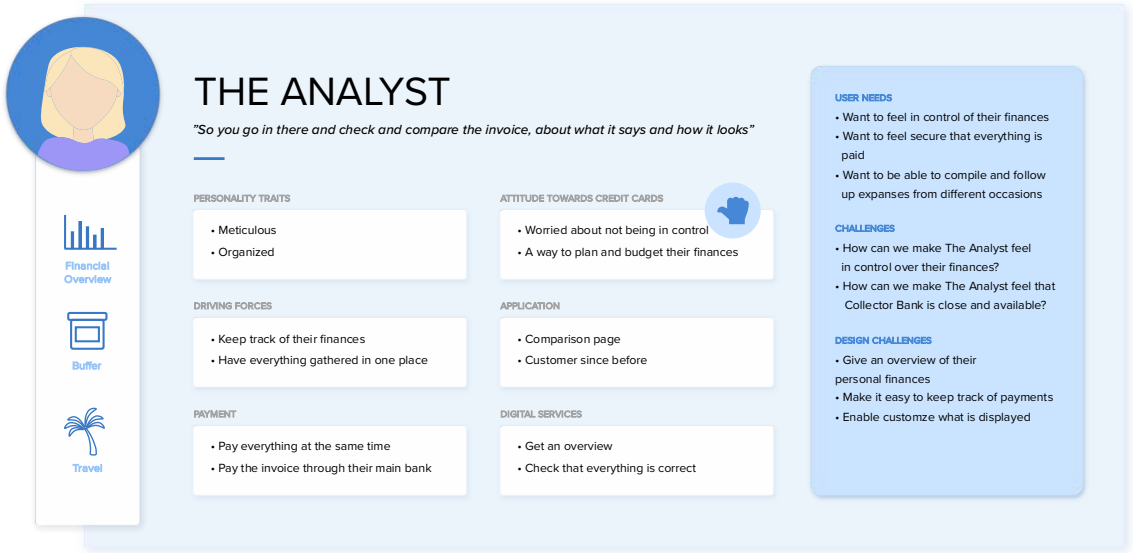

Figure 5.25. The Analyst

The Comfortable

The Comfortable is a clam and a comfortable person who has the credit card as a buffer if something unforeseen would happen (*Figure 5.26*). They want to feel confident that the credit card always works, and having certain benefits is something they care less about. The important thing is that they can trust the bank and that there are simple and clear channels to get in contact. *The Comfortable* is habitual who likes to do what they always did and is not so much about using new technology. However, they think it is great that the current app exists since it creates a platform where the bank always is available. A credit card for *The Comfortable* means extra security where digital platforms create trustworthiness.

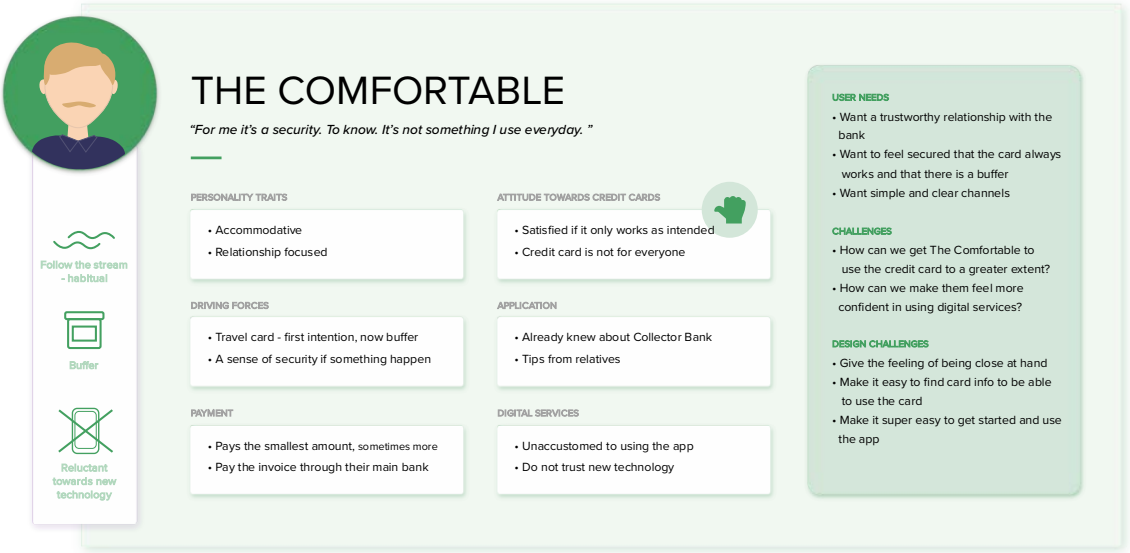

Figure 5.26. The Comfortable

The Endeavor

The Endeavor is a visionary who usually imagines what the future should look like (*Figure 5.27*). They prefer not to use credit cards but see it as a short-term solution to their problems - there is a need for money. They see credit cards as an opportunity to invest for the future and to achieve a better life situation, e.g. by paying for a driver's license or other education. But it can also be to catch up financially - in other words, spread the costs over a longer period of time. A low interest rate is therefore an important factor for *The Endeavor*, while other benefits are of less importance. A motive for obtaining a credit card from the bank was to get their loans and credits collected in one place.

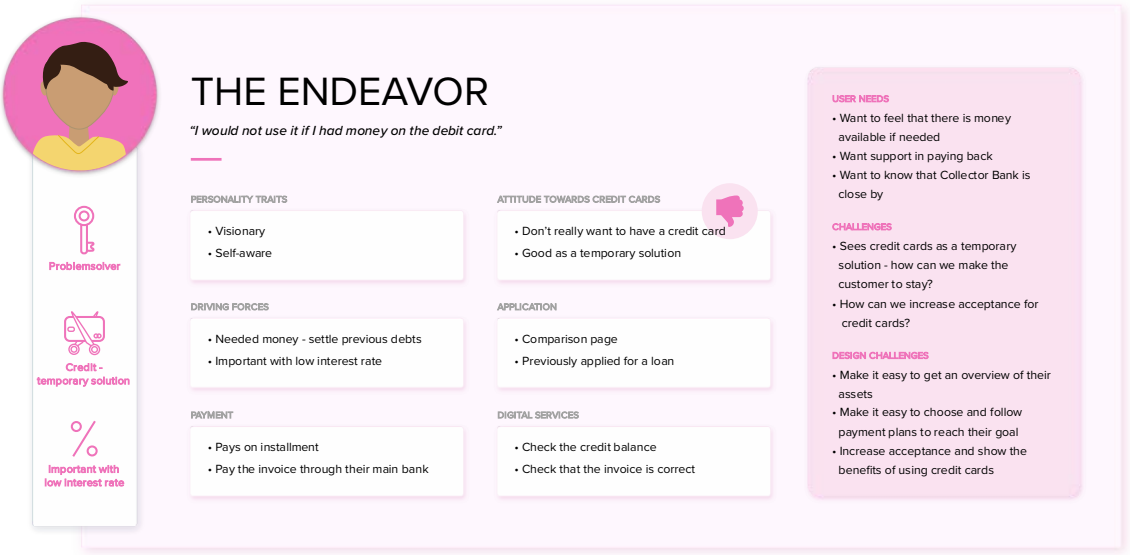

Figure 5.27. The Endeavor

The Spontaneous

The Spontaneous is an impulsive customer who likes to shop to treat themselves (*Figure 5.28*). Credit cards are something positive for *The Spontaneous* as it gives the opportunity to buy the things they want today and then pay the products with installment, at their own pace. The Spontaneous thinks it is worth paying a little extra to be able to get what they want right away, but interest rates are still an important factor when choosing credit cards. The credit card is mainly used when there is a need for money, but also when *The Spontaneous* wants to buy something for themselves. Having quick access to their credit balance is therefore important since they want to be able to easily see whether if it's possible to buy the things they want or not. They are interested in benefits in the form of offers and gifts as it creates a feeling of getting something back when using the card to a large extent. Missing an invoice is something *The Spontaneous* wants to avoid, and could, therefore, add a reminder to their calendar. Partial payment is always chosen when paying for an invoice.

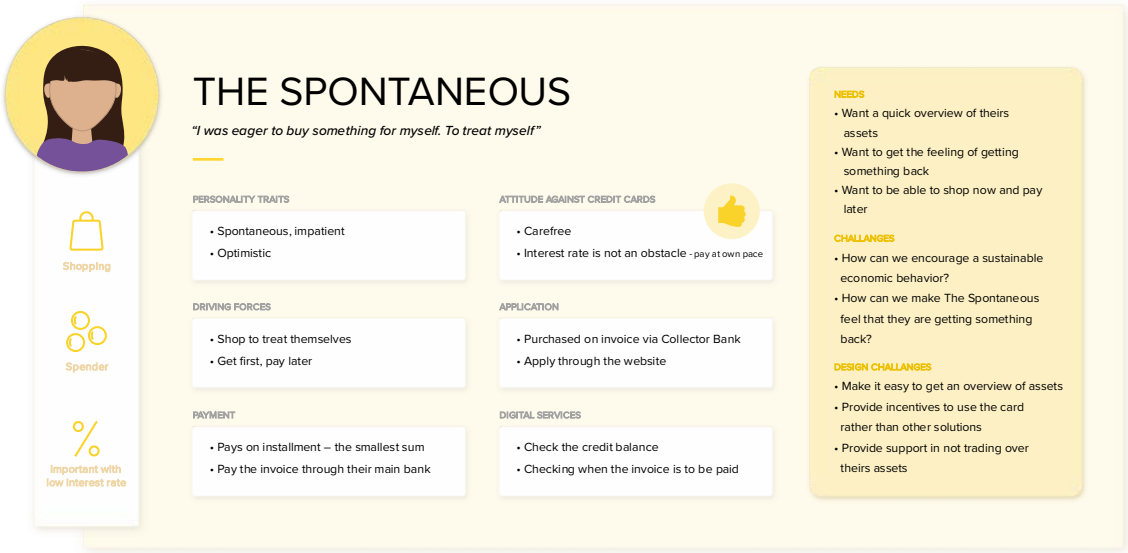

Figure 5.28. The Spontaneous

To summarize what guidance the insights regarding the behavioral archetypes can bring for concept development of credit card services, the design challenges formulated for each and every archetype has been concluded in *Figure 5.29*. Furthermore, a more detailed description of the behavioral archetypes can be read in *Appendix B - Appendix F*.

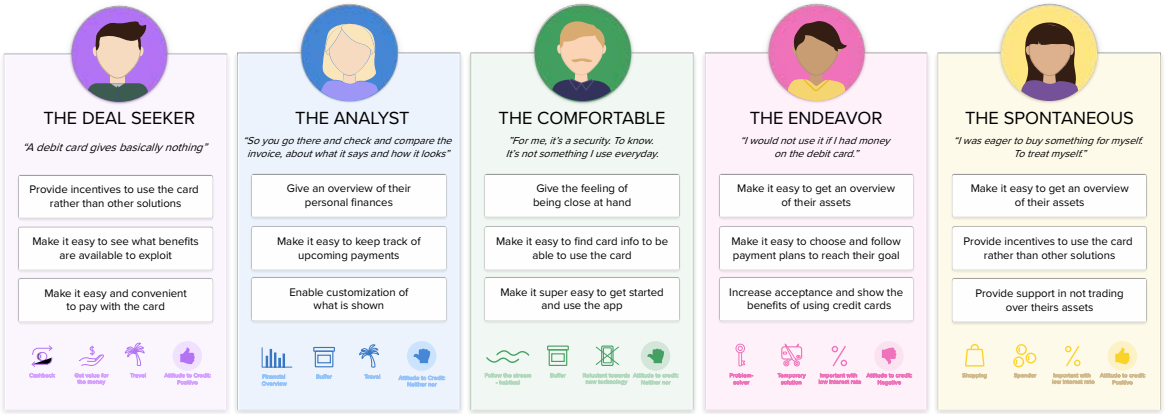

Figure 5.29. Summarized guidelines for behavioral archetypes

5.3.2 Affinity Diagram – Observation with Customer Service

The result of the affinity diagram on the observations was insights in why customers usually choose to call customer service – what problems they have regarding the credit card.

There were various reasons why they called as seen in *Figure 5.30*. The ones that were the most significant and relevant to our project and the aim to enhance the user experience of the app were the consumers' difficulties in knowing their credit balance (nr 1), if it was possible to raise their credit limit (nr 2) and understanding if they had an invoice that should be paid (nr 3). The fact that the employees at customer service had to tell the customers about the app indicates that there is a lack of communication and knowledge about available channels to facilitate their use.

It was revealed through interviewing the agent at customer service that customers find it difficult to know how the app works – how to navigate to access their engagements (credit card, loans, and savings). Some customers didn't know that it was possible to scroll or that they should press the cards to get into one of the engagements.

All insights were converted into user needs and combined with user needs found through the affinity diagram on the interviews. The result became a user requirements list which can be read in section 5.3.5.

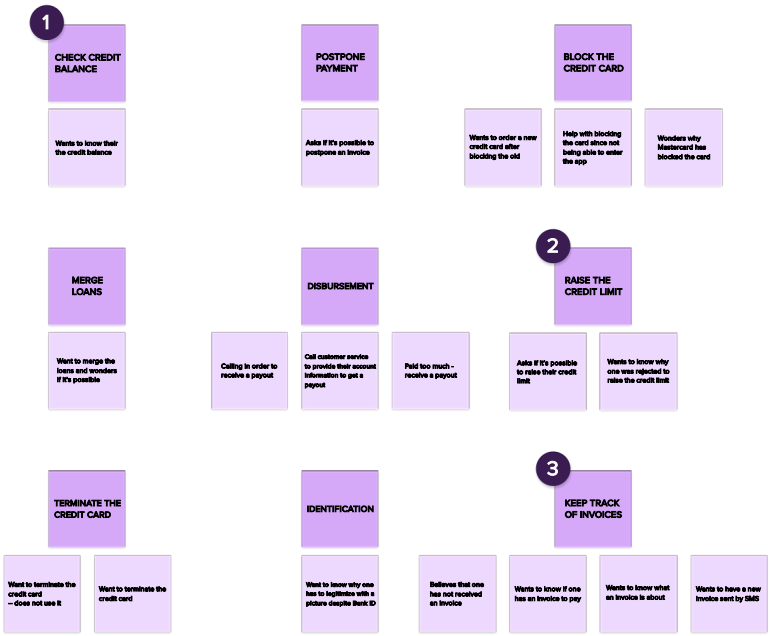

Figure 5.30. Affinity diagram over the observations with customer service

5.3.3 Affinity diagram - Interviews

The result of the affinity diagram was highlighted insights from the data collection, which was structured in a digital mind map. The structure of the map can be seen in *Figure 5.31*.

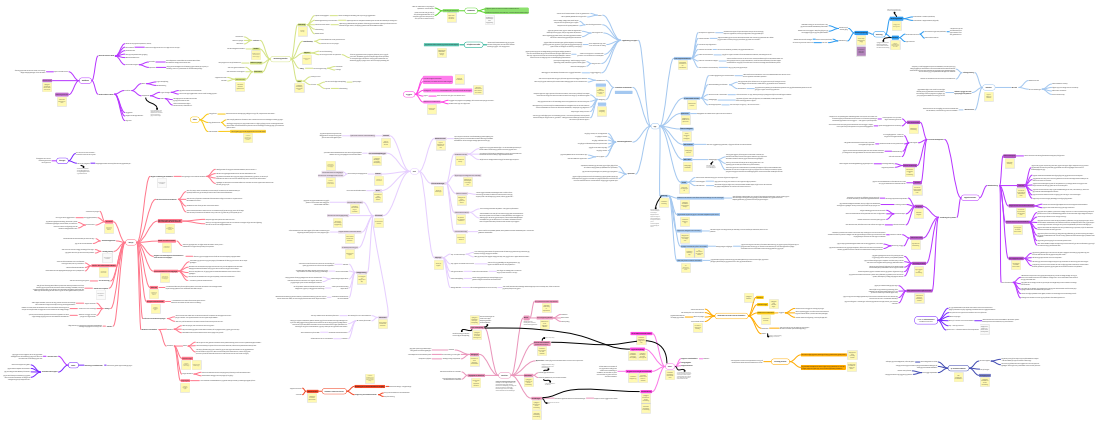

Figure 5.31. Affinity diagram – structure overview

The overarching themes found was the following: financial control, the credit card, applications (of the credit card), payments, future technology, benefits, support, (feedback about) the app and web, becoming a customer, (the importance of) trust/reliance/safety and other engagements of the bank. An overview of the overarching categories of the affinity diagram, can be seen in

Figure 5.32. To see more information about the findings from the affinity diagram, close-ups are provided in the *Appendix G.*

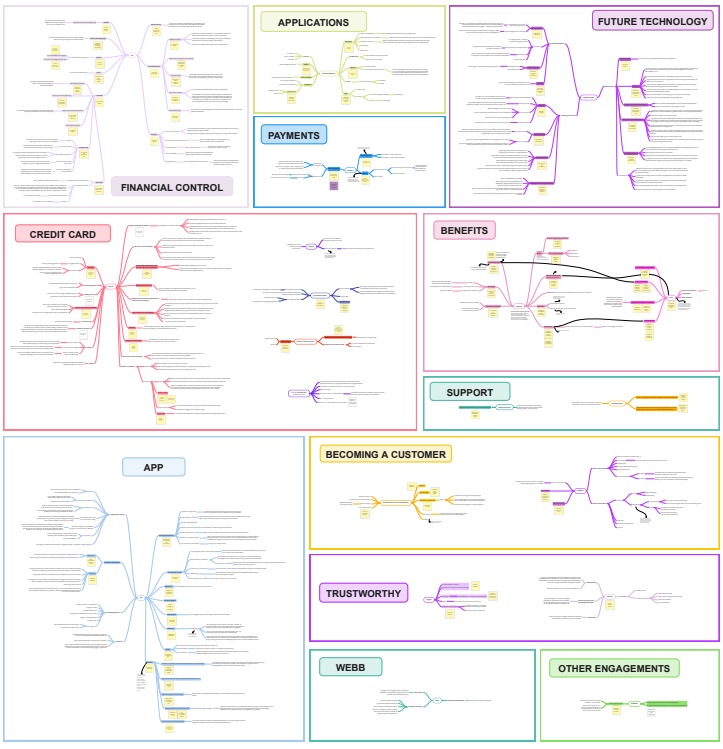

Figure 5.32. Affinity diagram, divided in overarching themes

From the affinity diagram, three recurring factors could be identified as important factors for the user experience; safety, financial control and additional value. These were set to be focus areas, and the overarching themes used for categorizing the user requirements list. The focus areas are presented in the next section 5.3.4, and is utilized to categorize the user requirement's list in section 5.3.5.

5.3.4 Impact Mapping – Impact & Focus Areas

The results of the first phase of impact mapping was the formulation of aim and impact areas. In other words, this was where the business goals in relation to project was sett. This was defined together with representatives of the bank to get a shared vision with the business goals for the project. The aim and impact areas were founded on the preliminary study, as this gave knowledge of what was important for the customer in order to deliver a good user experience.

The aim was phrased as follows, here translated from Swedish to English:

"Through our digital services we aim to be present and provide safety for our credit card customers. With a smart and tailored experience, we succeed in giving the right kind of additional value.".

The impact areas were set to customer satisfaction, loyalty and conversion. The goal of customer satisfaction highlighted the aim of having pleased customers, and impact metrics such as customers feeling that they have been empowered with financial control and got an understanding of the additional value the credit card provides. Loyalty was set as an impact area to highlight the goals relating to the current customers, specifying metrics regarding their use of the card. Conversion focused on goals regarding the recruitment of new customers. The metrics were not used further in this study but will be used by the bank to be able to follow up on the set goals in the future, and because of this they are excluded in this thesis.

As the impact areas had a wider perspective than this project, focus areas were formulated to highlight what factors to focus on to improve the user experience. In other words, the impact areas focus on the business goals with the credit card service, while the focus areas narrowed it down to describe the goal with this project in particular. The focus areas were derived from the preliminary study, identified in the affinity diagram as recurring themes. Thus, these were identified as important factors for an improved experience. The identified user needs, compiled in the user requirements list, was also categorized in these overarching themes. The focus areas were defined to be safety, financial control, and additional value, see *Figure 5.33*.

Figure 5.33. Focus areas

An overview of the defined impact areas and their connection to focus areas can be seen in *Figure 5.34*. The set goals of impact areas (for the business) and focus areas (for the user experience) was later utilized in an impact map, which then included user needs from the requirements list (chapter 5.3.5) and the developed design concepts (7.3). The full impact map can be seen in chapter 7.4.

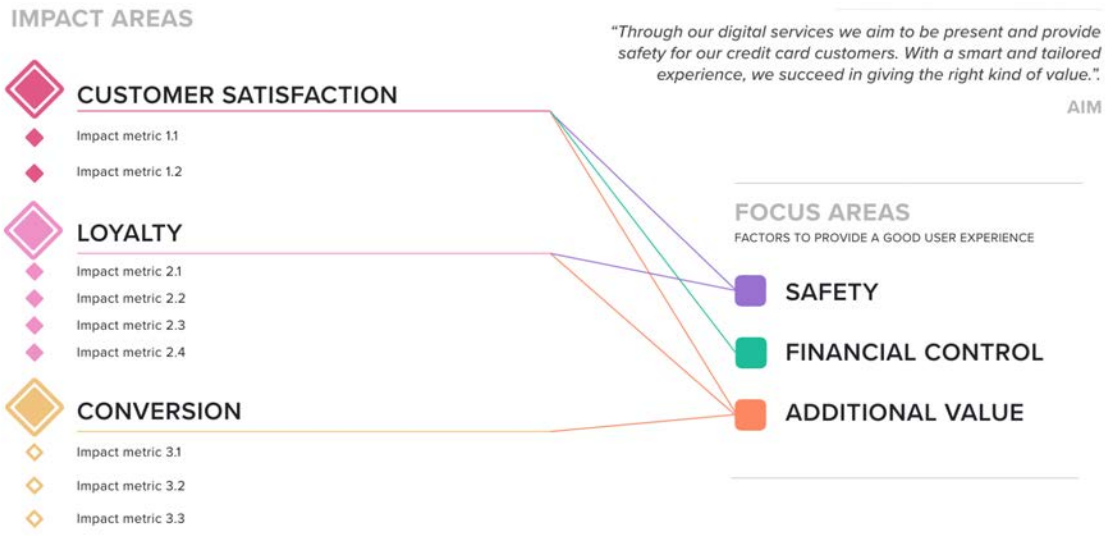

Figure 5.34. The connection between Impact areas and Focus areas

5.3.5 User Requirements List

Based on the findings from the preliminary study, hence the analysis of the affinity diagrams and the analysis of identifying behavioral archetypes and their needs, a list of user requirements has been conducted. The following figure (Figure 5.35) lists the user needs of each behavioral archetype. The list concludes needs in a prioritized order where the most important need can be found at the top, and the least important need is listed at the bottom.

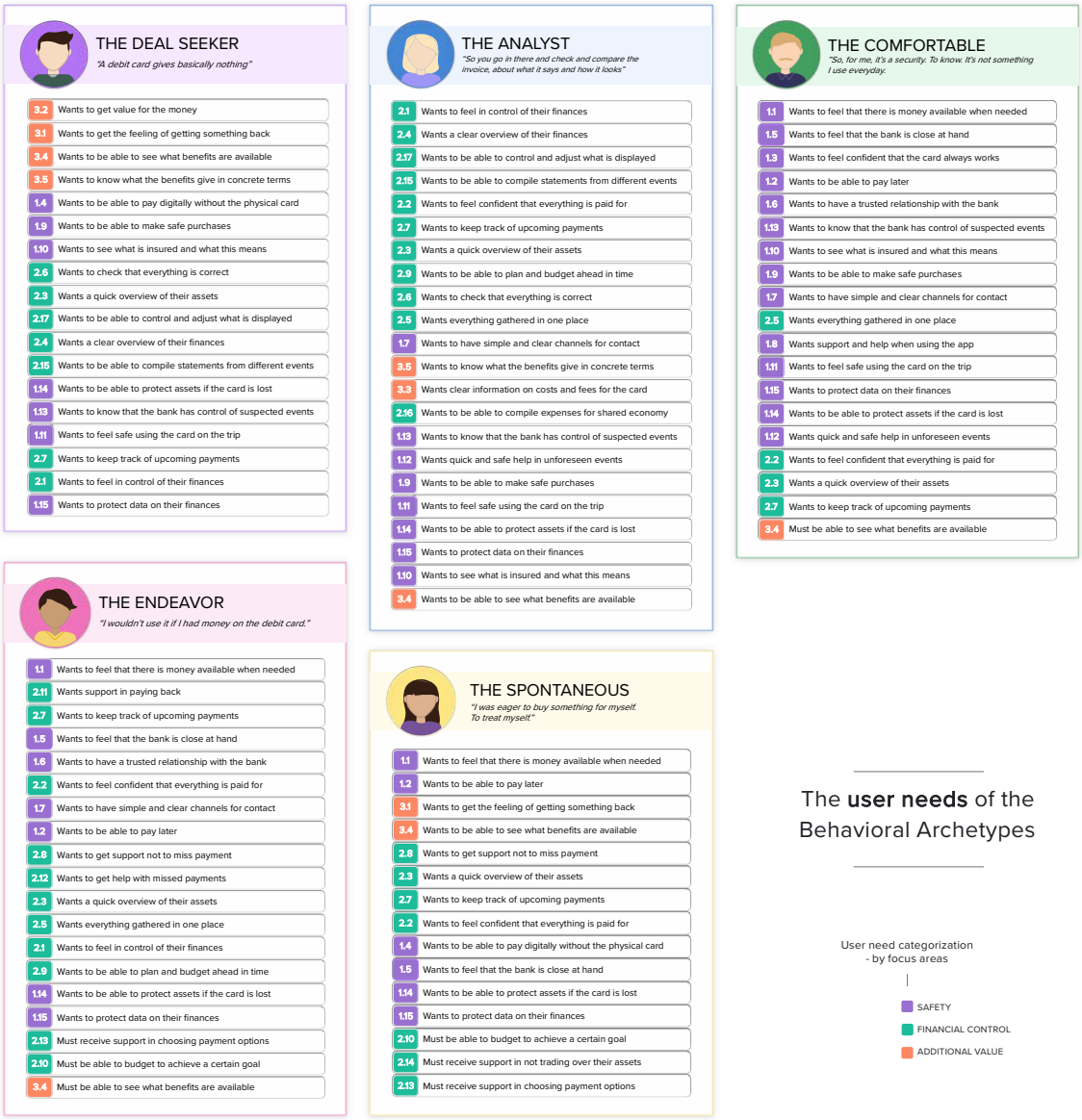

Figure 5.35. User Requirements list mapped to behavioral archetypes

In the requirements list above, with the mapping to each archetype, the needs occur several times as there are archetypes who have similar needs. This list was beneficial to describe the needs from each behavioral archetype's perspective, and by this frame the needs of that user. However, to get an overview of all needs, another user requirements list was concluded. The needs were categorized in three focus areas for the experience; safety, financial control and additional value. These focus areas were chosen as these were the main recurring themes for the user needs extracted in the preliminary study. Moreover, the list of user needs was also mapped to the behavioral archetypes and impact areas, to highlight what needs met these parameters (*Figure 5.36*).

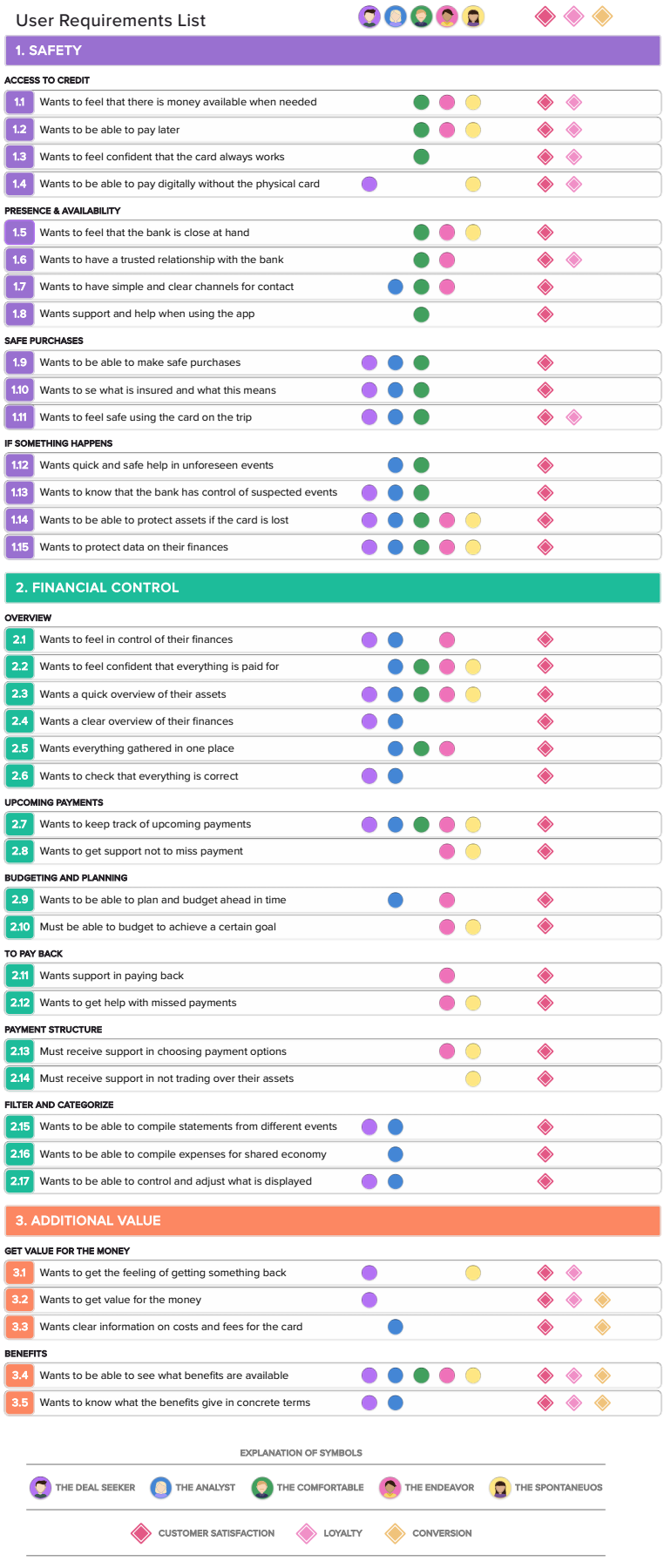

Figure 5.36. User requirement's list categorized by focus areas

The list of user needs was then used as a foundation for the concept development. The mapping to behavioral archetypes and impact areas were used in the diverging phases when prioritizing what needs to fulfil.

As the focus areas were set to safety, financial control, and additional value, these were factors defined to give an improved user experience. Because of this, these goals were strived to be provided in the interface of the app in the concept development.

6

Execution of Concept Development

This chapter will describe the process of developing solutions to the conducted user needs. The execution has been divided in the phases of ideation and prototyping, formative evaluation, and a presentation of the final prototype. Additionally, the execution of developing an impact map and defining design guidelines will be described. The concept development was an iterative process of ideating, testing, and evaluating solutions on how to improve the user experience of the bank app, with foundation in the insights from the preliminary studies.

6.1 Ideation & Low-fidelity prototyping

The execution of the first phase in the concept development, was a diverging phase of ideating on solutions on how to improve the user experience with a foundation in the insights gained during the preliminary study. This was done by first using the method *How might we*, to ideate on functions to solve the concluded user needs. Then, a matrix where the impact, thus, the value of the function, was weight against effort for completion. This was to prioritize and conclude what functions to go further with. After this, paper prototyping was used to sketch how the functions could be implemented in an interface. At last, before users were involved in a usability test, the concept was digitized.

6.1.1 Ideation – How Might We

The first ideation phase was done by using the method *How might we*, thus by rephrasing the user needs as questions of how they might be fulfilled. The user needs from the user requirements list were gone through one by one, and a how might we- question was phrased. As an example, the user need “Want to feel that there is money available when needed” was rephrased as the questions “How might we make the user feel that there is money available when needed?”. For each question, a session of two minutes was set to ideate on functions that could fulfil the need. The ideas were noted on post-its (*Figure 6.1*). Thereafter, a discussion was held where the ideas was presented and discussed. The discussion generated

new versions of the previous ideas and a consensus of what possible functions that could fulfil the user needs.

Figure 6.1. Ideation using the method How might we

6.1.2 Impact vs Effort

The functions that had been developed during the ideation phase was evaluated using a matrix with the factors of impact versus effort. Thus, the functions were evaluated on how much impact it could have on the experience in comparison to the cost and time to implement it.

The impact factor was based on how much value it was estimated to give to the users, how many of the target groups who had the need and how well it met the desired impact. The evaluation for how much effort it could take to implement the function was based on an estimation made by the students, thinking about how much time and cost it would probably take to realize it.

The scales in the matrix did not have any metrics, but the functions were evaluated against each other. Thus, the results of the matrix were an indication on what functions to prioritize for further development. This was done by mapping the functions to these parameters, see *Figure 6.2.*

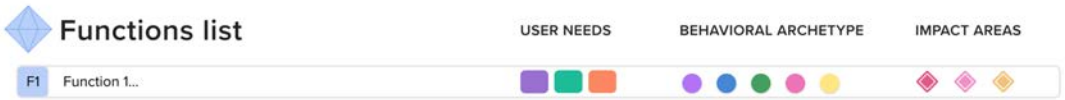

Figure 6.2. Structure of the functions list mapped to user needs, behaviroal archetypes and impact areas

6.1.3 Low-fidelity Prototyping – Paper prototyping

To get an initial understanding of how the functions, obtained from the *How Might We* method and selected from the *Impact vs Effort* matrix, could look like, paper prototyping was chosen as a concept development method. This to be able to test the concept at an early stage.

The paper prototypes were conducted with a brainwriting session to support the process of coming up with ideas. The method was divided into several sessions where each session focused on a certain view. The views that were idea generated around where the login page, the home page, and the credit card view. Since the method was carried out by us, the two students, the brainwriting, also known as the 6-3-5 method, was modified into a 2-3-5 method – two participants, three ideas in five minutes. The sessions were provided with paper prototype templates, as can be seen in the figure below (*Figure 6.3*).

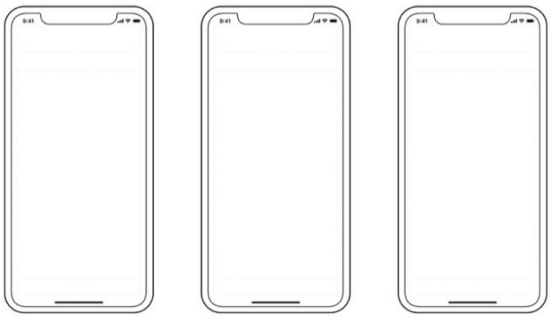

Figure 6.3. paper prototype wireframe template. (Krajcovic, 2019). Used with permission.

6.1.4 Low-fidelity Prototyping – Digitized Wireframes

To be able to evaluate the concepts at an early stage, and continue develop the ones that worked, the paper prototypes was digitized in the design tool Figma (*Figure 6.4*). All views, received from the paper prototypes, were evaluated by reviewing how well they met the user needs. They were tested in the Figma mirror app – an app who allows you to preview your designs in real-time, on mobile devices (Figma, 2020).

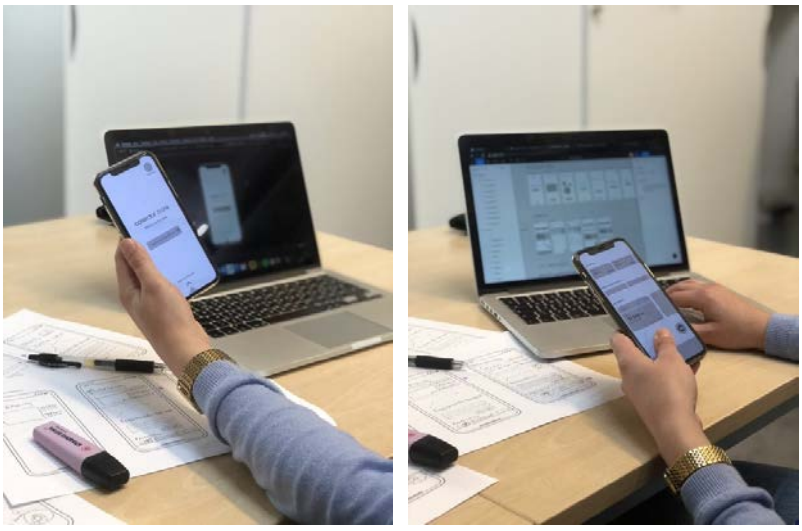

Figure 6.4. Wireframes tested in Figma mirror.

6.2 Formative Evaluation

After a few iterations with low-fidelity prototyping, formative evaluation in form of a usability test was conducted.

6.2.1 Usability Test

The usability test was conducted to test the design in an early stage, to identity usability errors and get feedback to iterate and improve the design further. This was because the concept development was in a phase were the students had a few questions on what design proposals to go further with.

The Setting

The setting of the usability test was as follows; a facilitator leading the test and informing the participant about what to do, an observer taking notes during the test, and the participant holding a phone were the prototype were displayed (*Figure 6.5*).

Figure 6.5. Setting of usability test

Participants

Ideally, participants in a usability test should be representative of the target group. However, as this was an early prototype, and the evaluation was done to get quick feedback on if the proposed functions was understandable, participants were recruited nearby to not spend too much effort on recruitment. This meant the participants in the test was design students. As the interface was a prototype of a bank app, the participants could relate to the tasks given as they all had a debit or credit card. Five participants followed through the test, and this was because the results were then considered to be saturated (*Figure 6.6*).

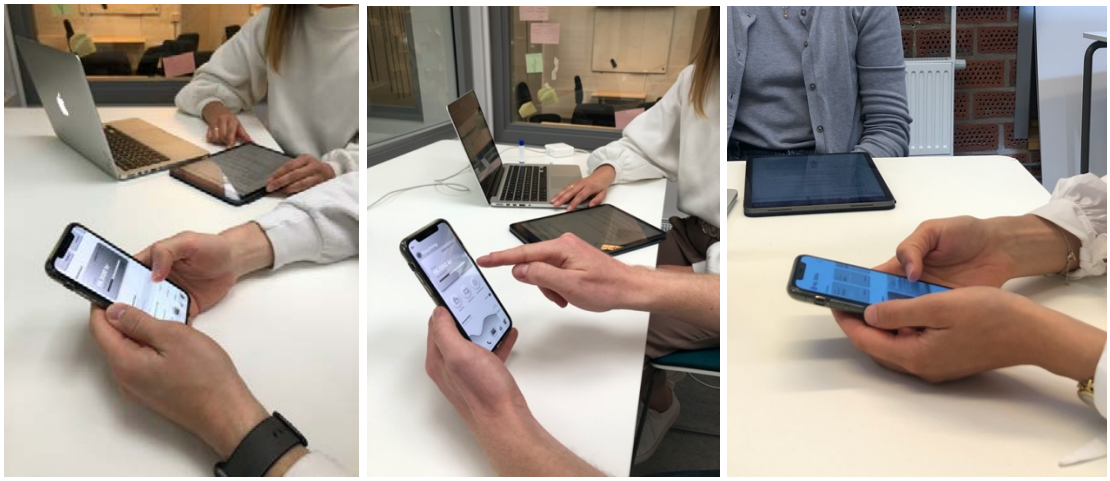

Figure 6.6. Participants testing the prototype

The Tasks

The test included seven tasks, testing various design solutions of the prototype. The tasks included a scenario, such as “you are standing at the grocery store and want to check your credit balance…” to give a context to why they were to complete the task. The prototype was interactive; thus, the user could navigate through the interface.

Task 1 – Check Balance

The first task tested a function of giving fast access to check their credit card balance. This was done in two different versions – by swiping down or holding a button (*Figure 6.7).* This was tested as it emerged during the data collection that fast access to credit balance contributes to feeling safe when having easy access to find out how much credit they have left.

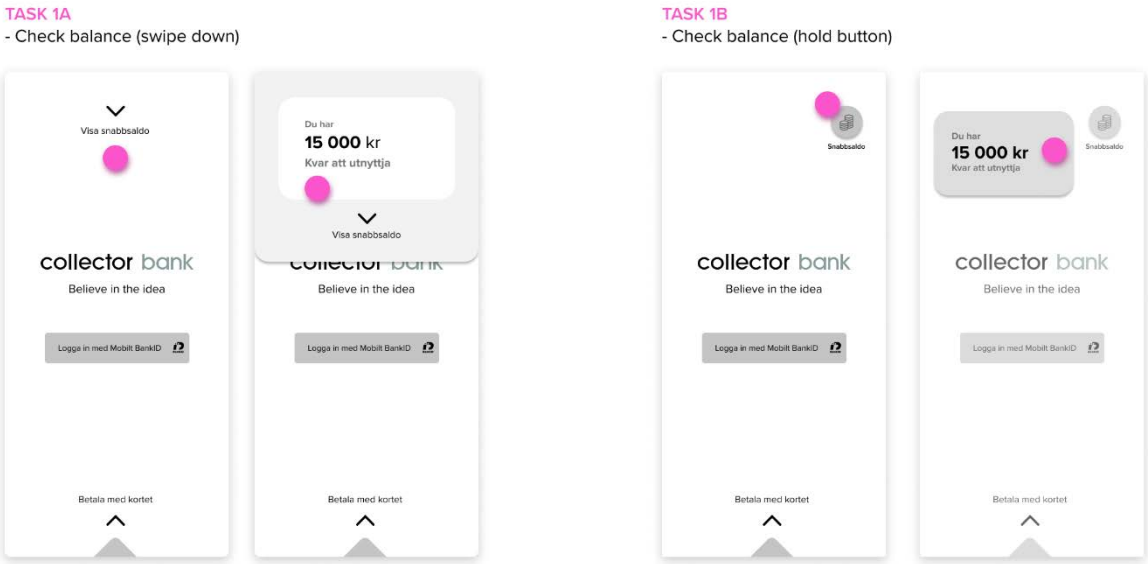

Figure 6.7. Usability test - Task 1

Task 2 – Mobile Payment

The second task tested a function for mobile payments (*Figure 6.8*), thus paying with the card in the phone. This as it appeared from data collection that some target groups wanted to be able to pay digitally without the physical card.

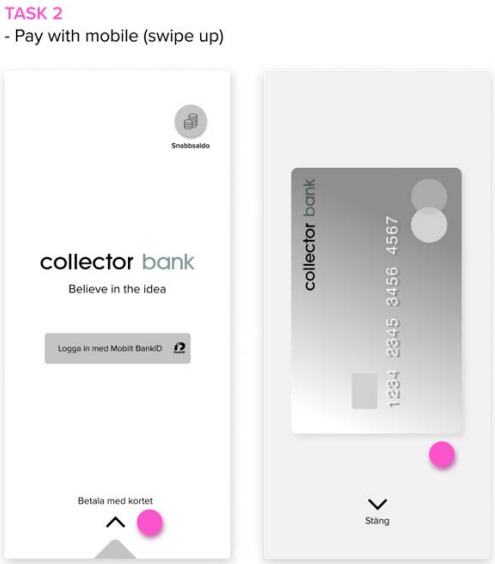

Figure 6.8. Usability test - Task 2

Task 3 – What to Pay

The third task was to check if the user had something to pay or not (*Figure 6.9)* – if they could understand, and what they felt when receiving this information. This because being able to examine if the participants received a perception of having financial control (one of the focus areas), as this was an identified need. They wanted to be able to keep track of their invoices and easily see whether they had something to pay for or not.

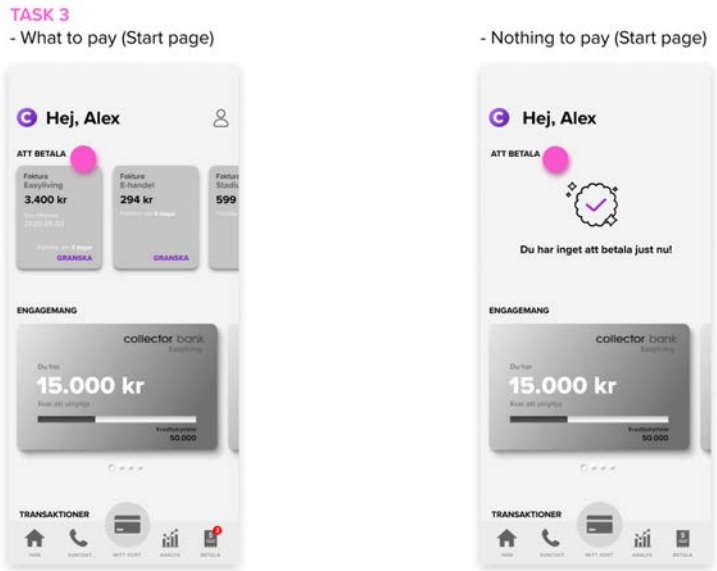

Figure 6.9. Usability test - Task 3.

Task 4 – Close Card for Abroad Purchases

The fourth task was to close the card for purchases made abroad, and this was done by clicking in to the credit card view and card settings (*Figure 6.10*). This task was included to fulfil the need of feeling safe by using the card abroad and the ability to protect their assets.

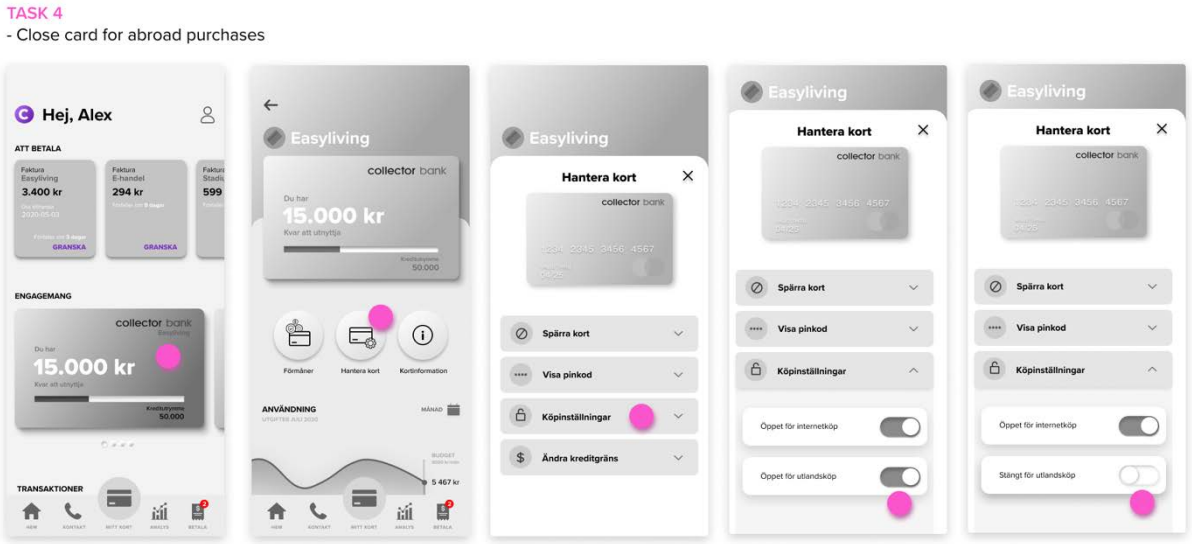

Figure 6.10. Usability test - Task 4.

Task 5 – Block Card for Purchases

The fifth task was to examine if the focus area safety was provided when having the opportunity to block the card (*Figure 6.11*). This task was, as task 4, done at the credit card page, in card settings.

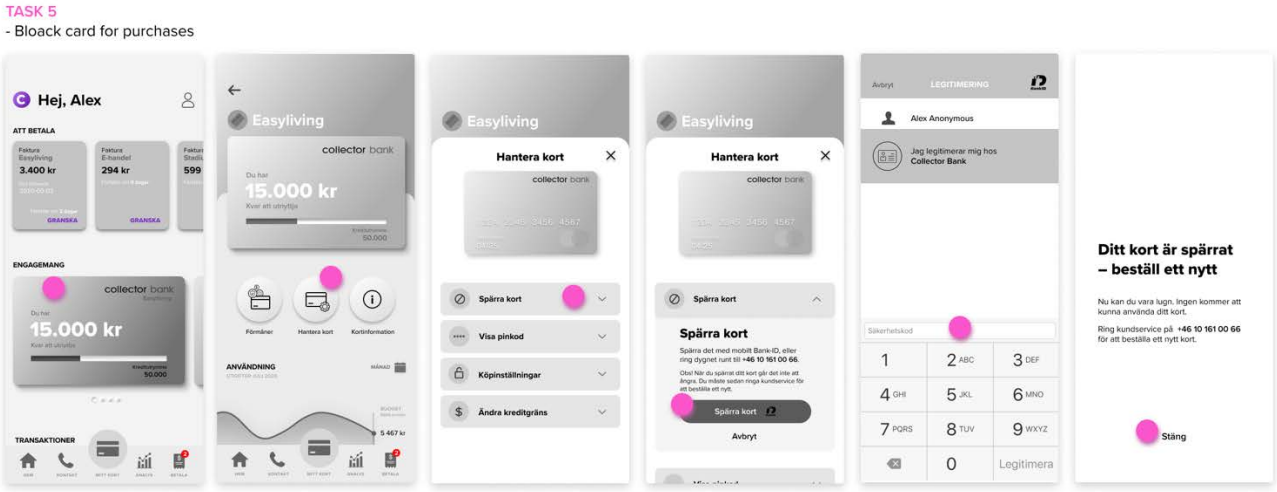

Figure 6.11. Usability test - Task 5.

Task 6 – Follow up on a Previous Purchase (and Ask about Benefit Symbol)

For the sixth task, the participants were asked to check up on previous purchases, if they had been registered as it should. For the first subtask, a purchase had been made online. The concept had a symbol indicating that purchase had a delivery insurance (*Figure 6.12*). For the second subtask, a purchase had been made abroad and had a symbol indicating that the purchase included travel insurance (*Figure 6.13*). With these tasks, the aim was to examine if the user understood what the symbols meant since it was intended that these symbols would indicate benefits used in the purchases.

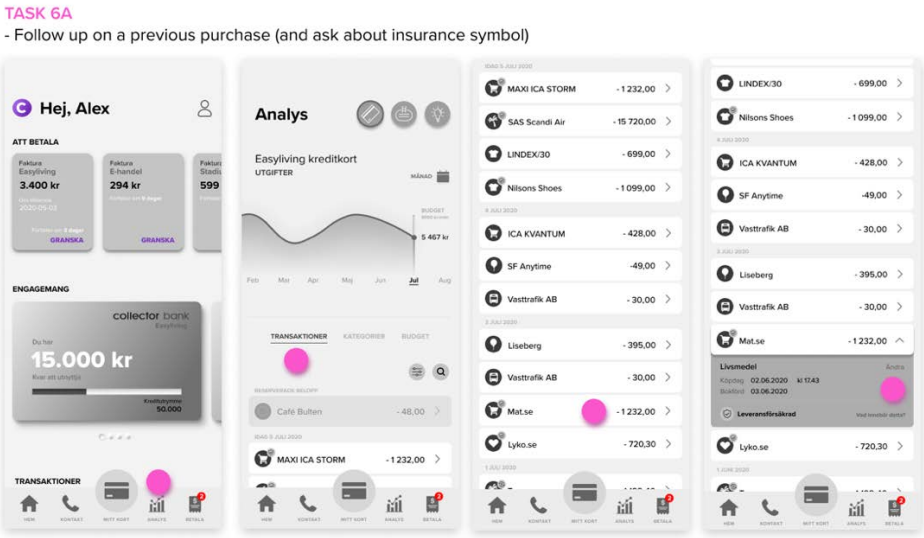

Figure 6.12. Usability test - Task 6A

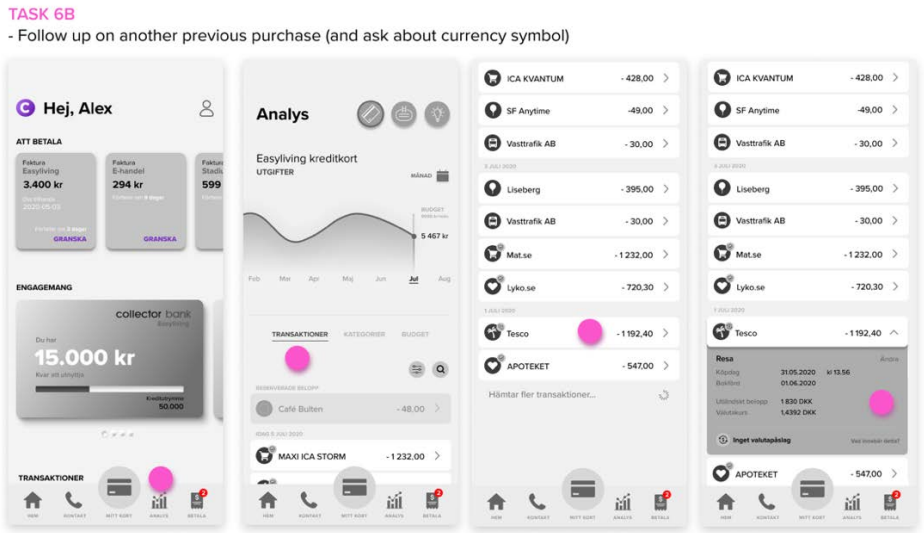

Figure 6.13. Usability test - Task 6B

Task 7 – Review and Change Monthly Budget

For the seventh task, the participants were asked to review their monthly budget and change it (*Figure 6.14*). This to consider the focus area on financial control as this appeared through interviewing customers – they wanted to feel in control of their finances and have the possibility to plan and set a budget.

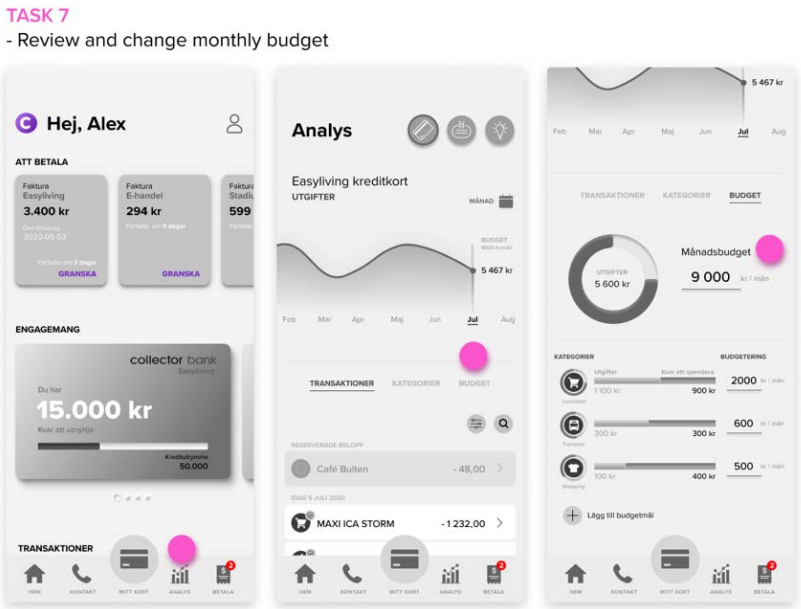

Figure 6.14. Usability test - Task 7

Evaluation

To summarize what conclusions could be drawn from the usability test, a template was set up for each task (*Figure 6.15*).This included the notes taken during the test and what insights could be withdrawn, thus, identified usability errors and feedback. Then, actions on what was needed to be done in order to improve the interface was formulated. Each task was then analyzed, and conclusions could be made on what to improve for the final concept.

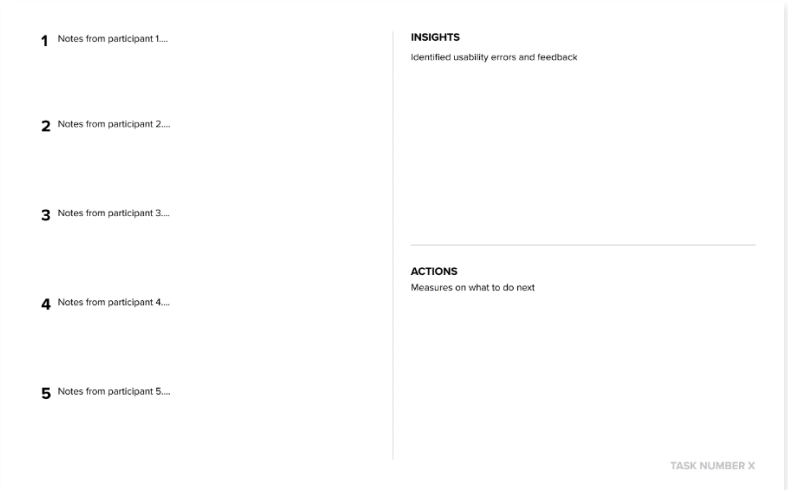

Figure 6.15. Evaluating the findings from the usability test

6.3 Final Concept

The final concept was developed through an iteration made on insights and comments from the formative evaluation, thus the usability test. This to improve and redesign the low-fidelity prototypes and be able to improve the design. The final concept was further developed as high-fidelity prototypes in Figma to get a result as close to a final service as possible.

6.4 Impact Map

To visualize the connections between the final concept, user needs and desired impact – an impact map was constructed. This was done by utilizing the defined impact areas and focus areas, as well as the behavioral archetypes and user needs from the preliminary study. By this, it could be exhibited that the concept developed were founded on the preliminary study.

6.5 Design Guidelines

To conclude all knowledge gained in this study, both the insights from the preliminary study and concept development, design guidelines was formulated. This was done by reviewing the requirements defined from user research, and then complementing this with insights from prototyping and testing the design in the concept development phase. The guidelines were phrased to give guidance on how to design an interface of a credit card service, and thereby highlighting important factors to consider.

7

Results of concept development

This chapter will outlay the results of the concept development phase. The results have been divided in the phases of ideation and low-fidelity prototyping, formative evaluation, and a presentation of the final concept. Moreover, an impact map will be presented to show the connection between the final concept and the findings from the preliminary study. At last, to conclude all insights gained in the project, guidelines for designing an interface of a credit card service has been defined.

7.1 Ideation & Low-fidelity Prototyping

This section will describe the results from the first phase in the concept development; from the first ideas to the results from low-fidelity prototyping. In summary, the results from the first ideation phase was a list of functions, thus design solutions on how to fulfil the user needs. The list of functions was evaluated in a matrix weighted with impact versus effort, which resulted in a prioritized list of functions to work further with. Then, the low-fidelity prototyping resulted in wireframes, which was used for usability testing.

7.1.1 Ideation – How Might We

The results from the first ideation phase was ideas or functions that fulfilled the user needs and met the desired impact areas. The following list concludes the developed functions, see *Figure 7.1*.

Figure 7.1. Functions list (Swedish).

7.1.2 Impact vs Effort

To prioritize what ideas to go further with, the functions were mapped to see what user needs they fulfilled, which behavioral archetypes had the need for this feature and what impact areas it could meet. The results of this mapping can be seen in *Appendix H*.

The mapping of functions to user needs, the target group and business goals were then used as a foundation for evaluating the impact the function could provide. This was utilized in the *Impact vs Effort* matrix, were the functions were evaluated. The functions giving the highest impact, and lowest effort was prioritized, see *Figure 7.2*. Accordingly, the results of the matrix gave an indication on what functions to go further with for the prototyping phase.

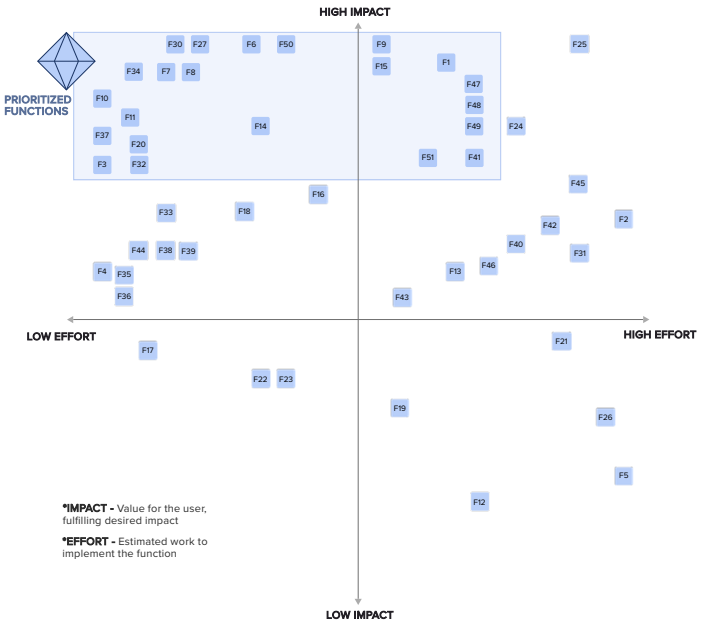

Figure 7.2. Impact vs Effort matrix

7.1.3 Low-fidelity Prototyping – Paper Prototyping

The brainwriting sessions resulted in several paper prototypes, where some of them can be seen in *Figure 7.3*. These were, as mentioned in section 6.2.2 *wireframes*, digitized in order to evaluate the concepts.

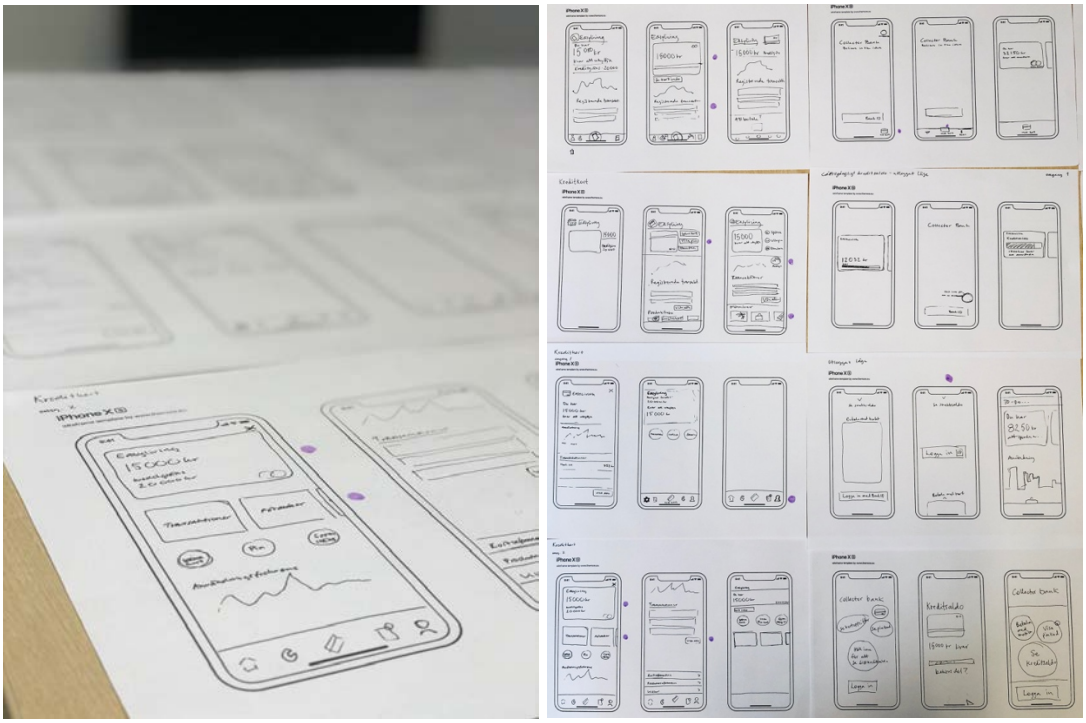

Figure 7.3. Paper prototypes

7.1.4 Low-fidelity Prototyping – Digitized Wireframes

The digitized wireframes can be seen in *Figure 7.4* - *Figure 7.6*. These were evaluated and changed during the process of digitizing the wireframes and when interacting with the views in the Figma mirror app.

Figure 7.4. Different wireframes of the view when signing in to the app

Figure 7.5. Several concepts on the view for the homepage

Figure 7.6. Concepts of the credit card view

Selected Views

The selected concepts for the view when signing into the app can be seen in *Figure 7.7* while an iteration was made on the other views. This since not being completely satisfied with those concepts. Further development led to new, quite similar, concepts on the views of the homepage and the credit card (*Figure 7.7* - *Figure 7.8*) and too be able to conduct usability tests, additional views were designed (*Figure 7.9*).

Figure 7.7. Two different concepts of the view when signing in to the app.

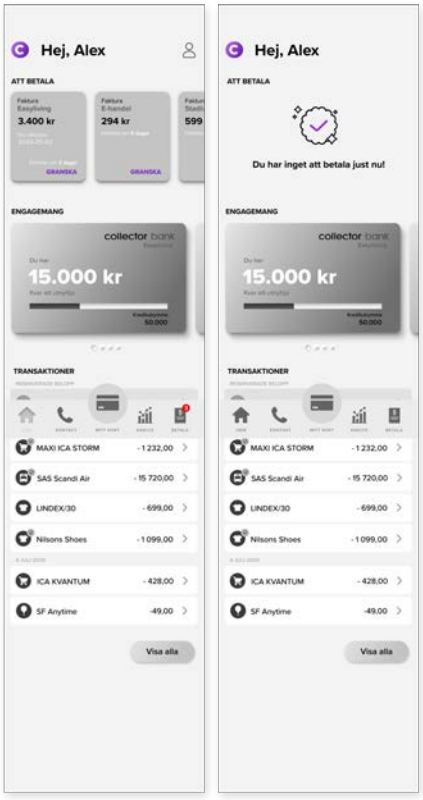

Figure 7.8. Homepage views – one when having invoices to pay for and a view when you have nothing to pay.

Figure 7.9. The credit card view and additional views over transactions, categories, and budget – analysis views.

7.2 Formative Evaluation

The results of the formative evaluation were the insights gained in the usability test, including identified usability errors and positive feedback as well as formulated actions on how to improve the usability.

7.2.1 Usability Test

The results from the usability tests were identified usability errors and feedback on how to improve the design. The template delivered insights on what to improve and what actions to take and two examples of these can be seen in *Figure 7.10* - *Figure 7.11*. The rest of the templates and insights can be found in *Appendix I.* However, a summary on all templates has been made and can be seen in *Figure 7.12*. It exposed what actions to take in order to improve the user interface, and thus fulfil the focus areas (safety, financial control and additional value).

TASK 3 - What to pay (Start page)

QUOTES

"It's a positive message. That Collector Bank is happy that I paid my bills - and so am I."

"It looks like I have done good, as if I have completed something. As if I have been cleaning and now it's clean."

"Oss tillhanda" - I don't really know what that means.

INSIGHTS

- Difficult to understand "oss tillhanda", clarify which one is supposed to be paid first
- The invoices may occupy too much space
- Everyone prefers to have the number of days until payments over the date.

ACTIONS

- Remove "oss tillhanda"
- Try making the invoices smaller
- Highlight which one is supposed to be paid first

Figure 7.10. Findings from task 4

TASK 6A - Follow up on a previous purchase (and ask about insurance symbol) purchases

QUOTES

"It feels like Collector Bank is more involved, that they know I made a travel purchase and by this I don't need to know myself that I have an insurance. As if the bank has my back, instead of me needing to know for myself what my benefits are."

"It feels like a security. If I have it through the bank, otherwise I might not have known about it"

"I like that it is directly linked to my purchase"

INSIGHTS

- May be difficult to understand the symbols - what does it mean? Many still says that it provides a sense of security with the shield symbol. Good to have an explanation on what this means.
- Should you have a general symbol for benefits? Or should you have a text that shows what kind of benefit instead? E.g. "Delivery Insured"
- Important to have balance with not showing too much irrelevant. Should not feel too "sellable", as if the bank wants to sell on a lot of stuff
- Make it more clear where the users are the interface - where should recent transactions be?

ACTIONS

- Review the benefit symbol - clarify with text?
- Review the transaction view - where should it be? Look over the front page, see how to get to the analysis page

Figure 7.11. Findings from task 6A

In conclusion, the actions to take in order to improve the user interface, and fulfill the focus areas (safety, financial control and additional value) can be seen in *Figure 7.12*.

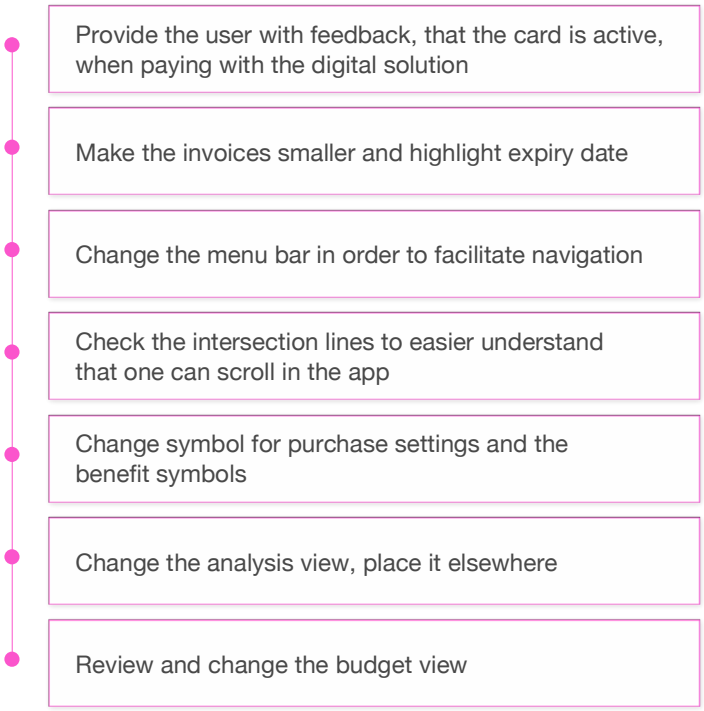

Figure 7.12. Actions to take in order to solve the usability errors

7.3 Final Concept

In this chapter, the final concept will be presented. This includes a high-fidelity prototype, showing how the user needs can be fulfilled by design solutions in an app interface (*Figure 7.13*). Thus, the concept is founded and developed after the behavioral archetypes, user needs and desired impact defined in the preliminary study. The concept has been refined and iterated on, using formative evaluation with a usability test. However, it should be noted that the final concept is proposals based on the findings from this study and does not cover all views the bank app requires. Accordingly, the concept does not follow the visual guidelines of the bank. Still, the colors in the design system of the bank, pink and purple, has been applied in the prototype to reflect the brand identity. Because of this, the final concept can be seen as an independent proposal made for inspiration and guidance.

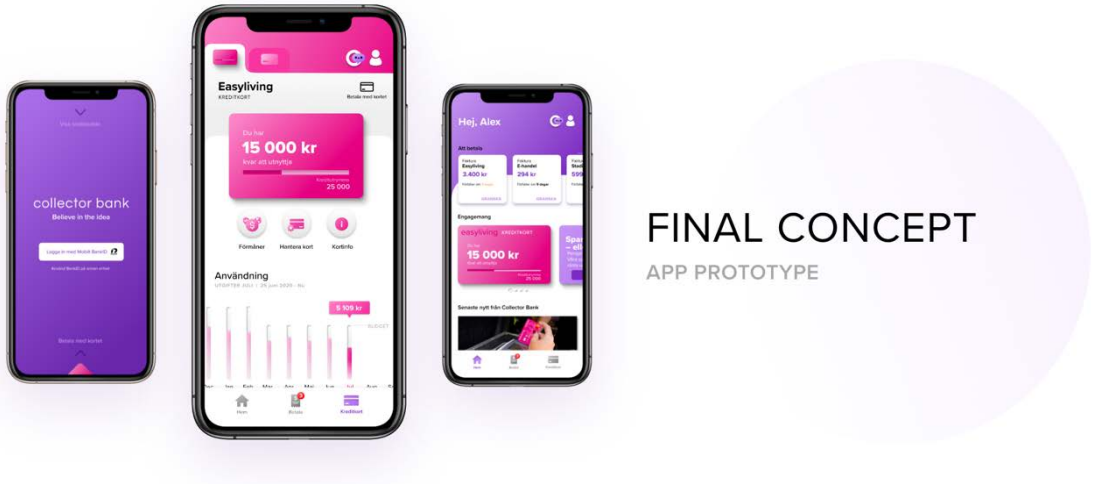

Figure 7.13. Final concept

The segments in this chapter presents the design solutions for the following interface views; login page, home page, contact page and credit card view. The final designs are mapped to the user needs gathered in the preliminary study. In other words, the design is mapped to the user needs from the user requirements list. Moreover, the user need shows which category of focus area it belongs to, which behavioral archetype has the need, and which impact area it meets. An explanation to how the user needs are shown in this chapter can be seen in *Figure 7.14*. It can be noted that all user needs will meet the impact area of customer satisfaction, as when user needs are fulfilled this will be the desired outcome.

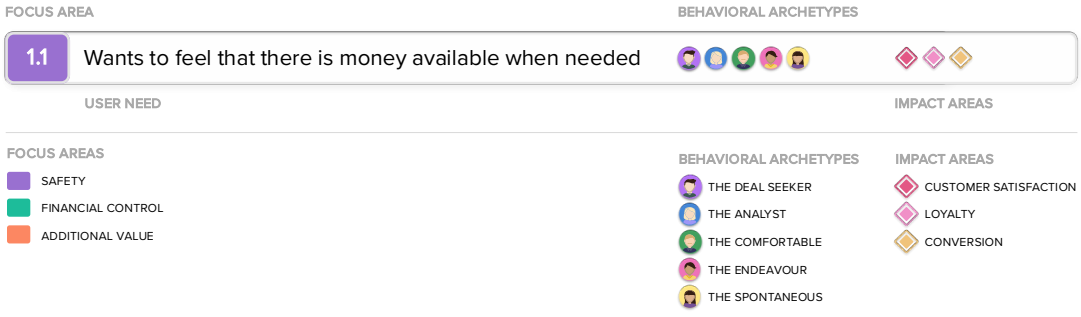

Figure 7.14. Explanation – How user needs are shown

7.3.1 Login Page

The first page of the final concept is the login page in the app, thus the view the user meets when they have not signed in yet. It was considered if the user did even have to sign in, to ease the threshold to use the app and lower the access time. But, as safety and security were prominent factors identified during the preliminary study, there was decided to have a log in page with Bank ID to highlight the sense of security. Because of this, the user need of wanting to protect data about their finances will be fulfilled.

To give access to what the user wants to check most frequently, it was decided to have a function displaying credit balance directly at the login page (*Figure 7.15*). This can be accessed by swiping down on the phone, and the credit balance will be displayed at the top. The swiping interaction was chosen in favor for a button, as there was a greater clicking area and a more familiar interaction, based on the findings from the usability test. As it is designed now, the user has to hold their finger on the phone to make the credit balance display, and when they let go the number disappears. This was something that the user did not expect at first during the usability test but was learned after the second time they used the function. This interaction of holding at the interface was included to make the user feel safe that their information is protected, and that they don't accidentally show their balance to someone else.

Easy access to credit balance was included to fulfil the user needs of wanting to feel that there is money available when needed. The user wants to feel confident that there is money on the card, and because of this, feel confident that it will work. Most prominently, the user need of having quick overview of available assets will be met with this function. This was a user need that could be identified for all behavioral archetypes and may meet the desired impact of customer satisfaction. In addition to customer satisfaction, loyalty may be met by fulfilling the first two user needs mentioned. This is because, if the user will in an easy way know that the credit card will work, they might be more inclined to use this card in favor for another card.

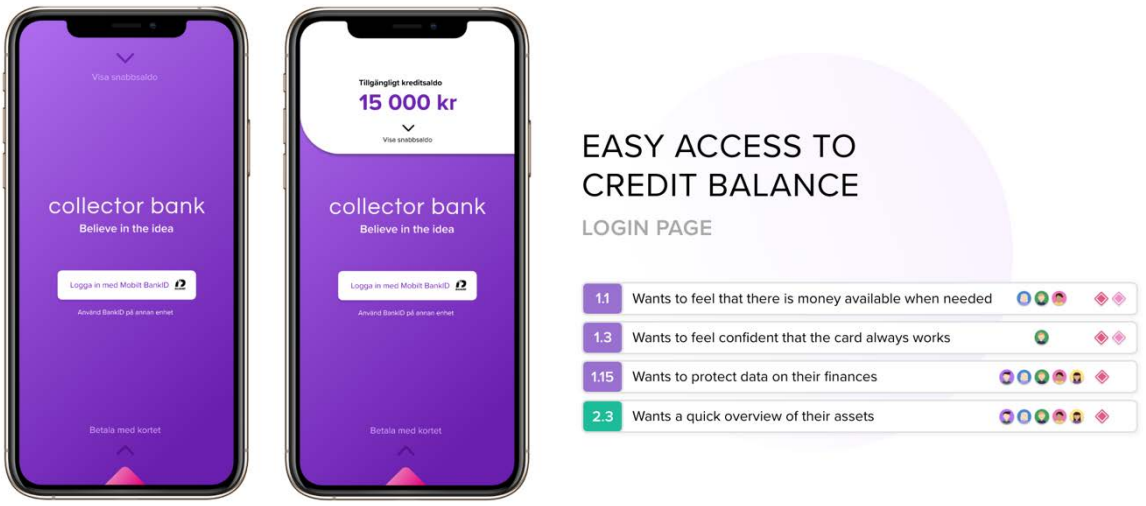

Figure 7.15. Login page - Easy access to credit balance

The second function available directly at the login page is the access of mobile payment (*Figure 7.16*). This means they will be able to pay with their card in their phone if they don't have their physical card with them. This was added to fulfil the user need of being confident that always can being able to pay. There were many who had experiences of forgetting to take the card with them, for example, by forgetting it in another jacket at home. But when having their phone with them, the accessibility to mobile payments would be useful. On the other hand, there were some target groups who were a bit reluctant to new technology, and because of this there might be a threshold for mobile payments in some cases, as for example the archetype *The Comfortable*. Still, *The Deal Seeker* might demand new features such as these, as they often can be seen as early adopters of new technology.

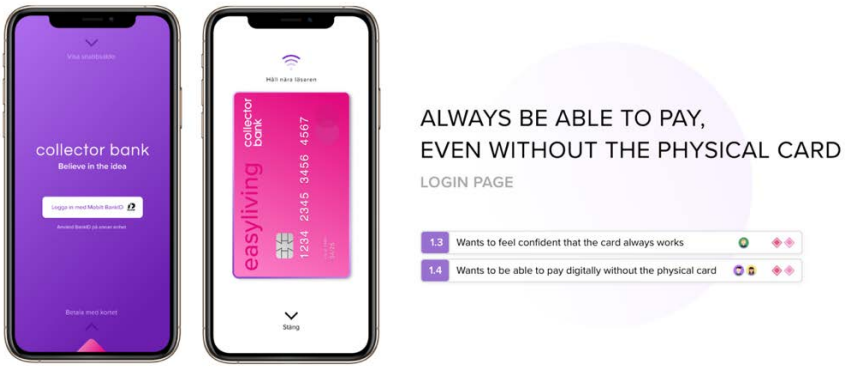

Figure 7.16. Login page - Mobile payments

7.3.2 Home Page

When the user has logged in, they arrive at the home page. The first thing shown is whether the user has something to pay or not. This can be invoices from the credit card, but also other invoices if they have chosen to pay by an invoice to the bank online (*Figure 7.17*). This was chosen to be the first thing displayed, as the user need of feeling control of their finances was one prominent thing derived from the preliminary study. To pay with a credit card means that you will pay for your purchase later on, and this means you have an upcoming task of paying your invoice. This was the reason for why some target groups were a bit reluctant to credit cards, as they don't want to feel that they have something to do in the future. They want to have control and be done with their payments – not worrying about upcoming payments. It was very important to be able to keep track of upcoming payments and get support to not miss an invoice. Moreover, it was important to give feedback when the user was done with their payments and thus not have any invoices to pay for. This is shown in *Figure 7.17*.

Payments also has its own page in the menu, for a more detailed view about upcoming payments and what has been paid historically. However, this page has been excluded from the final concept, as the fulfilment of user needs regarding upcoming payments is summarized in this view. It can also be mentioned that the use of notifications can also be beneficial for upcoming payments.

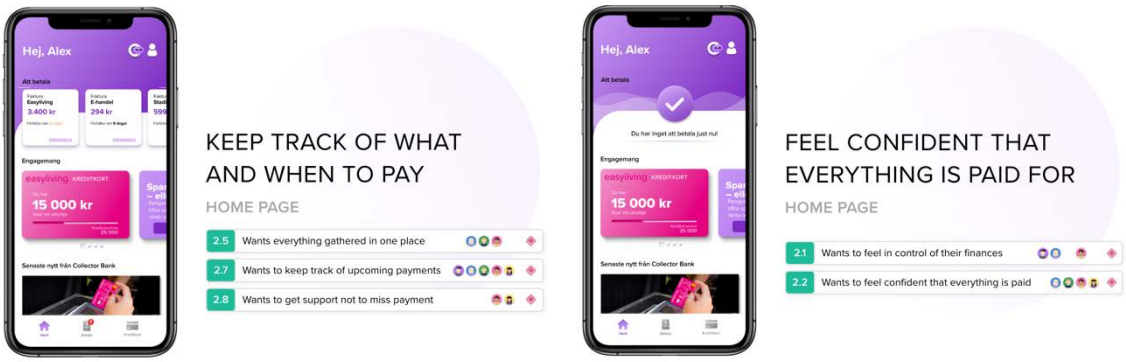

Figure 7.17. Home page - Upcoming payments

Navigation Bar

Figure 7.18 describes the navigational structure of the interface. The menu at the bottom displays the home page, payments, and the engagements the user has in the bank. This means, if the user only has a credit card at the bank, only this view will be available in the menu. But, if the user also has a savings account and loans, this will be added to the menu. The left phone, in *Figure 7.18,* displays a user with only a credit card engagement at the bank, and the right phone shows a user with savings and loans also. By this, the interface is tailored to the needs of the user. It was considered if the other engagements also should be displayed in the menu for upsells reasons, even if the user did not have savings and loans. But this was discarded, to have a cleaner interface that is also more relevant for the user. Still, as the bank may want to highlight their services, other available engagements are displayed in the middle of the home page as cards. To get access to these engagements, one need to scroll to the right.

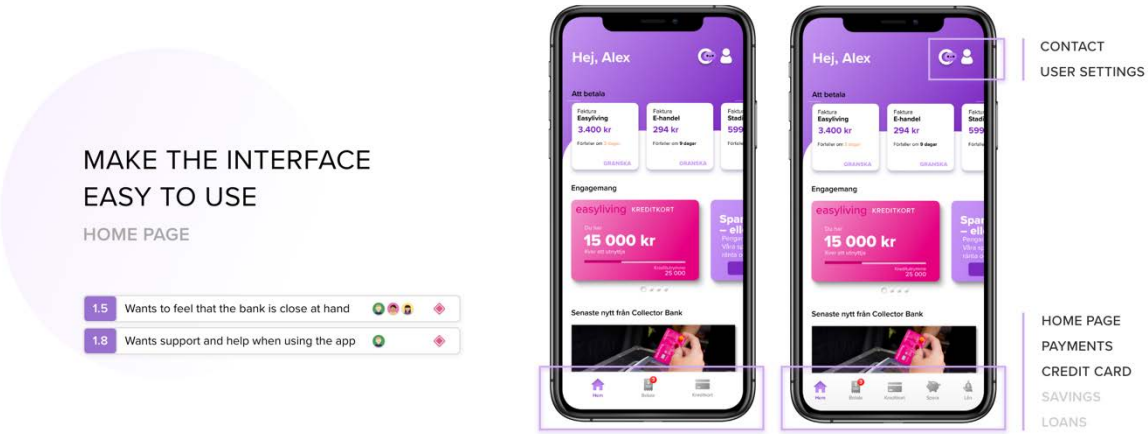

Figure 7.18. Home page – Navigation

At the home page one can also navigate to the contact page and user settings (*Figure 7.18*). These are available at every page, to make the user feel that the bank always is close at hand if they would need any help. Furthermore, if the user scrolls down at the start page, a news feed will be displayed with articles and inspiration. By this, the bank shows that they are present and builds trust by communicating with the user.

7.3.3 Contact Page

As previously mentioned, the contact page is available in every view of the interface. The page is accessible by a chatbot-symbol, inspired by the logo and branding colors of the bank. This page aims to fulfill the user need of feeling that the bank is close at hand. This to aim for giving the values of a personal meeting, such as trust and reliance. During the interviews, one interviewee even said that it is good that the bank has an app, since this is a place to visit as the bank does not have any offices. This because of the bank being a digital niche bank – an internet-based bank.

At the contact page, there are various contact options; ask a question to the chatbot, call customer service, email customer service and look for the answer in frequently asked questions (*Figure 7.19).* These options allow the user to choose the channel that suits them and their purpose best.

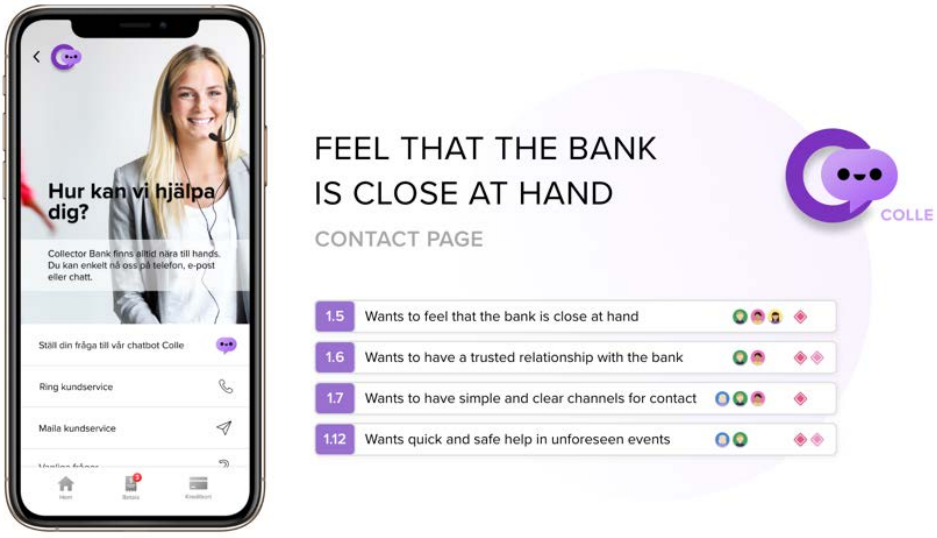

Figure 7.19. Contact page

7.3.4 Credit Card View

The credit card view is reached by pressing the credit card button in the menu or when pressing the credit card accessible at the home page. The view includes a prominent picture of a credit card, which shows the credit balance and limit (*Figure 7.20).* Adjacent to the card, there is three buttons; benefits, card settings and card information. The benefit button is there to give the user easy access to get information regarding belonging benefits that comes with the card – information about insurances, interest-free grace period, that the card has no currency charge etc. The card information button will give the user information about their credit card, like their credit balance, credit limit, interest and so on. Nevertheless, due to delimitations are these interfaces not prototyped and is therefore not shown in the final concept. Card settings on the other hand, will be explained in section 7.3.4.1 Cars Settings below.

If one scrolls down, the user will get information about their expenditures. Here, the user is able to see how much they spent, both expenditures made until today and expanses made previous months (*Figure 7.20*). The consumption is visualized by bars, where each bar represents one month. When scrolling to the left, the user is able to see the history of their expenses and thus get an overview of their expenditures. Furthermore, if the user has set a budget goal, this is also shown in the bar chart.

Below the graph with bars, the users can choose between looking at their latest transactions, analyzing categories or set a budget. These are described in the sections below.

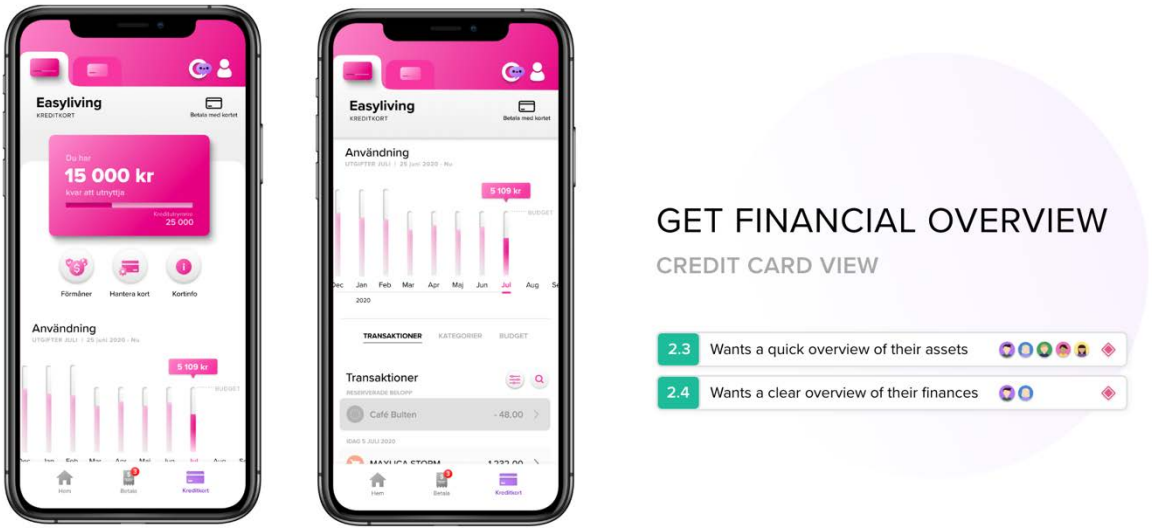

Figure 7.20. Credit card view

7.3.4.1 Card Settings

To meet the need of making the user feel safe using the card when travelling, a setting has been proposed to let the user close the card for abroad purchases (Figure 7.21). Then the user can use the card abroad, and when arriving back home they can close the card. Because of this, they may not feel that there is a big risk to make withdraws in a foreign country. Moreover, the card settings also provide a function for closing the card for online purchases. Thus, these functions highlight the need of safety and security, to meet the desired impact of customer satisfaction.

Figure 7.21. Credit card view - Close card abroad

Another function highlighting security is to be able to block the card. This is done in the card settings menu as well, as shown in *Figure 7.22.* What can be tricky with this function is that the user might want to have easy access to it if something happens with the card, thus they may want to know where this function is to feel safe. Yet, the user should not be able to accidently block the card. As Cooper (2014) argues in his book About Face; “hide the ejector seat levers”. Owing to this, interaction that are not irreversible should not be easy to do by mistake. However, as the user will have to approve the action of blocking the card by using Bank ID, this may be enough effort to not be able to block the card accidently.

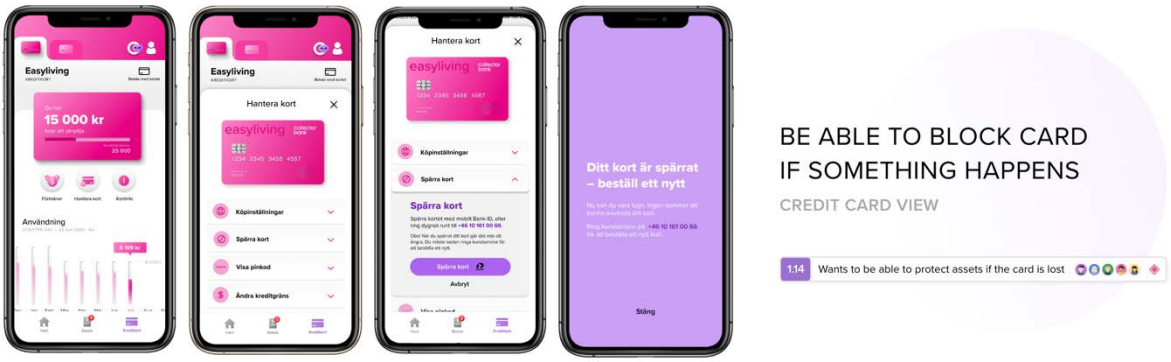

Figure 7.22. Credit card view - Block card

7.3.4.2 Transactions

Figure 7.23 shows the latest transactions at the credit card view to the right, and a notification on a purchase to the left. Based on the gathered insights, there is a user need to check that everything is correct and to feel in control of their economy. This can be met by giving the user feedback, for example by notifying them, so that they can feel confident that the purchase is registered. This function was actually requested by interviewees during the data collection. Additionally, it is important to show the status of the transaction, for example by showing if the amount is reserved or withdrawn. In conclusion, by giving the user feedback that the purchase is registered, this will make the user feel confident that everything is correct with their payments.

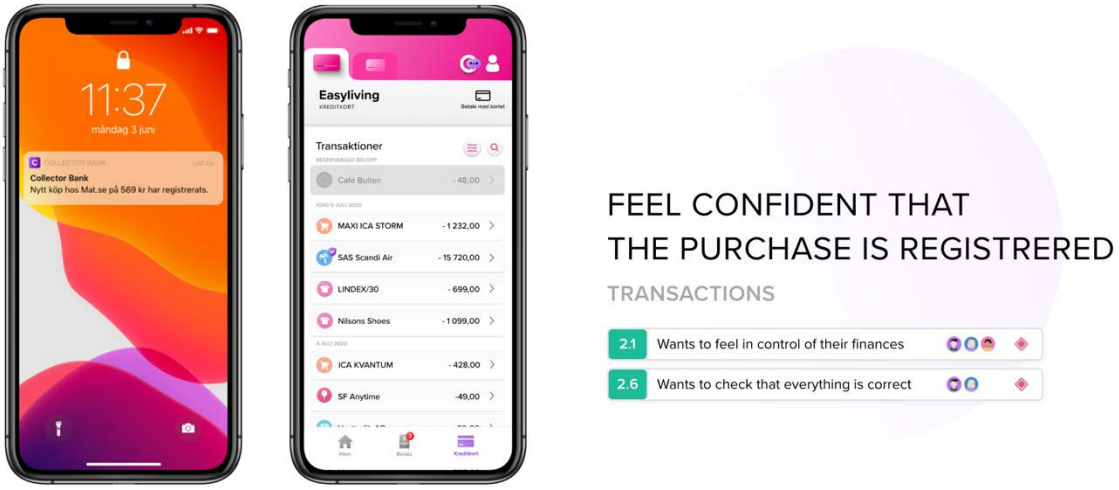

Figure 7.23. Transactions

7.3.4.3 Filtering Options

In the preliminary study, it became evident that a benefit with the credit card is to get a statement with all purchases done during a month, compiled together. This gives an overview of previous purchases, and by this the user can feel that they have control of their economy. Still, it was also prominent that the users wanted to compile expenditures based on other parameters than the monthly overview. This could be to compile purchases made during a trip, or transactions made within a certain category. Some users did even use the card for a certain category, for example only for trips, to get all expenditures regarding travelling collected in one bill. Because of this, a function with filtering options was developed for the concept *(Figure 7.24*). By this, the user can filter out transactions made during a specified time, or from a specific category. In this function, it is also suggested to filter out based on country, by for example analyzing the given currency or enabling location information on the phone (when using mobile payments). This is to make it easier to filter out transactions form trips, as this credit card was often used for vacations. The user can then compile a statement of this filtering, to get an overview for the given parameters.

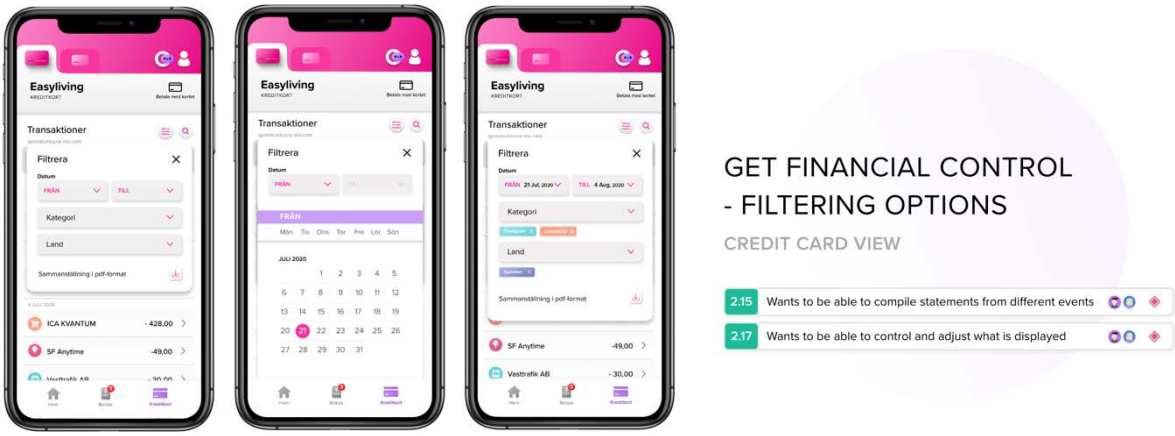

Figure 7.24. Credit card view - filtering options

7.3.4.4 Categories

To fulfil the user needs of being in control and provide a good overview of their personal finances, a proposal has been made to show what category the transaction might fit in *(Figure 7.25)*. In the credit card view, the user can see a pie chart of their expenditures, and by this it is visualized what categories they spend their money on. In addtion, the user also has the ability to add and change categories to better fit their transactions.

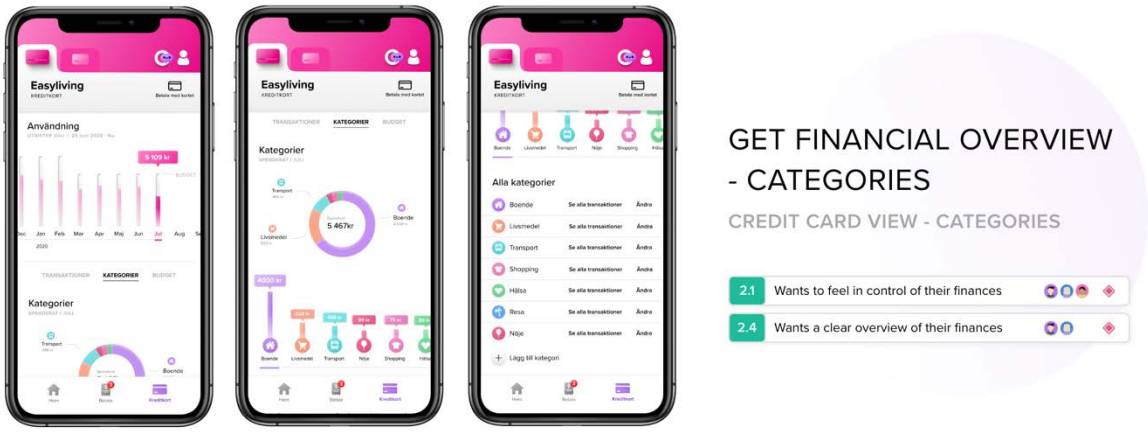

Figure 7.25. Credit card view - Categories

7.3.4.5 Budget

Another way to make the user feel in control of their finances is to help the user plan ahead and set budget goals. In the credit card view the user can set a monthly goal for their budget, see *Figure 7.26*. When they set this limit, the idea is that they will get notified if they spend over their budget. This function was designed because, some users expressed they don't want to spend more money than intended. By setting boundaries for their expenses this might be a way to plan ahead and remind oneself to not spend more than first intended, as the available credit then might be used as a buffer. The user can also set budget goals for different categories, to plan their expenses in greater detail. By this, the user can keep track of their expenses and be able to adapt their economical behavior as they get instant feedback of how much they have spent in comparison to their goal. This design proposes to fulfil the need of giving the user financial overview and control, and by this meet the desired impact of customer satisfaction.

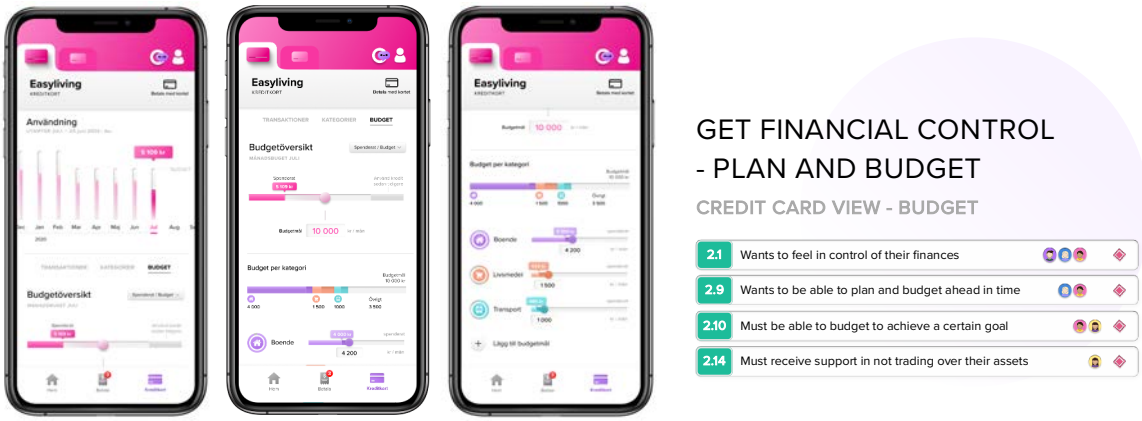

Figure 7.26. Credit Card view - Budget

7.3.4.6 Highlighting Benefits

One prominent motivation for having a credit card is the benefits that comes with it. The needs here is to get the feeling of getting something back and to get value for the money, thus feel that it's beneficial to use the credit card in comparison to other cards. Hence, that the credit card has an additional value. Some expressed the need of clear information about what benefits are available, that they know that there are some benefits, but they don't remember exactly what. In addition, it was identified in the study that users would like to know what the benefits means, in concrete terms. For example, if the card does not charge extra for currency exchange, how much do one actually earn because of this. The user might know that there is a benefit, but not what it means for them.

Significant benefits for this credit card was the provided insurances and that the bank does not have a currency charge when doing withdraws in foreign currencies, for example when travelling abroad. To highlight these benefits a proposal was made to show the benefit in direct association to the purchase. As the card provides insurances, for example they act as an intermediary when making online purchases, by providing insurance if the item is not delivered as it should be. Thus, to highlight that the user gets this additional value with the credit card, there is a symbol on the transaction showing that the purchase is insured (*Figure 7.27*). This means the user will be able to make safe purchases, which also is another user need. Moreover, the user need of wanting to see what is insured and what this means can be fulfilled by opening up the transaction, as information is provided what the insurance means for the purchase. The symbol was chosen to be a shield, as if the user is protected.

Another example of a benefit highlighted with a symbol is that the bank does not charge extra for currency exchange (*Figure 7.27*). This is valid for withdraws in a foreign currency; thus, these transactions have a symbol of a globe. It might be valuable for the user to see what transactions are made in another currency, and by this the symbol is not only there to show the benefit with the credit card, but also has another purpose. If the user opens the transaction, they will see the exchange rates. Furthermore, information is provided that the bank does not have any currency exchange mark. Next to this information the user can click to see what this means in concrete terms for them, thus it is stated that banks often charges 1-3% extra for currency exchanges (Kortio, 2019), and how much they earned by not having this mark.

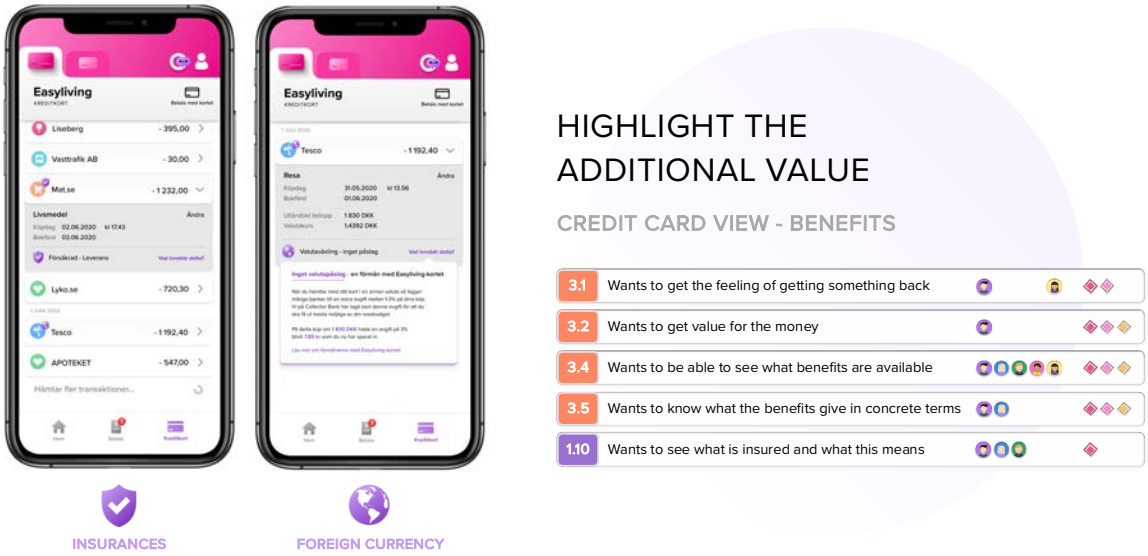

Figure 7.27. Credit Card view - Highlight additional value

This concept proposes to meet the need of highlighting the additional value, and by this meet the need of highlighting the value the credit card gives. Accordingly, the desired impact here is loyalty and conversion, as it shows in a concrete way the benefit of using this card over another one. Finally, as with all other design suggestions presented in this chapter, the goal is to improve the user experience and by this meet the goal of customer satisfaction.

7.4 Impact Map

The results of the final impact map can be seen in *Figure 7.28*. This is to get an overall picture of the connection between the final concept and the findings from the preliminary study. To the left, the formulated aim and impact areas (customer satisfaction, loyalty, and conversion) are shown in a circle, to highlight the core purpose with the product. Furthermore, the behavioral archetypes and their user needs can be seen. The user needs are categorized and based on the three focus areas (safety, financial overview, and additional value). Then, to the right, the final design concepts are displayed together with the functions they include. The connections are then drawn between the user needs and proposed functions. Thus, this is a map to summarize and show that the final concept is based on the findings from the preliminary study.

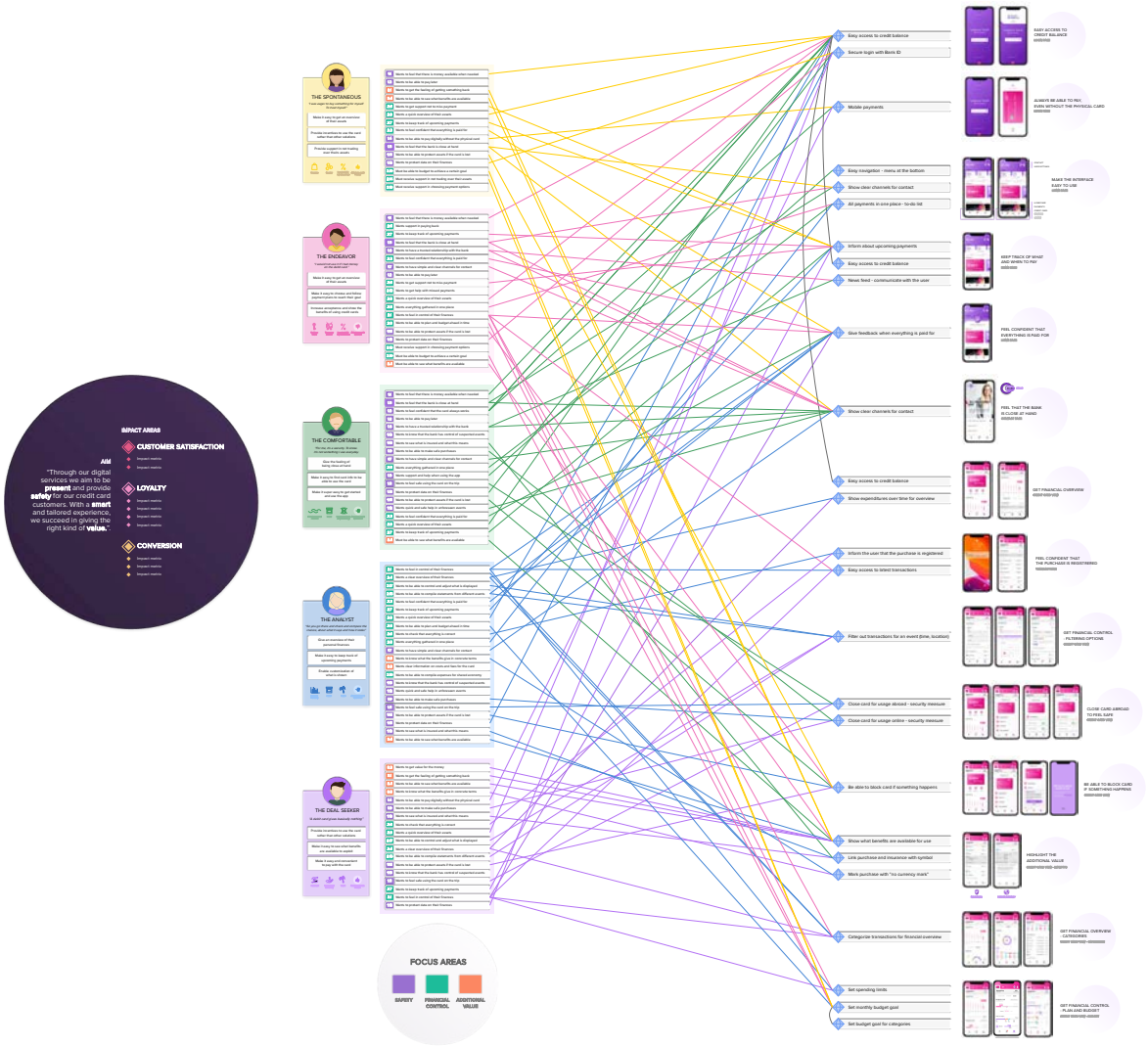

Figure 7.28. Impact map

7.5 Design Guidelines

Design guidelines has been formulated to define guidelines for designing an interface of a credit card service. Even though the final concept manifests how one could design an interface by using insights gained from researching the problem domain, this only demonstrate one solution to meet the needs and desired impact, while there are many ways. Furthermore, by iteratively going through the concept development phase, new insights have been gained that needs to be taken into account when designing an interface for mobile banking. Because of this, design guidelines have been formulated to conclude all knowledge derived from this study, and by this answer the research question of what to consider when designing an interface of a credit card service.

The guidelines are presented in the following figures (7.29-7.30):

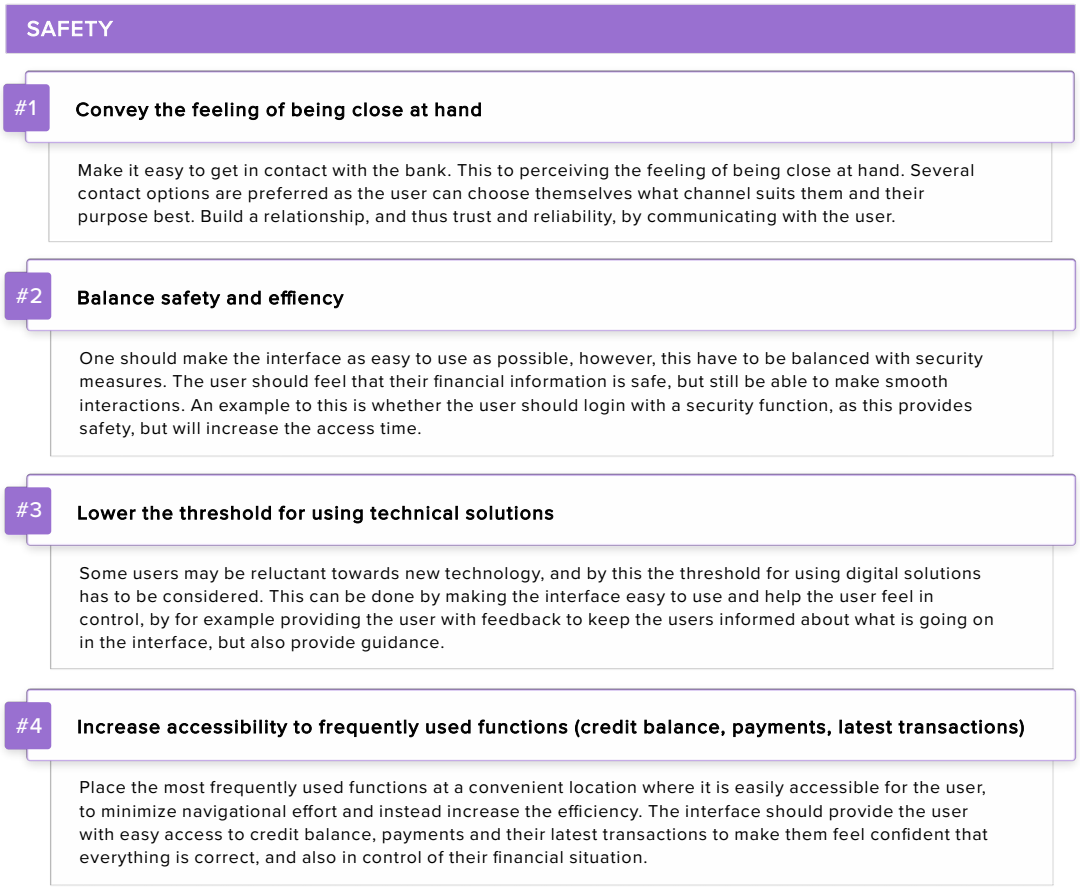

Figure 7.29. Guidelines - Safety

FINANCIAL CONTROL

#5 Provide financial overview

Give the user a financial overview by providing information about their expenditures. Both on their current state and previous months. This to make them aware of their expenses. Moreover, categorizing expenditures can help the user grasp what they spend their money on. Also, by providing filtering options and thereby customizability, the user will have the opportunity to summarize expenditures based on chosen parameters.

#6 Make it easy to keep track of upcoming payments

With a credit card, the user has an assignment to do after their purchase, as the payment is postponed. By this, they need support in remembering to pay their bills. Inform the user about upcoming payments - what and when they need to pay. This is to support the user to pay their invoices in time. Consider informing the user about the number of days until payment, rather than the actual date.

#7 Provide assurance when everything is paid

Assure the user when they are done with all payments, to make them feel confident that they have nothing left behind. This to give them positive feedback when they complete their payments. Also, assure the user when a transaction has been registered, to make them feel confident that their purchase has been completed.

#8 Support the user in reaching their financial goals by setting a budget

As a credit card provides a buffer, this gives access to more money than one may want to spend. Thus, to encourage a sustainable financial behavior one should consider to give the user the opportunity to plan ahead and set a budget, but also support the user to follow their financial plan. This could be done by providing feedback of how much the user has spent in comparison to their set goal. Moreover, notify the user when they are about to approach their limit, to trigger the user to change their behavior and stay within their budget.

ADDITIONAL VALUE

#9 Highlight the additional value of the credit card where its relevant for the user

Make it easy to grasp how the card will be beneficial for the user, by highlighting the additional value where it's relevant. For example, instead of providing a list with benefits hidden in a menu, consider to directly link the benefit with a purchase to acknowledge the user. By this, the user will be informed about their benefits when using their credit card.

#10 Balance the demonstration of benefits

Consider what value the demonstration of benefits gives the user. This is because, it should not come across as a selling persuasion or advertisement, but information provided for the user's best interest. Therefore, one should be careful to not be too pushy, but demonstrate the benefit where it gives value to the user.

#11 Be transparent about benefits and costs

Be as transparent as possible when it comes to costs versus benefits – what the user get. This to make the user feel informed about what deal is provided. This is also to build trust and reliance.

#12 Present the additional value in concrete terms

Provide the user with information regarding benefits in concrete terms. The user should understand what a certain insurance implies and be able to read more about the terms. This information should be easy to access to generate a feeling of being trustworthy.

Figure 7.30. Guidelines - Financial control & Additional value

8

Discussion

This chapter includes a discussion about the method and process applied in the project, the results of the study, and ethical considerations.

8.1 Methods Discussion

This section of the discussion chapter will bring up reflections regarding the working process and the selection of methods. The overall research strategy for this thesis has been Design-Based research, and the working process has been described by the double-diamond model. The double-diamond was used as a framework for the process, as this project would result in two main deliverables; insights from the data collection – give the bank a better understanding of their users –, and a concept of an interface on how these insights could be visualized.

8.1.1 Working Process

Since design could be seen as a wicked problem, a problem without a correct solution (Rittel & Webber, 1973), this means design is a continuous process of improvement. It has therefore been difficult to on beforehand plan the project in detail, as it can take a new turn when new insights emerge. As a result, our time plane has been revised during the project, to cope for new knowledge and insights that was gained during process. For example, some methods were excluded. This was partly because of the limited time. but also, because some was not as relevant as others when new insights had been gained. The analysis phase, which we thought would take three weeks, instead took five. This was because the large amount of data to analyze, but also because of the exploratory approach where codes in the data where found gradually, and by this we did not know on beforehand how much insights the data would give. Furthermore, we had to figure out how to visualize the insights in order to deliver these to the bank – to communicate the insights in an understandable and easy way. We had problem with how these should be visualized, and several iterations were thus carried out.

8.1.2 Interviews – the Selection of Participants

As previously mentioned in the report, the in-depth interviews were the main data collection method in this project. This was because, the aim was to identify user needs and customer behaviors in order to improve the digital user experience of the bank's credit card service - the app. The interviews were conducted with two main target groups; customers who had been registered since 2019, and new customers who recently applied for the card. The choice of having two different groups was partly to find out about the use phase – when they use the card and for what cause –, but also to get a clearer understanding from new customers of why they first applied for a credit card, their expectations on the card, and the election of choosing bank. New customers were chosen as the application process was closer in time, and by this they were thought to give more insights on the underlying needs of applying for a credit card. However, since the project was limited to the use phase, it would have been enough with interviewing customers registered 2019. This as the application process could be seen as not as important due to limitations. But since we were going to define behavioral archetypes, it was very important to not exclude questions regarding their driving forces to applying for a credit card.

The selection of using customers who had been registered and have had an active credit since 2019 can have affected the outcome – the insight and thus the final concept. This, since most of the interviewees were positive towards credit cards, which may have been different if conducting interviews with those who had been customers for a longer time. This is because, they might not have experienced any difficulties with the credit card yet and might only see the potential with it, as they are in the beginning of their customer experience journey.

In addition, the incentive of receiving a cinema ticket if participating might have trigged a certain type of person. Also, some participants may be more eager to take part in surveys in contrast to others. This, in turn, may have led to missing target groups and thus not been able to identify all behavioral archetypes that exist at the bank today. This must therefore be taken into consideration when it comes to the results of this study.

8.1.3 Prototyping

Low-fidelity prototyping was chosen as a method in order to test and conduct a formative evaluation of the concept. This to be able to gain insight into existing usability errors and thus have the ability to iterate and improve the concept. When utilizing low-fidelity prototypes for usability testing, the fidelity should be just enough to convey the intended message. This is because, if too much effort is spent on look and feel aspects, the design may seem more set, and by this the users may not be as keen as otherwise to give negative feedback. Moreover, when increasing the fidelity, the time and cost increases. Thus, in hindsight, we might have spent too much time on increasing the fidelity on the prototypes before testing. This was because, some ideas were rejected and adapted, and by this we would not have wanted to spend too much effort on them. Hence, as argued, it is a balance to make the prototype just enough detailed to embody the features one wants to test.

8.1.4 Usability Test - the Selection of Participants

The purpose of conducting usability tests was to get feedback about the interface and test if the intentions made was clear. Since the participants was design students, this may have led to a certain kind of criticism. This because the students were aware that the interface was created by us and could thus have withheld their true opinions. But also, by not carrying through the test with customers of the bank since the aim was to improve the experience for them. To only base the result on feedback from students, the validity can be questioned. Nevertheless, since most people have experiences in using digital banking services, and as design students are very used to give constructive criticism and thus good at verbalizing their thoughts and giving feedback, it worked very well to use them in the formative evaluation. The insights from the usability tests can therefore be considered as reliable and useful to be able to iterate and make improvements.

8.2 Results Discussion

This section will discuss the results of the study together with reflections on validity, reliability, and generalizability.

8.2.1 Behavioral Archetypes

The behavioral archetypes were mainly based on the results from the interviews but was also validated by the observational study, to see if the same patterns could be found in both methods. To discuss the outcome of the interviews, one can question whether we had to conduct 22 interviews or not. This since we felt a saturation on the answers, that we got the same answer, after conducting several interviews. Here, one must consider what kind of result one is aiming for – how well the results need to be validated and by this how much time and effort to put into the data collection. To easily define behavioral archetypes, we found it necessary to conduct all 22 interviews. Moreover, when continue to conduct interviews after feeling saturated, the validity and reliability increases. This as customers says the same thing and become a united and validated behavioral archetype. The analysis of the insights resulted in five different behavioral archetypes, and if not conducting all interviews, some may not have been identified. However, since not interviewing all customers, even more typical archetypes may be missing. Some participants may be more willing to take part in studies, and because of this a target group who are typically not willing to participate may be missing.

8.2.2 User Requirements List

The results of the user requirements list are elicited user needs derived from the preliminary study. Measures has been taken to make the results as reliable as possible, however, there are some things that could be brought up for discussion. To have a validated result, one should see that the results would be found regardless of the method, so that it is not an aftereffect of the chosen method. The requirements list was based on findings from the interviews, and the observational study did contribute to the validation of the results. In addition, some aspects derived from the preliminary study was also found in previous research. The focus areas that categorized the user requirements list was set to safety, financial control, and additional value. As an example, according to previous research (Bomil & Han, 2002), the importance

of trust has been pointed out, thus what has been formulated as safety in this report. Hence, one can draw the conclusion that this factor has been seen in other studies, and by this be a valid point for a good user experience when designing a credit card service.

8.2.3 Concept Development

The results of the concept development were a high-fidelity prototype, which included suggestions for how the user needs could be fulfilled in an interface. This was founded on the insights gathered during the preliminary study; hence, it may have a high probability to be solving actual user needs. However, one cannot conclude that this will be the case, as the concept has not been validated with user's representative of the target group. Hence, as design is a continuous process of improving concepts to better solve user needs and by this improving the human condition, one may never end up with the right concept which will be suitable and validated for all situations. Furthmore, user needs are constantly changing, and because of this the validation of concepts needs to be done gradually, to cope for future demands.

8.2.4 Design Guidelines

Guidelines were set in order to conclude all insights and knowledge gathered through this project. Since the focus areas – safety, financial control and additional value - were identified to be important throughout the whole project these became overarching categories. The guidelines should be followed as a rule of thumb and will not generate the same design concept as the proposal of this study. Also, because the proposal generated new insights which the guidelines are built upon.

Design Guidelines: Safety

The first four guidelines states considerations regarding safety. The first one, *Convey the feeling of being close at hand*, highlight the need of providing clear contact channels and building trust and reliance to make the user feel that they have a good relationship with the bank. As discussed in the introduction to this thesis, banks now have new challenges to face because of the digitalization – hence, how to design digital experiences. As the customer does not have a bank office to visit, digital platforms such as an app will have to convey the value of being present and provide support when needing to contact the bank. Even though interviewees expressed the need of having clear contact channels during the data collection, one could discuss if the need of contact the bank will sustain, or if self-services will increase as users get more comfortable using for example chatbots and finding their own answers. Because of this, it is important to regularly inquiries about what the users need in order to design experiences that gives meaning for them.

The second guideline, *Balance safety and efficiency,* highlights the consideration that has to be made regarding implementing safety measures, when still making the interaction smooth and efficient. It is important to make the user feel safe, that their financial information is secure, which was brought up during the interviews in this study. However, when implementing functions for this in the concept development, this implied more excise. An example of this is the login page, where the user in the final concept has to log in to the application by using Bank ID. To lower the access time and make the interaction smoother,

a secure login as the one proposed may need to be considered if its needed. For example, if there is some information that does not have to be secured behind this login functionality.

Another thing to discuss regarding this guideline is how to be able to make safe purchases, but still make it easy to pay. For example, when shopping online, a functionality that will make the user feel safe is if they have to verify their purchases by, for example, using Bank ID. However, this means a less efficient payment as the user has to complete the verification. Because of this, one has to balance safety and efficiency to conclude what is most important for the interaction. Moreover, this could perhaps be customizable, to tailor the experience to the needs of the user.

To point out another aspect about the guideline *Balance safety and efficiency*, one could question whether one always should strive for lowering the access time. One example with this is when blocking the credit card. This is something the user should not be able to do by mistake, and by this it should possibly not be too easy to fulfil the assignment. The usability test gave insights about this, as one participant stated that needing to verify the action by using Bank ID, was a sufficient way of highlighting that a critical action was going to be made. By this, the security measure was appropriate in favor for having easy access.

The third guideline, *Lower the threshold for using technical solutions*, highlights the need of making interfaces easy and simple to use. This is to cope for potential obstructiveness towards new technology and digital solutions, which was identified as a recurring theme during interviews. This was later expressed in the definition of the behavioral archetype *The Comfortable*, saying that this target group was sometimes a bit reluctant to changes and thereby using new ways of interacting with banks. To meet this guideline, one should therefor for example make the user feel in control and provide guidance when using the bank app. One thing that was brought up during the usability test was to give the user feedback of where they are in the interface, for example by highlight the icon in the menu. Moreover, by using words the user is used with, and not complicate things, may help the user feel more confident when using a bank application.

The fourth guideline, *Increase accessibility to frequently used functions (credit balance, payments, latest transactions)*, implies the importance of having access to functions that the user utilizes regularly. For credit card consumers, the importance of wanting to check their credit balance, upcoming payments and latest transactions was brought up as important functions, as the user wants to check these regularly. Hence, one finding from this study is that the user wants to check that everything is correct regularly, by for example look up their latest purchase or make sure that they have enough credit to pay. During the usability test, it become evident that users appreciated having these functions easily accessible.

Another thing to consider regarding accessibility is the clicking area. This become evident during the usability test, where two interactions were tested for giving fast access to credit balance – holding a button and swiping down. As the swipe could be done by swiping down anywhere on the screen, while the button was isolated to the area of the button, the accessibility increased by the swipe, and by this it was a more convenient interaction. Consequently, when considering accessibility, clicking area is one important factor to consider.

Design Guidelines: Financial Control

For the second theme, financial control, four guidelines were defined to manifest what insights had been gained regarding this focus area. The first one, *Provide financial control*, was presented to aim attention at presenting information regarding the users expenditures, and by this acknowledge the user about their financial behavior. During the user research, when interviewing users, it became evident that the need of presenting data about their finance varied. Some were very interested in analyzing their financial data, and wanted to customize and filter out expenditures, while others did not express any need to analyze what they used their money for.

During the concept development phase, the aim of providing financial control was elaborated on. The usability test provided insights regarding the importance of displaying the data using appropriate graphs. As an example, for the prototyped used in the test, expenditures were shown in a continuous curve. However, the points building up the curve was the amount spent for each month, and by this it was difficult to grasp if the curve showed values for each day or the total amount of each month. A more appropriate visualization for this was decided to be bars. Hence, one need to consider the graphical visualization of how the financial data is displayed, in order to provide financial control.

With a credit card, the user has an assignment to do after their purchase, as they postpone their payments. This is why the second guideline - *Make it easy to keep track of upcoming payments* – was acknowledge as important when designing an interface of a mobile banking app. During the concept development phase, important factors that became apparent was, for example, the order of displaying payments, and also how to present when to pay. Number of days until payment was chosen in favor for the actual due date, but providing the information in both variations was also thought to be appreciated. However, this has to be weight against how much other information is displayed in the interface, as too much information can make it more difficult to find what the user is looking for.

The guideline *Provide assurance when everything is paid* puts attention on giving feedback when everything is paid for. During the concept development phase, the design of the state when not having something to pay was discussed, and it was tested to provide this information by having a check mark symbol at the start page. The usability test showed that this design was a way to provide assurance, that the user had completed their task of paying their bills. As a participant in the usability test put it “It's a positive message. The bank is happy that I paid my bills - and so am I.” Hence, it is important to also think of this state, as this is a great opportunity of making the user feel confident that they have done their part and has not any assignments on their schedule. Moreover, it is a way to express confirmation from the bank, that it is acknowledged that the user has paid their invoices.

The final guideline for financial control was defined as follows; *Support the user in reaching their financial goals by setting a budget*. The aim with this guideline was to highlight the importance of encouraging a sustainable economic behavior and support the user in not spending over their assets. As a credit card may provide a buffer for some users, this means having access to more money than one wants to spend during a month. Because of this, there may be a need to set up limits or a budget of how much the user plan to spend.

Nevertheless, this guideline may be tricky, as users who would need to set up a budget may not be the ones who utilizes the functionality if it's provided voluntarily in an interface. This was discussed during the design phase, thus, how to support users in not spending over their budget. Another aspect that was discussed is how easy it should be to change the budget when one has set a goal. If it is too easy, this may not work as a goal, as one can just change the budget as one approach the limit. In addition, it should be discussed how the feedback of crossing the limit should be delivered, to not make the user give up but continue to strive for reaching their financial goals.

Design Guidelines: Additional Value

The last four guidelines present rules of thumb regarding the overarching theme of showing the additional value with the credit card.

The first guideline regarding this category, *highlight the additional value of the credit card where its relevant for the user*, refers to the importance of placing the information where it's needed. As proposed in the final concept, the additional value is highlighted in direct association with the purchase, and by this the user will get the information where it's valid, instead of having a list of benefits hidden in a menu.

However, it is important to consider how much one should display the benefits, so it not come across as advertisement. This is why the second guideline has been defined to *Balance the demonstration of benefits*. This is based on insights from the usability test, as participants expressed that it is important that it does not feel as the bank is too pushy with demonstrating the benefits, thus, it should not contribute to a cluttered interface.

Another important aspect regarding a credit card service is transparency. In other words, as the 11th guideline is defined, *Be transparent about benefits and costs*. This means it is important to be straightforward with costs so they can take informed decisions, and not nudge people to a decision because they mistake the terms and conditions.

The last guideline defined, *Present the additional value in concrete terms*, put light on presenting the benefits in a way that is graspable for the user. In the concept development, as previously mentioned, there was a suggestion made to show benefits directly on a transaction. To make it easier to understand what the benefit meant, there was added a link saying, "What does this mean?" that opened a popup describing in concrete terms what the value was. During the usability test, users asked when thinking out loud, "Ok, so this purchase does not have a currency charge, but what does this mean?". Hence, it was important to have information of what the benefit was and how it could be utilized, in concrete terms.

8.2.5 Generalizability

When it comes to the study, this project has been conducted for a specific bank, but the question is whether it is sufficiently generalizable for other banks to be able to use the insights and guidelines for developing their digital banking services?

The overall strategy for this thesis has been Design-based research, and as argued by The Design-Based Research Collective (2003), the objectivity of the research conducted with this approach may always be questioned. This is because, the result of the research, such as guidelines or user requirements may not be applicable for all contexts, as the result is dependent on complex settings.

As mentioned in the limitation, the developed concept is tailored to the customers of the bank and may not be applicable to any credit card service. This since the insights are built on existing customers of the bank, their behaviors, attitudes and needs, and no other population. The generalizability is therefore considered to be relatively low. Nevertheless, it is possible that these archetypes also exist at other banks, which could indicate that the developed guidelines are generalizable to some extent. But as said, it depends on the context.

8.3 Ethical Considerations – Consumerism

One ethic consideration raised in chapter 1.7 was about consumerism and how to design the solution to provide the user to make conscious choices regarding their finances – to make the user more in control and aware of their expenses and financial situation. Since we didn't want to contribute to consumerism, and based on our insights gathered from data collection, our final concept resulted in having the ability to set a budget and categories for their expanses, together with provide the user with an overview of their transactions. This could steer the user to make better decisions regarding their economy and thus, make them more aware of their finances. However, since banks make money when their consumer use the card in a greater extent and chooses to pay on installment, this could lead to consumers to use the card lesser, which in turn generate less revenue to the bank. Therefore, it is difficult to argue whether the bank should take such a function into account when developing a new user interface.

8.4 Future Work

This section will describe suggestions for future work.

- Explore excluded functions

As some functions were excluded for the concept development, due to time limitations, it is suggested for future work to explore how the excluded functions may be designed. This is because, the design does not cover the full interface of the app, and by this it is suggested for future work.

- Validate concept development

To further validate the results, more iterations should be completed and validated. Due to lack of time we opted to limit the project and thus not test the concept on customers of the bank. By this, one cannot draw the conclusion that this will fulfil actual user needs, even if it's a high probability as it is based on the study conducted in this thesis. It is therefore suggested for future work to test the concepts with participants of the target group.

- Implementation of concept development

As the results of the concept development is a high-fidelity prototype, accordingly the implementation stage is a suggested future work. Thus, to implement the ideas in the current interface of the app. As this concept development is independent from the previous app, one will have to consider the visual guidelines and design system of the bank. However, as mentioned previously, it should be considered to validate the concepts with users before implementation.

- Measure desired impact

Together with stakeholders of the bank, the impact areas *customer satisfaction*, *loyalty,* and *conversion* were set together with goals for a desired outcome for the product, thus the digital channels of the credit card service. Because of this, it is suggested for the bank to measure if the desired impact is met, if taking actions towards the set goals, by for example implementing functions from the final concept.

9

Conclusion

The aim of this project has been to answer the following research question:

What guidelines could be considered in order to improve the user experience when designing an interface of a digital credit card service?

- What are typical behaviors of credit card consumers?
- What needs and requirements can be identified of the consumers of a credit card service?
- What design solutions for an app interface could be developed to meet the needs of the credit card consumers?

To answer what typical behaviors of the credit card consumers could be identified, the findings from the data collection was concluded in five behavioral archetypes: *The Deal Seeker*, *The Analyst*, *The Comfortable*, *The Endeavor* and *The Spontaneous* (Figure 9.1). Thus, these archetypes summarized typical behaviors of the credit card consumers.

The needs and requirements identified in this study has been concluded in a user requirements list, divided in three focus areas: safety, financial control, and additional value. Moreover, three impact areas have been formulated together with the bank to set a shared vision for future development: customer satisfaction, loyalty, and conversion (*Figure 9.1).* The focus for this study has been on customer satisfaction. The concluded needs have been prioritized based on their contributed value to an improved user experience and the fulfilment of the desired impact according to the business.

To answer what design solutions could be developed to meet the needs of the credit card consumers, a design process has been followed through. This has been done by starting with ideating on functions and low-fidelity prototyping, iterating by doing formative evaluation in form of a usability test and then ended in a final prototype (*Figure 9.1*).

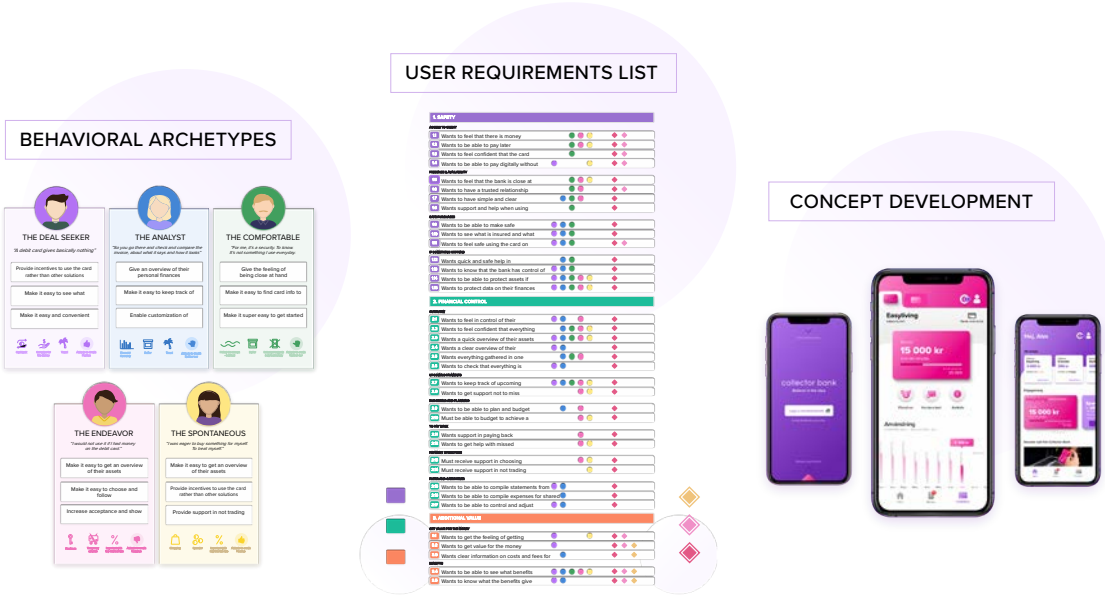

Figure 9.1. Conclusion – Summarizing results

To answer the overarching research question of what could be considered in order to improve the user experience when designing an interface of a credit card service, guidelines have been formulated to conclude all knowledge gained from this study. Hence, this is founded on the defined impact areas, the identified focus areas, user needs, and behavioral archetypes. Moreover, the guidelines are also based on insights gained from the concept development phase. Thus, by designing, testing, and evaluating, knowledge has been attained on how to fulfill the user needs and meet the desired impact.

The following guidelines (*Figure 9.2*) defines what to consider in order to improve the user experience when deigning an interface of a credit card service:

Figure 9.2. Conclusion – Design Guidelines

The conclusion is that all research questions has been answered by following through a design-based research project, including a preliminary study and concept development phase, where all gained knowledge has been formulated as guidelines for designing an interface of a credit card service.

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Appendix A. The manuscript

FRÅGOR

- Kan inte du börja med att berätta lite kort om vem Du är?

ANSÖKAN

- Hur gick det till när du ansökte om vårt kort? Kan du berätta lite om hur du gick tillväga då?
    - Hur kom det sig att du valde Collector Bank?
    - Kände du till Collector Bank sedan tidigare?
    - Hur kom du i kontakt med Collector Bank?
- Var ansökningsprocessen som du förväntade dig?
    - Varför/Varför inte? Var det något som var bra/dåligt?
    - Hur gick du tillväga för att aktivera det? Var det lätt/svårt? Visste du vad/hur du skulle göra?
    - Vad tyckte du om informationen du fick?
        - Var det tillräckligt för att du skulle kunna komma igång och börja använda kortet?
        - Saknades någon information?
- Hade du ett kreditkort sedan tidigare? Har du fler än ett kreditkort?
- Delar du kortet med någon anhörig? Har du gemensam ekonomi?
- Vad var anledning till att du ansökte om ett kreditkort? Vilket syfte tänkte du använda det för?
    - Varför tog du inte ett vanligt lån? (om dem har konstigt köpbeteende)

KREDIT

- Vad tänker du på när du hör ordet kreditkort? Vad känner du då?
- Vad skulle du säga är skillnaden på ett betalkort och ett kreditkort?
- Varför ska man ha ett kreditkort enligt dig?
    - Vad tycker du är fördelen för Dig med att ha ett kreditkort?
    - Finns det någon nackdel för Dig med att ha ett kreditkort?
    - Finns det något tillfälle du INTE skulle använda ett kreditkort?
- Skulle du rekommendera ett kreditkort till en vän?
    - (Om ja) Om du nu rekommenderar din vän ett kreditkort, vad skulle du säga då? Varför skulle du rekommendera dem att skaffa ett?

ANVÄNDNINGSFAS

- Kan du berätta om senaste gången du använde ditt kreditkort?
    - Vad skulle du köpa? När valde du att betala fakturan? Behövde du logga in på appen eller webben?

Om vi går in på lite andra sammanhang där kreditkort kan användas.. Du nämnde att du använder kortet när du... Men hur gör du när du tex:

- Handlar online?
- Har du bil? Hur betalar du för bensinen isf?
- När du är ute och reser?
- Delbetalning eller allt på samma gång?
    - Hur la du upp delbetalningen? Minsta belopp? Räknat ut själv? Gjordes det i appen eller hur? (*Kan vi underlätta/göra det bättre för dem här*)
    - Vad är delbetalning enligt dig?
- Har det gått fel någon gång som du kan komma på i relation till ditt kreditkort eller dina krediter?
    - Berätta vad hände då?
- Händer det att du följer upp och kollar vad du har köpt i efterhand?
    - Hur gör du det då?
    - Om ja: Hade du velat göra det på ett annat sätt än hur du gör idag?
    - Hur ofta kollar du saldot på ditt kreditkort?

APP/WEBB

- Hur gör du idag när du hanterar dina bankärenden hos oss?
- Vilken plattform använder du helst för dina bankärenden? (T.ex. App (IOS el Android?, webb, kundtjänst, autogiro...)
- Vad var det senaste du gjorde? Hur gick du tillväga?
- Hur ofta skulle du säga att du använder [plattform]?
- Vad använder du vanligtvis [plattform] till?
- Hur tycker du att Appen är?
    - Förstår du hur den fungerar? Saknas det någon kommunikation för att du ska förstå den bättre?
    - Något som saknas i appen?

FÖRMÅNER

- Var förmåner en bidragande faktor till att du ansökte om Kreditkort? Varför?
- Om ja : Vilka förmåner var du mest intresserad av?
- Hade du valt detta kort även om den inte hade haft dessa förmåner?
- Har du nyttjat någon av dessa förmåner?
    - Hur gick du tillväga när du använde dessa förmåner?

FRAMTID

- Nu finns det ju tjänster som där man kan betala med mobilen, tex Apple Pay, vad tycker du om sådana tjänster?
- Hur tror du att vi kommer betala i framtiden?
- Om det finns en sak som vi hade kunnat lösa för dig gällande kreditkort redan imorgon, vad skulle det vara då?
- Är det något mer du tycker att vi bör ta med oss för att förbättra användarupplevelsen av våra kreditkortstjänster?

AVSLUT

- Är det något annat du vill tillägga till intervjun? Har du några frågor innan vi avslutar?

Appendix B. The Deal Seeker – Summary

DEN MÅLINRIKTADE

Valuta för pengarna | Cashback | Resa | Attityd till kredit: Varken eller

"Ett betalkort ger ju i princip ingenting"

SAMMANFATTNING

Den målinriktade är kunden som efterfrågar den bästa dealen. Hen är ständigt på jakt efter kreditkort med dem bästa förmånerna och anser att inget kort är det mest optimala. Hen har därför flera stycken kreditkort. Den målinriktade ser kreditkort som ett betalsätt där hen kan få någonting tillbaka – hen vill ha valuta för pengarna. Eftersom förmåner är det som sporrar Den målinriktade är det viktigt att dessa finns lättillgängliga. Detta för att enkelt kunna se vilka förmåner som finns att utnyttja.

BEHOV

- Vill få känslan av att få någonting tillbaka
- Vill kunna se vilka förmåner som finns att utnyttja
- Vill kunna genomföra smidiga köp

DESIGNUTMANING

- Ge incitament för att använda kortet
- Gör det lätt att se vilka förmåner som finns att utnyttja
- Gör det superlätt att betala med kortet

ANSÖKAN

För att hitta det bästa kortet som motsvarar Den målinriktades behov och önskemål används jämförelsesidor när nya kort eftersöks. När Collector Banks kort Easyliving valdes fick hen ett erbjudande om att få ett avgiftsfritt år. Eftersom Den målinriktade drivs utav erbjudanden och förmåner blev detta ett incitament till varför hen valde just Collector Bank – "Jag ville ha ett kort som inte kostade".

DRIVKRAFTER

Förmåner är för Den målinriktade väldigt viktigt och ett kreditkort innebär att hen kan få någonting tillbaka i jämförelse med ett betalkort - "Ett betalkort ger ju i princip ingenting". Den målinriktade vill ha valuta för pengarna. I detta fall var Den målinriktade ute efter ett resekort som framförallt inte hade något valutapåslag och som innefattade reseförsäkringar. Eftersom Collector Bank och deras kort Easyliving erbjuder dessa förmåner blev detta kort ett självklart val för Den målinriktade.

ATITITYD OCH BETEENDE

Eftersom Den målinriktade alltid är ute efter den bästa dealen söker hen aktivt efter nya kort som ska uppfylla kraven. Är Den målinriktade inte nöjd är hen inte rädd för att gå vidare och leta efter andra kreditkort. Hen använder kreditkort som sitt primära kort och ser det bara som ett betalsätt. För att se till att få ut så mycket som möjligt av kreditkort har Den målinriktade flera olika kort – kort för olika ändamål.

Att känna sig trygg vid användandet av ett kreditkort är viktigt. Hen tycker att alla köp som görs online ska verifieras men vill också att kortet ska erbjuda en möjlighet till att kunna öppna och stänga kortet för t.ex onlineköp. Detta för att öka säkerheten vid användandet.

BETALNING

Räntan är ingen viktig faktor när Den målinriktade väljer kreditkort eftersom hen alltid betalar allt på samma gång i nästkommande månad – "För mig gör det inget om det är hög ränta, för jag har ändå inte tänkt använda krediten på det sättet". Betalning av fakturorna görs via internetbanken för att ha allt samlat på ett och samma ställe.

DIGITALA TJÄNSTER

Att använda sig av digitala tjänster är för Den målinriktade inget ovanligt. Hen är positiv till ny teknik och tycker att det känns säkrare att betala med mobilen än att använda ett fysiskt kort. Detta då mobiltelefonerna idag oftast har ansiktsigenkänning och verifiering med hjälp av fingeravtryck. Att ha kort i mobilen känns också mycket smidigare då hen slipper ta med sig plånboken överallt.

Collector Banks app är ett självklart val när Den målinriktade vill gå igenom sina fakturor och kolla så allt stämmer. Hen kollar vad hen har köpt och kan med hjälp av appen enkelt se sitt kreditsaldo.

Appendix C. The Analyst – Summary

ANALYTIKERN

"Så går man in där och kollar och jämför med fakturan om vad som står och hur det ser ut"

SAMMANFATTNING

För Analytikern är det väldigt viktigt att känna att hen har koll och kontroll över sin ekonomi. Hen är en noggrann individ som gillar att organisera och strukturera – att ha ordning och reda. Det är därför viktigt att det finns bra möjligheter till att enkelt kunna sammanställa och följa upp sina utlägg. Analytikern tycker att ett kreditkort medför ett flexibelt sätt att kunna planera och budgetera sin ekonomi.

BEHOV

- Vill känna kontroll över sin ekonomi
- Vill känna sig trygg i att allt är betalat
- Vill kunna sammanställa och följa upp utlägg från olika sammanhang

DESIGNUTMANING

- Ge en helhetsöversikt över ekonomin
- Gör det lätt att få koll på betalningar
- Gör det möjligt att styra och anpassa vad som visas

ANSÖKAN

När Analytikern sökte efter ett nytt kreditkort var hen ute efter både ett resekort och att ha kortet som en buffert. Då hen tidigare var kund hos Collector Bank kände hen att det vore bra att ha allt samlat på ett och samma ställe. Men för att säkerställa att Collector Bank hade ett kort som uppfyllde det som eftersöktes valde Analytikern att gå via en jämförelsesida. Eftersom Easyliving var det kort som erbjöd de bästa förmånerna enligt Analytikern blev valet enkelt.

DRIVKRAFTER

Anledningen till att Analytikern valde att skaffa kreditkort hos Collector Bank var för att hen var kund sedan tidigare och kunde på så sätt få allt samlat på ett och samma ställe. Det är viktigt för Analytikern att känna att hen har koll och kontroll på sin ekonomi, för att kunna se vart kostnaderna går och budgetera framåt.

Drivkraften till att skaffa ett kreditkort från början var för att ha det som ett resekort - vilket ger bra förmåner som inget valutapåslag och reseförsäkring, men gör också att hen får kostnaden för resan samlat på ett kort. Väl hemma kan kreditkort vara bra att ha som en buffert – "En trygghet - lite extra pengar om det verkligen skulle skita sig någon gång". Kreditkortet genererar på så sätt flexibilitet och ett sätt att periodisera utgifter.

ATITITYD OCH BETEENDE

Analytikern är väldigt noggrann och vill ha koll på allt. Det är viktigt att Collector Bank fungerar som en mellanhand för att få känslan av att dem finns där när det behövs, om något skulle hända med kortet. Analytikern har tidigare varit skeptisk till att använda kreditkort just för rädslan över att tappa kontrollen över sin ekonomi. Men denna inställning har ändrats då Analytikern har insett att hen får bättre koll med att använda ett kreditkort.

Kreditkortet används enbart för det ändamål som kortet ansöktes för - till resor och ha som buffert ifall något oförutsägbart skulle hända. Det innebär att Easylivingkortet inte är Analytikerns primära kort.

BETALNING

När det kommer till betalning betalar Analytikern alltid allt på samma gång. Hen vill inte ha någon skuld och vill slippa känna att "Du har en skuldbörda framför dig". Hen vill inte delbetala för Analytikern "vill inte använda kortet på det sättet". Eftersom hen har målet om att alltid vara i fas finns en viss oro över att missa en betalning. Därför är det viktigt med kommunikation om när en faktura ska betalas. Eftersom Analytikern vill ha allt samlat på ett och samma ställe genomförs betalning av fakturor från Collector Bank via sin internetbank, där andra betalningar sker.

DIGITALA TJÄNSTER

För att ha koll på sin ekonomi använder Analytikern appen och tycker det är ett bra sätt för att få tillgång till att se över sina fakturor och kolla så att allt stämmer, samt för att få tillgång till sitt kreditsaldo. Att använda sig av appar och dylikt är inga konstigheter för Analytikern. Eftersom Analytikern var kund sedan tidigare används appen även för att ha koll på sina andra engagemang hos Collector Bank.

Appendix D. The Comfortable – Summary

DEN KOMFORTABLA


Följer strömmen - vanemänniska


Buffert


Skeptisk mot ny teknik


Attityd till kredit: Varken eller

”Så för mig är det en trygghet. Att veta liksom. Det är inget jag använder daglidags.”

SAMMANFATTNING

Den komfortabla är en lugn och trygg person som vill ha kreditkortet som en buffert om det skulle krisa. Hen vill känna sig trygg med att kortet alltid fungerar. Sen att det finns vissa förmåner är något som hen bryr sig mindre om. Det viktiga är att man kan lita på banken och att det finns enkla och tydliga kanaler för kontakt. Den komfortabla är en vanemänniska som gärna gör som hen alltid gjort, och är inte så mycket för att använda ny teknik.

BEHOV

- Vill ha en trygg relation med banken
- Vill känna sig trygg i att kortet alltid fungerar och att det finns en buffert
- Vill ha enkla och tydliga kanaler

DESIGNUTMANING

- Ge känslan av att Collector Bank finns där - ”Syns man inte så finns man inte”
- Gör det lätt att hitta till kortuppgifter för att kunna använda kortet
- Gör det superlätt att komma igång och använda appen

ANSÖKAN

Den komfortabla hade gått i tankarna om att skaffa ett kreditkort ett tag, men det var först när hen skulle resa som den komfortable tog tag i saken och ansökte. Detta eftersom Den komfortabla inte ville ha med sig sitt vanliga betalkort och slippa kontanter - ”Det känns tryggare att använda kreditkortet utomlands om något skulle hända, skulle det bli stulet så är det inte så hög kreditgräns.” Dessutom kan det vara bra att ha hemma som en buffert, om något oförutsett skulle hända.

Att valet föll på Collector Banks kort Easyliving berodde på att sambon hade samma kort och var nöjd – ”Jag kände att det är dumt att prova något annat, om det redan är inom familjen godkänt. Då kan man gott fortsätta med det.”

DRIVKRAFTER

Motivationen till varför Den komfortabla tog steget till att skaffa ett kreditkort var för att ha med sig det på en resa, då det är en trygghet om något skulle hända. Väl hemma har hen sedan kortet som en buffert, om bilens växellåda skulle rasa eller katten skulle behöva besöka veterinären.

Den komfortabla vill ha en ”trygg bank med inte jättehög ränta” och har gärna sina lån och krediter samlade hos en och samma bank. Det är viktigt att banken finns där om något skulle hända. Den komfortabla är inte så noga med extratjänster eller annat tjafs, det viktiga är att det krediten kan användas när den behövs.

ATITITYD OCH BETEENDE

Den komfortabla har inte själv några problem med att ha ett kreditkort, hen betalar in räkningen när den kommer och köper inte mer än nödvändigt. Hen funderar inte så mycket på vad hen har för typ av kort. Dock skulle Den komfortabla inte rekommendera kreditkort till vem som helst - “Det där är från person till person. Alla människor kan inte ha ett kreditkort. Det brinner i fickan. Man köper det man inte behöver, hej och hå liksom.”

Kreditkortet är inget Den komfortabla använder till vardags. ”Det är ju som sagt att vi lägger bort det när vi är hemma i vardagen. Då ger inte det någonting, utan det är väl mer det vanliga bankkortet. Så att det är väl mer att det känns som en trygghet och säkerhet.”

BETALNING

Den komfortabla delbetalar i lugn och ro. Hen funderar inte så mycket utan betalar det som står på fakturan, och betalar ibland in lite extra. ”I vårt fall så har vi inte ens betalat av allting utan vi betalar och skjuter till lite extra när vi har den möjligheten för vi vet att det inte är någon ockerränta utan det är normalränta på det.”

DIGITALA TJÄNSTER

Den komfortabla erkänner att hen kan vara lite gammalmodig när det kommer till teknik, till exempel är Swish något som hen inte har ännu. Dock tycker hen att det är bra att appen finns, för det blir en plats där Collector Bank finns tillgänglig om det skulle vara något - ”...det är väl en trygghet att man vet att ni finns någonstans i världen”.

Appendix E. The Endeavor – Summary

STRÄVAREN

Problemlösare | Viktigt med låg ränta | Kredit - Tillfällig lösning | Attityd till kredit: Negativ

"Jag skulle inte använda det om jag har pengar på betalkortet"

SAMMANFATTNING

Strävaren är en visionär som ofta föreställer sig hur framtiden ska se ut. Hen vill helst inte använda kreditkort men ser det som en kortsiktig lösning på sina problem – det finns ett behov av pengar. Eftersom Strävaren delbetalar vill hen känna att Collector Bank finns nära till hands om problem skulle uppstå med betalningen. Att erbjuda förslag på betalningsupplägg är därför något som skulle kunna visa på att banken stödjer och månar om sina kunder.

BEHOV

- Vill känna att det finns pengar tillgängliga vid behov
- Vill ha stöd i att betala tillbaka
- Vill känna att Collector Bank finns nära till hands

DESIGNUTMANING

- Gör det lätt att få översikt över sina tillgångar
- Gör det lätt att välja och följa betalningsupplägg för att nå sitt mål
- Öka acceptansen och visa fördelarna med att använda kreditkort

ANSÖKAN

Strävaren har blivit kund då hen har fått ett riktat erbjudande om att samla lån och kredit hos en kortutgivare och på så sätt kunna sänka räntan. När hen ansöker om nya kreditkort går hen gärna in och jämför kort på nätet. Detta för att framförallt se vem som erbjuder kredit till lägst ränta.

DRIVKRAFTER

Strävaren har, precis som sin titel antyder, en strävan efter att uppnå ett visst mål med kreditkortet – hen har ett problem som behöver lösas. För Strävaren ger ett kreditkort en möjlighet till att investera för framtiden och nå en bättre livssituation, t.ex. genom att betala för körkort eller annan utbildning. Det kan också vara ett sätt att komma ikapp ekonomiskt, eftersom ett kreditkort erbjuder möjligheten till att delbetala tidigare utgifter – med andra ord sprida ut kostnaderna över en längre tid. En låg ränta är därför en viktig faktor för Strävaren, medan andra förmåner är av mindre vikt. En drivkraft till att skaffa ett kreditkort hos Collector Bank var också för att få sina lån och krediter samlade på ett och samma ställe.

ATITITYD OCH BETEENDE

Strävaren är nödvändigtvis inte positivt inställd till kreditkort, snarare tvärtom. Strävaren ser ofta kreditkortet som en tillfällig lösning, och vill säga upp kortet när målet är uppnått – när problemen är lösta. Hen anser att ett kreditkort endast ska användas av dem som kan hantera det, för sådana som inte handlar utöver sina tillgångar. Detta då hen tycker att det kan vara svårt att förstå värdet av pengar och ha kontroll när man använder ett kreditkort jämfört med kontanter. Hen skulle därför inte rekommendera ett kreditkort till vem som helst.

Kreditkortet används enbart vid behov, när det finns problem som behöver lösas, och har därför sitt betalkort som sitt primära betalsätt - "Jag skulle inte använda det om jag har pengar på betalkortet".

BETALNING

Strävaren delbetalar sina fakturor utefter sin förmåga. Oftast är det lägsta summan men kan ibland betala till lite extra när det finns möjlighet. När en faktura ska betalas går Strävaren via sin internetbank.

DIGITALA TJÄNSTER

Strävaren använder digitala tjänster, men tycker att det krävs lite tid innan man kommer igång. Det är en vanesak, precis som det tar tid innan man kommer in i att använda "blipp"-funktionen på kortet. Hen använder appen och går in och "slötittar", ser vad som ska betalas och när, samt vad som har handlats.

Appendix F. The Spontaneous – Summary

UNNAREN

Shopping

Viktigt med låg ränta

Spenderar

Attityd till kredit: Positiv

"Jag var sugen på att köpa något till mig själv. Jag unnade mig lite grann"

BEHOV

- Vill ha snabb översikt över sina tillgångar
- Vill få känslan av få någonting tillbaka
- Vill kunna handla nu och betala senare

DESIGNUTMANING

- Gör det lätt att få översikt över sina tillgångar
- Ge incitament för att använda kortet
- Ge stöd i att inte handla över sina tillgångar

SAMMANFATTNING

Unnaren är en spontan individ som ofta shoppar för att unna sig. Kreditkort är för Unnaren något positivt då det ger en möjlighet till att kunna handla redan idag och sedan betala i den takt hen själv vill. Att ha snabb tillgång till sitt kreditsaldo är viktigt eftersom Unnaren lätt vill kunna se om möjligheterna finns att köpa det hen önskar. Eftersom Unnaren är en trogen kund tycker hen att det vore trevligt att känna att man får någonting tillbaka.

ANSÖKAN

Unnaren har blivit kund efter att ha handlat på faktura hos andra företag, och på så sätt kommit i kontakt med Collector Bank. Hen var nyfiken på ett nytt kreditkort och valde att testa att ansöka om ett Easyliving-kort - ”Jag hade handlat på mat.se och använt den här appen. Och jag var nyfiken på att handla något på nätet, det var något erbjudande så jag tänkte bara testa den. ”

DRIVKRAFTER

Unnaren är en person som använder kreditkortet för att kunna köpa det hen önskar. Detta för att kunna ta del av erbjudanden eller unna sig vid behov, för att sedan lägga upp en delbetalning. ”Jag gillar möjligheten att man kan delbetala, att man inte behöver betala allt om man inte har pengar.”

Unnaren tycker att det kan vara värt att betala lite extra för att få något man önskar direkt, men räntan är fortfarande en viktig faktor. Hen är intresserad av förmåner i form av erbjudanden och gåvor som gör att det känns som att man får något tillbaka som kund när man använder kortet. Något annat som har betydelse vid val av kreditkort är hur hög kreditgräns som kan erbjudas.

ATTITTYD OCH BETEENDE

Unnaren är positivt inställd till kreditkort och skulle absolut kunna rekommendera det till en vän om de har behov av det. För Unnaren används kortet främst när det finns ett behov av pengar. Detta gäller framförallt i slutet av månaden innan lönen har kommit men också när Unnaren vill köpa något till sig själv. Hen är spontan och gillar att handla online och tycker därför det är bra att ha ett kreditkort. Om pengar finns på betalkortet använder Unnaren inte kreditkortet.

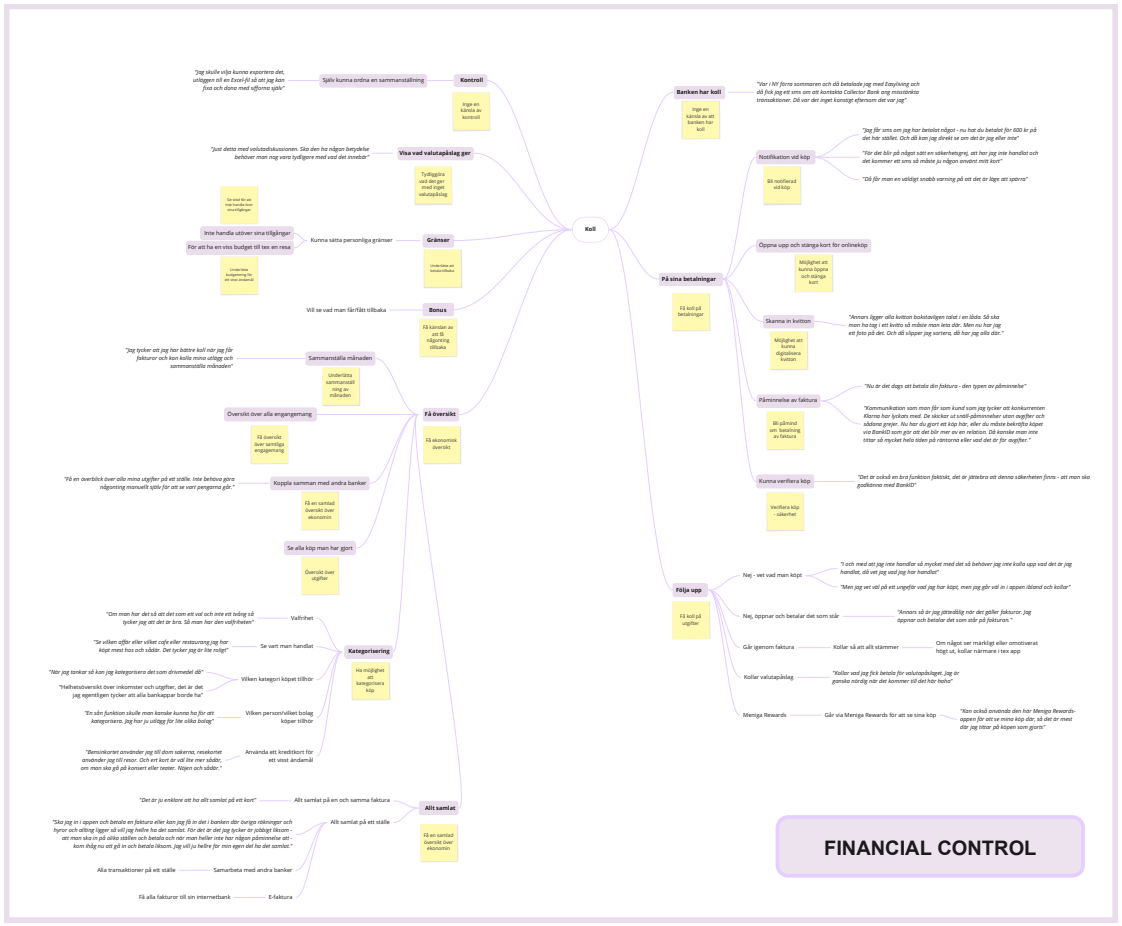
BETALNING

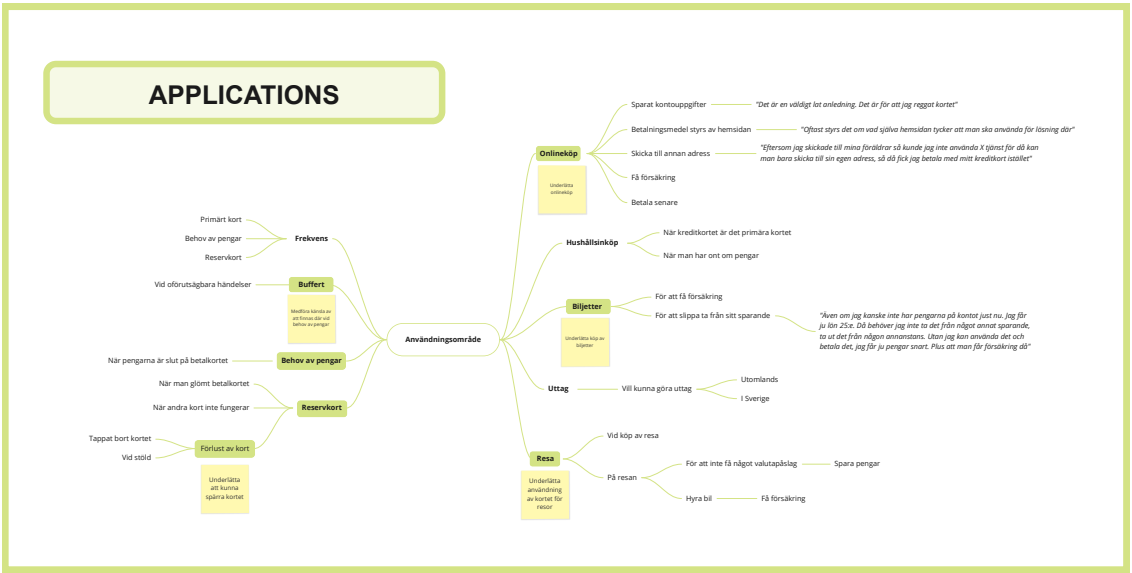
Att missa en betalning är något som Unnaren vill undvika, och lägger därför ibland in en påminnelse i kalendern när fakturan ska betalas. När Unnaren ska betala sin faktura väljs alltid delbetalning. Hen väljer oftast att betala den lägsta summan som föreslås men kan ibland välja att betala en högre summa – utefter sin förmåga. Betalningen sker via sin internetbank.

DIGITALA TJÄNSTER

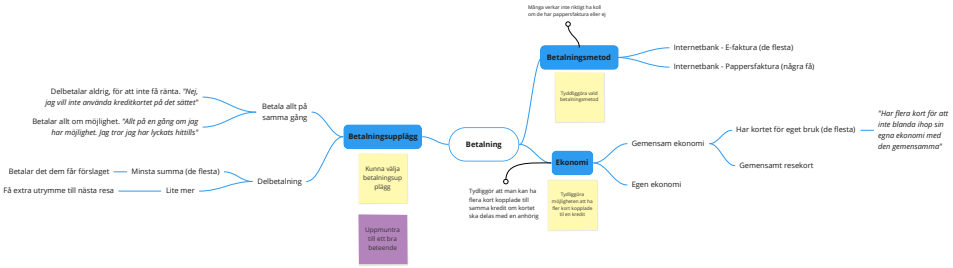
För att inte glömma betala en faktura använder Unnaren appen – ”Jag använder den för att inte missa något, missa någon faktura eller få någon påminnelse för jag tycker inte om sånt. Jag vill betala liksom.” Appen används också för att kolla kreditsaldot. Detta för att Unnaren ska kunna veta vad som återstår. Unnaren har en positiv inställning till digitala tjänster och har dessutom lagt in sitt betalkort i mobilen. Hen har dock inte fått tillfälle till att använda det ännu.

Appendix G. Affinity diagram

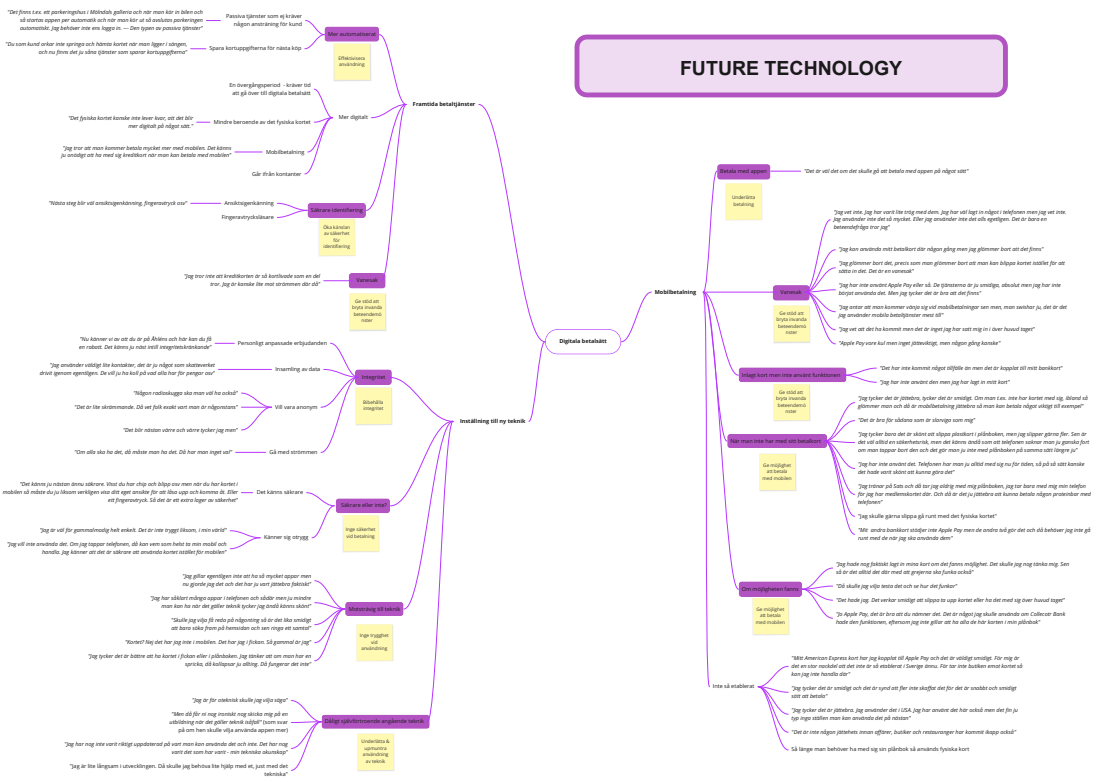


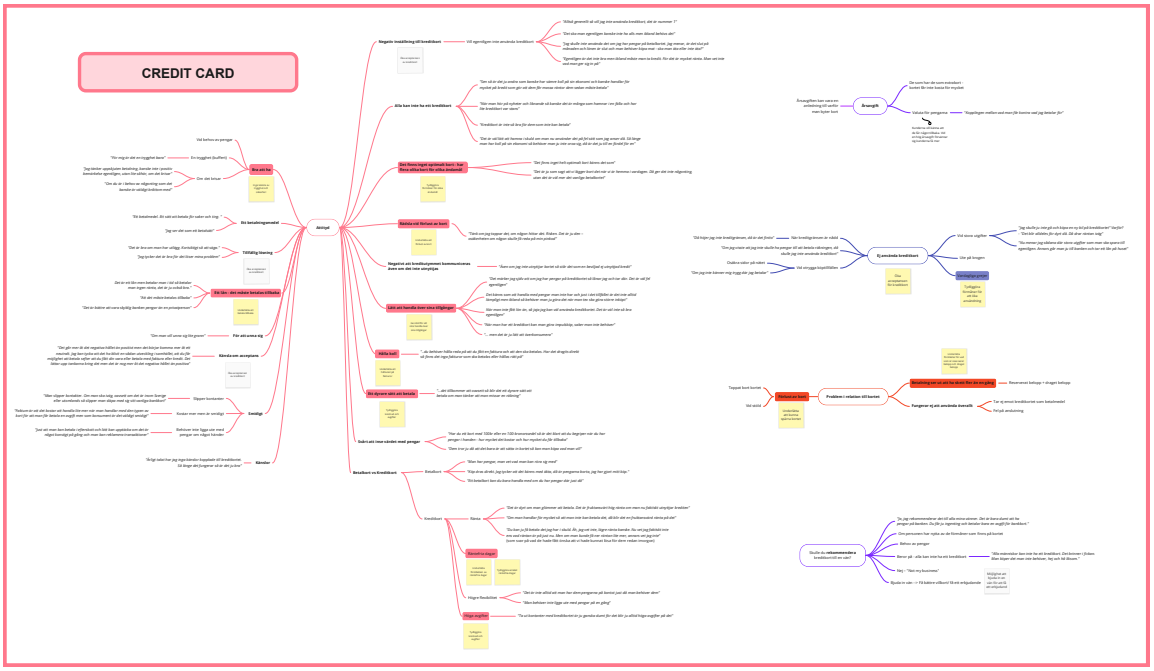


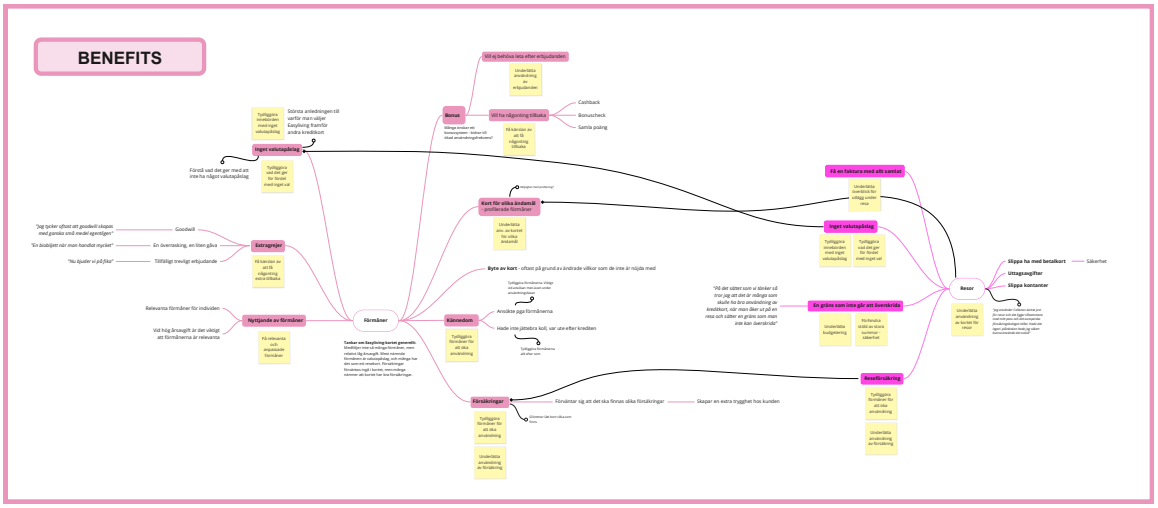
PAYMENTS

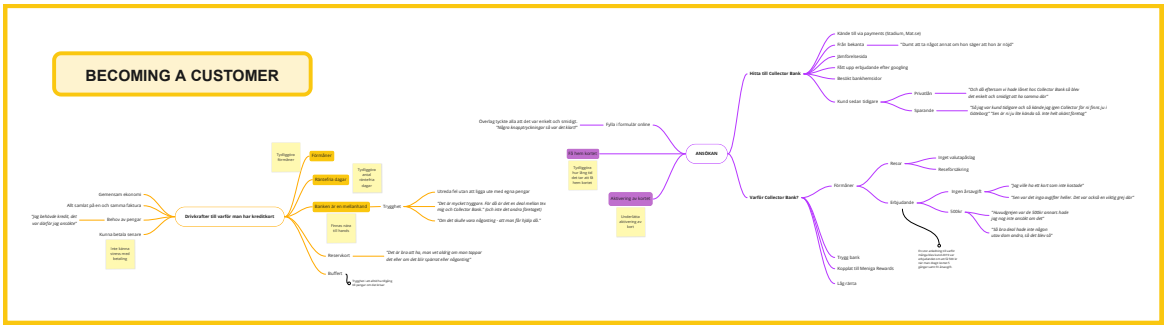


FUTURE TECHNOLOGY



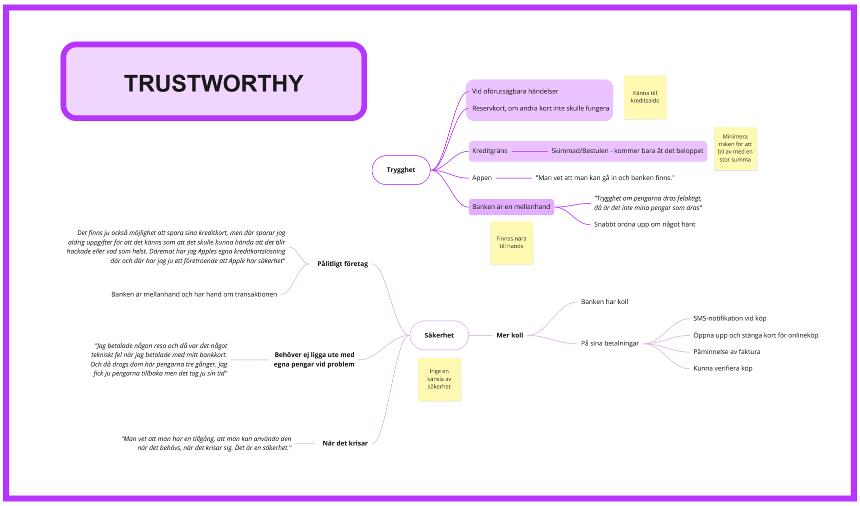


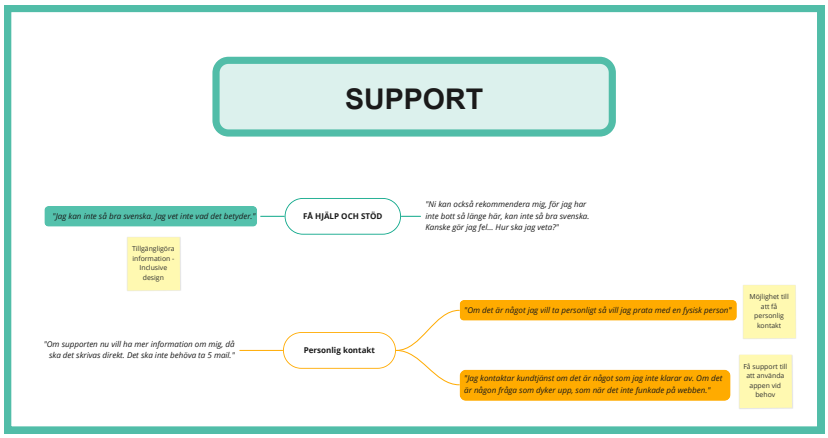


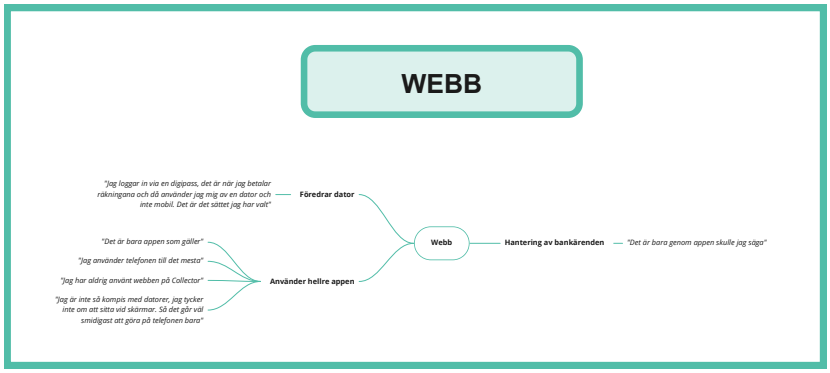


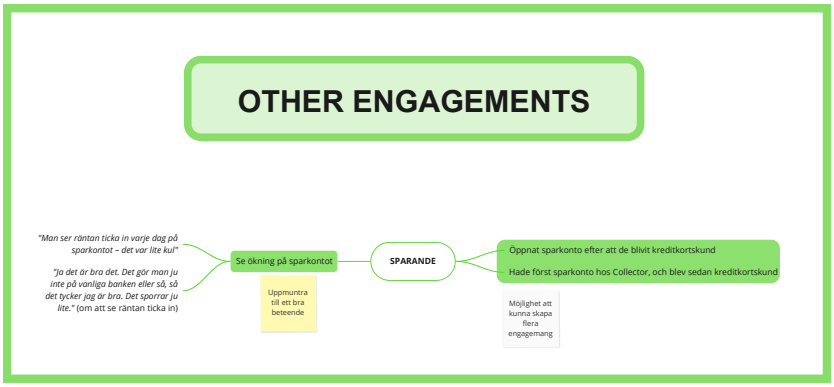
X


APP
App
Uppfattning om appen
Underlätta användandet
Användningsfrekvens
Sparkonto
Kolla köp/transaktioner
Få ekonomisk översikt
Spärra kort
Ändra kreditgräns
Kolla PIN-kod
Kolla saldo
Vid fel
Betalning

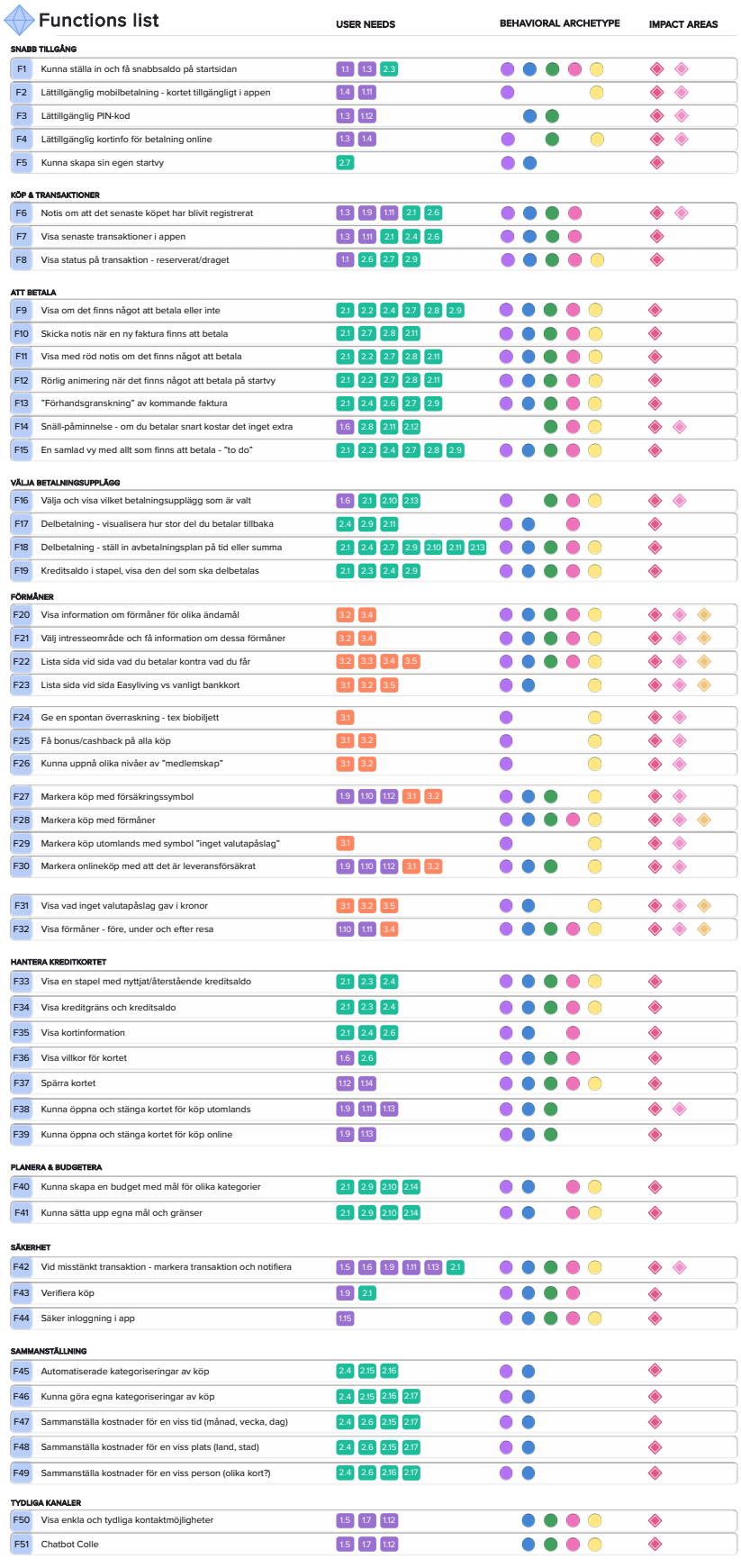

TRUSTWORTHY
Trygghet
Vid oförutsägbara händelser
Reservkort, om andra kort inte skulle fungera
Känna till kreditsaldo
Kreditgräns
Skimmad/Bestulen - kommer bara åt det beloppet
Minimera risken för att bli av med en stor summa
Appen
"Man vet att man kan gå in och banken finns."
Banken är en mellanhand
"Trygghet om pengarna dras felaktigt, då är det inte mina pengar som dras"
Snabbt ordna upp om något hänt
Finnas nära till hands
Det finns ju också möjlighet att spara sina kreditkort, men där sparar jag aldrig uppgifter för att det känns som att det skulle kunna hända att det blir hackade eller vad som helst. Däremot har jag Apples egna kreditkortslösning där och där har jag ju ett förtroende att Apple har säkerhet"
Pålitligt företag
Banken är mellanhand och har hand om transaktionen
Säkerhet
Inge en känsla av säkerhet
Mer koll
Banken har koll
På sina betalningar
SMS-notifikation vid köp
Öppna upp och stänga kort för onlineköp
Påminnelse av faktura
Kunna verifiera köp
"Jag betalade någon resa och då var det något tekniskt fel när jag betalade med mitt bankkort. Och då drogs dom här pengarna tre gånger. Jag fick ju pengarna tillbaka men det tog ju sin tid"
Behöver ej ligga ute med egna pengar vid problem
"Man vet att man har en tillgång, att man kan använda den när det behövs, när det krisar sig. Det är en säkerhet."
När det krisar


SUPPORT
"Jag kan inte så bra svenska. Jag vet inte vad det betyder."
FÅ HJÄLP OCH STÖD
"Ni kan också rekommendera mig, får jag har inte bott så länge här, kan inte så bra svenska. Kanske gör jag fel... Hur ska jag veta?"
Tillgängliggöra information - Inclusive design
"Om supporten nu vill ha mer information om mig, då ska det skrivas direkt. Det ska inte behöva ta 5 mail."
Personlig kontakt
"Om det är något jag vill ta personligt så vill jag prata med en fysisk person"
Möjlighet till att få personlig kontakt
"Jag kontaktar kundtjänst om det är något som jag inte klarar av. Om det är någon fråga som dyker upp, som när det inte funkade på webben."
Få support till att använda appen vid behov


WEBB
"Jag loggar in via en digipass, det är när jag betalar rakningarna och då använder jag mig av en dator och inte mobil. Det är det sättet jag har valt"
Föredrar dator
"Det är bara appen som gäller"
"Jag använder telefonen till det mesta"
"Jag har aldrig använt webben på Collector"
"Jag är inte så kompis med datorer, jag tycker inte om att sitta vid skärmar. Så det går val smidigast att göra på telefonen bara"
Använder hellre appen
Webb
Hantering av bankärenden
"Det är bara genom appen skulle jag säga"


OTHER ENGAGEMENTS
"Man ser räntan ticka in varje dag på sparkontot – det var lite kul"
"Ja det är bra det. Det gör man ju inte på vanliga banken eller så, så det tycker jag är bra. Det sporrar ju lite." (om att se räntan ticka in)
Se ökning på sparkontot
Uppmuntra till ett bra beteende
SPARANDE
Öppnat sparkonto efter att de blivit kreditkortskund
Hade först sparkonto hos Collector, och blev sedan kreditkortskund
Möjlighet att kunna skapa flera engagemang

Appendix H. Functions list with mapping



Functions list		USER NEEDS	BEHAVIORAL ARCHETYPE	IMPACT AREAS
SNABB TILLGÅNG				
F1	Kunna ställa in och få snabbsaldo på startsidan	1.1 1.3 2.3		
F2	Lättillgänglig mobilbetalning - kortet tillgängligt i appen	1.4 1.11		
F3	Lättillgänglig PIN-kod	1.3 1.12		
F4	Lättillgänglig kortinfo för betalning online	1.3 1.4		
F5	Kunna skapa sin egen startvy	2.7		
KÖP & TRANSAKTIONER				
F6	Notis om att det senaste köpet har blivit registrerat	1.3 1.9 1.11 2.1 2.6		
F7	Visa senaste transaktioner i appen	1.3 1.11 2.1 2.4 2.6		
F8	Visa status på transaktion - reserverat/draget	1.1 2.6 2.7 2.9		
ATT BETALA				
F9	Visa om det finns något att betala eller inte	2.1 2.2 2.4 2.7 2.8 2.9		
F10	Skicka notis när en ny faktura finns att betala	2.1 2.7 2.8 2.11		
F11	Visa med röd notis om det finns något att betala	2.1 2.2 2.7 2.8 2.11		
F12	Rörlig animering när det finns något att betala på startvy	2.1 2.2 2.7 2.8 2.11		
F13	"Förhandsgranskning" av kommande faktura	2.1 2.4 2.6 2.7 2.9		
F14	Snäll-påminnelse - om du betalar snart kostar det inget extra	1.6 2.8 2.11 2.12		
F15	En samlad vy med allt som finns att betala - "to do"	2.1 2.2 2.4 2.7 2.8 2.9		
VÄLJA BETALNINGSUPPLÄGG				
F16	Välja och visa vilket betalningsupplägg som är valt	1.6 2.1 2.10 2.13		
F17	Delbetalning - visualisera hur stor del du betalar tillbaka	2.4 2.9 2.11		
F18	Delbetalning - ställ in avbetalningsplan på tid eller summa	2.1 2.4 2.7 2.9 2.10 2.11 2.13		
F19	Kreditsaldo i stapel, visa den del som ska delbetalas	2.1 2.3 2.4 2.9		
FÖRMÅNER				
F20	Visa information om förmåner för olika ändamål	3.2 3.4		
F21	Välj intresseområde och få information om dessa förmåner	3.2 3.4		
F22	Lista sida vid sida vad du betalar kontra vad du får	3.2 3.3 3.4 3.5		
F23	Lista sida vid sida Easyliving vs vanligt bankkort	3.1 3.2 3.5		
F24	Ge en spontan överraskning - tex biobiljett	3.1		
F25	Få bonus/cashback på alla köp	3.1 3.2		
F26	Kunna uppnå olika nivåer av "medlemskap"	3.1 3.2		
F27	Markera köp med försäkringssymbol	1.9 1.10 1.12 3.1 3.2		
F28	Markera köp med förmåner			
F29	Markera köp utomlands med symbol "inget valutapåslag"	3.1		
F30	Markera onlineköp med att det är leveransförsäkrat	1.9 1.10 1.12 3.1 3.2		
F31	Visa vad inget valutapåslag gav i kronor	3.1 3.2 3.5		
F32	Visa förmåner - före, under och efter resa	1.10 1.11 3.4		
HANTERA KREDITKORTET				
F33	Visa en stapel med nyttjat/återstående kreditsaldo	2.1 2.3 2.4		
F34	Visa kreditgräns och kreditsaldo	2.1 2.3 2.4		
F35	Visa kortinformation	2.1 2.4 2.6		
F36	Visa villkor för kortet	1.6 2.6		
F37	Spärra kortet	1.12 1.14		
F38	Kunna öppna och stänga kortet för köp utomlands	1.9 1.11 1.13		
F39	Kunna öppna och stänga kortet för köp online	1.9 1.13		
PLANERA & BUDGETERA				
F40	Kunna skapa en budget med mål för olika kategorier	2.1 2.9 2.10 2.14		
F41	Kunna sätta upp egna mål och gränser	2.1 2.9 2.10 2.14		
SÄKERHET				
F42	Vid misstänkt transaktion - markera transaktion och notifiera	1.5 1.6 1.9 1.11 1.13 2.1		
F43	Verifiera köp	1.9 2.1		
F44	Säker inloggning i app	1.15		
SAMMANSTÄLLNING				
F45	Automatiserade kategoriseringar av köp	2.4 2.15 2.16		
F46	Kunna göra egna kategoriseringar av köp	2.4 2.15 2.16 2.17		
F47	Sammanställa kostnader för en viss tid (månad, vecka, dag)	2.4 2.6 2.15 2.17		
F48	Sammanställa kostnader för en viss plats (land, stad)	2.4 2.6 2.15 2.17		
F49	Sammanställa kostnader för en viss person (olika kort?)	2.4 2.6 2.16 2.17		
TYDLIGA KANALER				
F50	Visa enkla och tydliga kontaktmöjligheter	1.5 1.7 1.12		
F51	Chatbot Colle	1.5 1.7 1.12		

Appendix I. Findings from usability test

TASK 1A & 1B - Check balance (swipe down)

QUOTES

"I imagine it is convenient that it is quick to hide it, because you may be in the queue and do not want everyone in the line to see."

"It doesn't require that I hit just as perfect, and I have a larger area to hit." (with the swipe)

"I had used the first option - it is more familiar and discreet."

INSIGHTS

- The first time they use it they think the credit balance should stay there, and not disappear when they let go, However, when they realize they an hold it they quickly get it.
- The button has a smaller hitting surface than the swipe down.
- The button is also not ideally placed for left-handed people.

ACTIONS

- Go further with the first option - swipe.

TASK 2 - Pay with mobile (swipe up)

QUOTES

"I know what my card is, so I don't really need any more information. I think it's nice that I get a representation of the card."

INSIGHTS

- Good with a representation of the card, not much more is needed
- Difficult to understand that the card is active

ACTIONS

- Give feedback on that the card is active.

TASK 3 - What to pay (Start page)

QUOTES

"It's a positive message. That Collector Bank is happy that I paid my bills - and so am I."

"It looks like I have done good, as if I have completed something. As if I have been cleaning and now it's clean."

"Oss tillhanda" - I don't really know what that means.

INSIGHTS

- Difficult to understand "oss tillhanda", clarify which one is supposed to be paid first
- The invoices may occupy too much space
- Everyone prefers to have the number of days until payments over the date.

ACTIONS

- Remove "oss tillhanda"
- Try making the invoices smaller
- Highlight which one is supposed to be paid first

TASK 4 - Close card for abroad purchases

QUOTES

“This was difficult. I had a hard time knowing I could click it. And this is because it looks like a credit card.” (navigating to credit card view)

“Ah ok, so it was possible to press here. I wasn't really sure I could press my card.””

INSIGHTS

- Difficult to understand that you can press the card to navgiate to the credit card page
- Think the card in the menu leads to credit card view
- Don't know what page they're in - not highlighted in menu
- The action of blocking cards and closing cards - the wording can be a bit similar, what's the difference?
- Unclear purchase settings icon with the locker

ACTIONS

- Must understand that the card is clickable, or change navigation
- Clarify what view they are in in the menu at the bottom
- Change symbol for purchase settings - possibly globe?
- On navigation - Review the cutting in the views, so you understand that you can scroll in the app

TASK 5 - Block card for purchases

QUOTES

“Yes, I saw this one earlier. It’s under manage cards.”

INSIGHTS

- If you have been in the view before (for purchase settings) it was now very easy to find the Block card
- It should not be too easy to block the card. Is it to easy?

ACTIONS

- Make it clear that you are about to block the card, balance how “difficult” it should be to not slip and do it by mistake, but still have it accessible when needed

TASK 6A - Follow up on a previous purchase (and ask about insurance symbol) purchases

QUOTES

"It feels like Collector Bank is more involved, that they know I made a travel purchase and by this I don't need to know myself that I have an insurance. As if the bank has my back, instead of me needing to know for myself what my benefits are."

"It feels like a security. If I have it through the bank, otherwise I might not have known about it"

"I like that it is directly linked to my purchase"

INSIGHTS

- May be difficult to understand the symbols - what does it mean? Many still says that it provides a sense of security with the shield symbol. Good to have an explanation on what this means.

- Should you have a general symbol for benefits? Or should you have a text that shows what kind of benefit instead? E.g. "Delivery Insured"

- Important to have balance with not showing too much irrelevant. Should not feel too "sellable", as if the bank wants to sell on a lot of stuff

- Make it more clear where the users are the interface - where should recent transactions be?

ACTIONS

- Review the benefit symbol - clarify with text?

- Review the transaction view - where should it be? Look over the front page, see how to get to the analysis page

TASK 6B - Follow up on another previous purchase (and ask about currency symbol)

QUOTES

"I think it's good that the benefits are shown, but maybe not all the time with exactly all benefits. It's not always information that I need, it should not be too much. Then it feels like they try too hard to sell it."

"Maybe the symbols were not that clear. Perhaps it is difficult to teach the user what all symbols mean."

INSIGHTS

- May be difficult to understand the symbols - what does it mean? Many still says that it provides a sense of security with the shield symbol. Good to have an explanation on what this means.

- Should you have a general symbol for benefits? Or should you have a text that shows what kind of benefit instead? E.g. "Delivery Insured"

- Important to have balance with not showing too much irrelevant. Should not feel too "sellable", as if the bank wants to sell on a lot of stuff

- Make it more clear where the users are the interface - where should recent transactions be?

ACTIONS

- Review the benefit symbol - clarify with text?

- Review the transaction view - where should it be? Look over the front page, see how to get to the analysis page

TASK 7 - Review and change monthly budget

QUOTES

“I don't know where the rest of the money comes from. Maybe you would like a category called Other, where you can see the rest.”

“However, one might have wanted to see those categories as a pie chart. And then if a part is green, the category is linked with that colour too.”

INSIGHTS

- Not very clear where to press to change the monthly budget
- You want to see how much money is left that has not yet been categorized
- Difficult to interpret the pie chart. Want to see the breakdown by category of expenses. You may need two pieces - one for allocating budget and one for spending, how much you have spent.
- Analysis, unclear what this page means
- The continuous curve can be difficult to interpret - since it shows expenses every month, have bars instead?

ACTIONS

- See if we should change the button to change the monthly budget
- Add a cateogry for “other”
- Change heading for Analysis?
- Delete the texts on the menu?
- Have bars instead of curve?
- Review the navigation in the analysis view