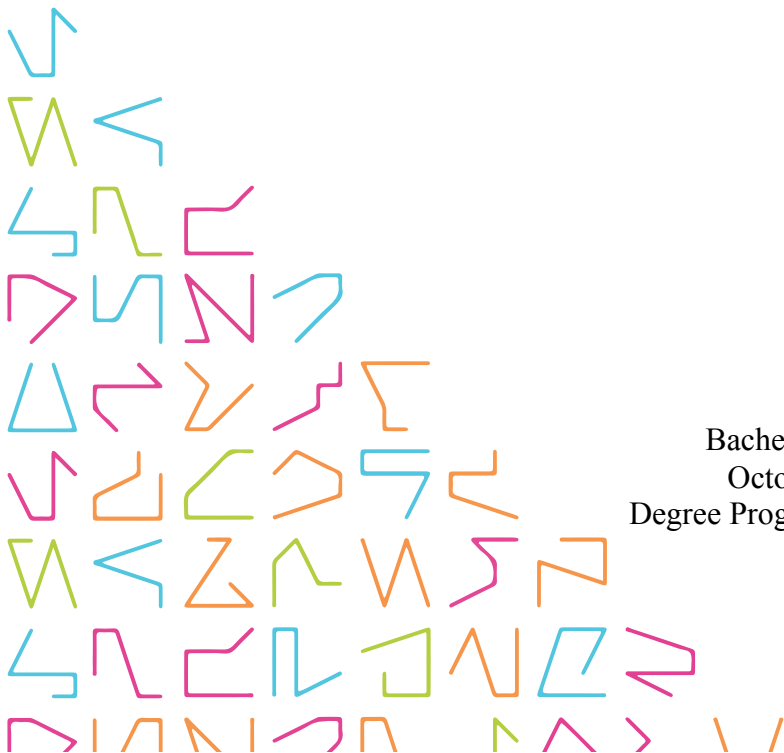TAMK

TAMPERE UNIVERSITY
OF APPLIED SCIENCES

Making User-focused Prototype

Using Design Sprint to Test, Design, and Prototype Mobile App Rapidly

Nian Hwei Wong

Bachelor's thesis
October 2016
Degree Programme in Media

ABSTRACT

WONG, NIAN HWEI:
Making User-focused Prototype
Using Design Sprint to Test, Design and Prototype Mobile App Rapidly

_____

The aim of this study was to examine Google Venture Design Sprint (sprint) as a rapid design process and how it had helped to kick-start a design project in order to test, design and prototype for a mobile app in a large organisation. Based on the study, the objective of the practical project was to improve Vattenfall My Pages mobile app prototype based on the user test conducted during the sprint.

The sprint was conducted at Vattenfall Digital Channels to redesign My Pages mobile app. Observations were made during the sprint and analyses were recorded. Participants from the sprint were also interviewed. Apart from the sprint being experimented as a rapid design process, the rapid sketching and prototyping methods that are used during the sprint process were also studied. The theoretical section of the thesis examined the user experience design techniques used in the sprint. The practical part focused on the visual design improvements of a high-fidelity mobile app prototype based on the data collected from the sprint's user test.

Throughout the sprint, it was found that the techniques used in the sprint provided effective and reliable ways to help design team to work on the mobile app design project that involved a large number of stakeholders. The rapid sketch method used in the sprint was effective in generating many sketch solutions which helped produce a reliable prototype. The user test had given valuable insights that helped improve the design from the users' perspective. The sprint also provided a better process for a visual designer in designing a better prototype that is user-focused. It was also examined as an excellent team building exercise for designers working in a large organization.

It would be interesting to continue using the sprint as a user experience design process and method to approach various design challenges including design for mobile app. The study suggests the sprint is a versatile method that could benefit designer working in a team to tackle design challenges that involve a large number of stakeholders. It also encourages the visual designer to take an active role in user experience design using the sprint to build design and prototype that is user focused, to better fulfil business requirements in a short amount of time. Furthermore, building a mobile app that fulfils the users' needs and enhances their experience is something every designer and company that aims at creating successful digital products and services must aim for.

Key words: Google Venture Design Sprint, design, prototype, user testing, mobile app.

CONTENTS

ABBREVIATIONS AND TERMS

Agile	Originally a software development methodology, which values people and interactions over processes and tools, working software instead of comprehensive documentation, collaboration between team members and the ability to respond to rapid change.
Design Thinking	Design thinking is a human-centered approach to innovation that draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirements for business success.
Prototype	An approximation of an experience that allows you to simulate what it is like to use the product or service in question. It needs to be clickable (or tappable).
Sketch	Design software that allows user to create visual design specifically for online user interface
SME	Subject-matter expert
Sprint Master	The facilitator that facilitates and runs the Sprint
Startup	A few-year-old tech company that could still easily fail
Sprint	Referring to the (product) design sprint created by Google, and later on adapted by Google Venture, also known as Google Ventures Design Sprint
UI	User interface
UX	User experience

1 INTRODUCTION

This thesis examines Google Venture Design Sprint (later on referred to as sprint), a rapid design method to help build a user-focused prototype. In this case, the prototype is a high fidelity prototype for a mobile app. The author of this thesis works as visual designer in the Digital Channels department of Vattenfall. The team was set to redesign Vattenfall My Pages mobile app.

What is the sprint, why use it, and how to use it to build a better mobile app design are the questions which will be answered in the theoretical part of this thesis. This method came from Google Ventures, created by Jake Knapp with John Zeratsky and Braden Kowitz. It has helped many companies to tackle various challenges including testing new business ideas for a large enterprise, helping companies building new product features in a mobile app, and defining marketing strategies for a start-up (Knapp, 2016). The various user experience (UX) techniques used in the sprint will be studied in this thesis.

During the 5-day sprint, observations were recorded and analyses were made. The five stages of the sprint will be looked closely into. The five stages are: identifying the problem, sketching the design, deciding which ideas to go for, making a prototype and testing it with the users. Insights gained from the sprint conducted at Vattenfall will also be analysed in this thesis.

In the practical part of this thesis, a research project was conducted to improve the sprint prototype with high fidelity visual design after the sprint had been conducted. Rapid sketching, prototyping and user testing will be closely analysed in chapter 4 and 5 on how the UX techniques gained from the sprint help the visual designer to make a user-focused prototype, in this case for a mobile app. Feedback was gathered for the research project via an interview.

This thesis aims at providing guidelines to visual designers on using the sprint to assist in making a better prototype design. Vattenfall as a large organisation has its own ways of working. Therefore, this thesis tackling the issue of applying such rapid sprint method to a relatively new design challenge for a century-old large organisation is worthwhile. Issues that were raised during the sprint such as impediments are discussed briefly as well,

to better serve as a case study to other visual designers working in a large organisation that involves a great number of stakeholders.

2   VATTENFALL AS A LARGE ORGANISATION

Vattenfall is a large organisation with more than 30,000 employees working across more than 7 countries. Employees work in various departments, located in different offices mainly in Sweden and Europe. As a company, Vattenfall's main services are providing electricity and heating to customers in their three biggest markets: the Nordics countries, Germany and the Netherlands. In electricity and heat, their business includes all parts of the energy value chain: from the extraction of natural resources and production of electricity and heat, through electricity trading and distribution, to sales both to resellers and to end customers (Vattenfall, 2016).

According to Vattenfall, the company is serving 6.2 million private electricity customers in four countries, 3.2 million network customers in two countries and 1.9 million gas customers in two countries. As such, Vattenfall has the strategy and vision of being a customer-centric company (Vattenfall, 2016).

Within the large Vattenfall organisation, I work as a visual designer in the Digital Channels department. There are three teams within the department: Digital Customer Service, Delivery and Operations, and Channel Experience. I work in the Channel Experience team with three other UX designers and a business release manager. Our job scope includes redesigning and developing the current Vattenfall website, a few mobile apps and other required materials such as email templates. We work together with other teams within the department as well as across different divisions in the organisation. Our team delivers user-centred design by conducting user research and user tests, and create wireframes and prototypes based on business requirements and customers' feedback.

Within our department, the working methods are agile. We use Kanban and Scrum together as an agile working method for our daily work. We work in small teams of four to five people and have a daily stand-up meeting in the morning checking our workloads on Kanban board. In the team, we ask and give peer reviews on each other's works regularly. User tests are regularly conducted with customers and we always adapt to changing requirements. Designers and developers are sitting close to each other so that communication is easy and straightforward when there is discussion needed regarding design requirements. In a nutshell, the Scrum method means that we work as a small team spending a

short time building a small thing, but integrating regularly to see the whole (Kniberg & Skarin 2010, 4). Other roles in the department include a department director, a product owner, a project manager, developers, content specialists, and testers.

3   DESIGN CHALLENGE: REDESIGN MY PAGES MOBILE APP

At Vattenfall Digital Channels, there are several design projects scheduled in a year. One of the design tasks is to redesign Vattenfall My Pages mobile app. Vattenfall as a large organisation provides many products and services to both private and business customers. In the My Pages mobile app redesigning task, private customers are the target users.

3.1   Current My Pages mobile app

The current Vattenfall My Pages app was developed four years ago (figure 1). It is a mobile app that allows a customer to log into their Vattenfall account to check their electricity consumption, invoices, contract, and compare electricity consumption with other households. (Vattenfall AB: iTunes 2016.) It is available for iOS and Android mobile platforms on Apple's iTunes App Store and Google Play Store. The design of the app is outdated and has not received much positive feedback from the users according to the statistics in both Apple App Store and Google Play Store (Vattenfall Digital Channels, 2016).
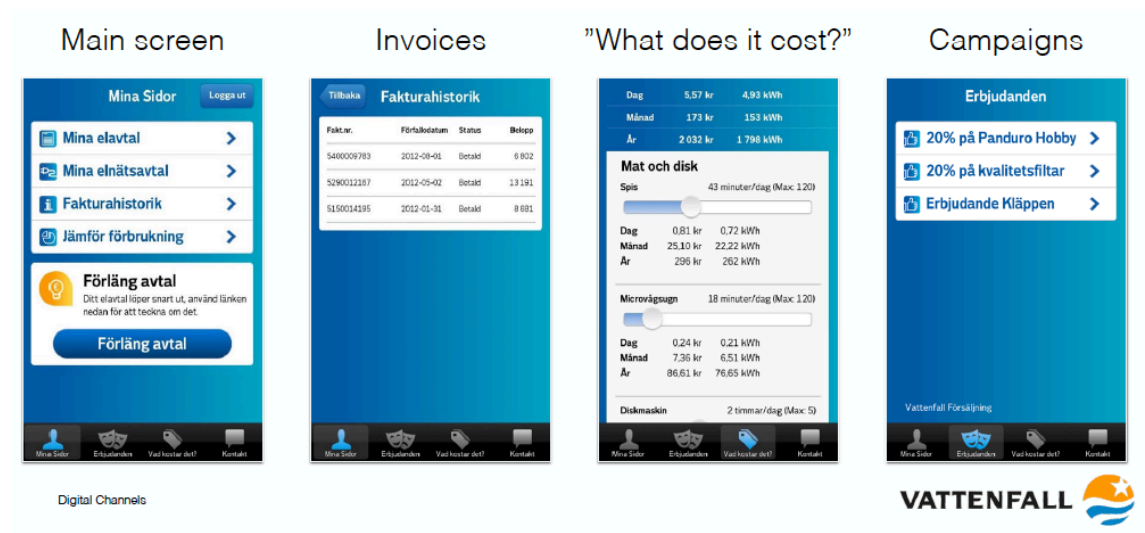
FIGURE 1. Current My Pages app interface design (Vattenfall Digital Channels, 2016)

3.2   Goals of the design task

The team had many questions regarding the goals of the design task which was redesigning My Pages mobile app. There were no clear objectives and precise business requirements presented in the documents. While tackling the challenge, one of the UX designers proposed the sprint as a design method to help kick-start the design task. By using the sprint, the team set out to define the problems and illustrate the goals of the design challenge. In the following chapters, the sprint will be examined. How the team used the sprint in tackling the designing task will be discussed as well.

4   GOOGLE VENTURE DESIGN SPRINT

According to Direkova and The Google Sprint Masters (2015), a design sprint is simply a structured brainstorming based on design thinking and agile development. Design thinking combines empathy, creativity and rationality to solve human-centred problems. It is the foundation on which a design sprint is built. Based on the design thinking process (figure 3) developed by IDEO and further expanded through the Design School at Stanford, Google Ventures Design Sprint is modified into five stages: understand, diverge, decide, prototype, and validate (Knapp, 2013).
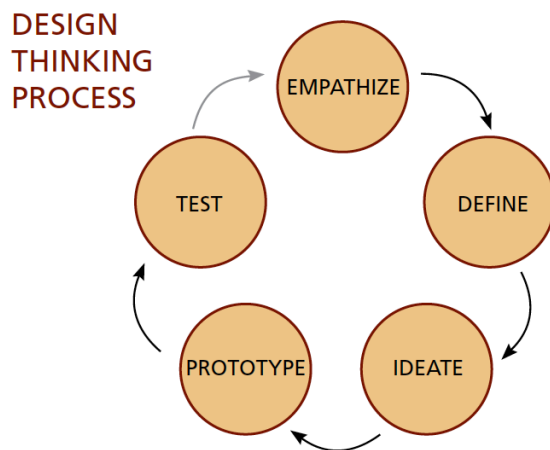
FIGURE 3. Design Thinking process (Hasso Plattner Institute of Design at Stanford University, 2011, according to Rice, 2011, 2)

The sprint originally started as an experiment by Jake Knapp while he was working at Google. He found out that group brainstorming where participants shout out ideas was not effective as there were not enough actions delivered after each group brainstorming. Through revising the process method, Knapp found out that having time to develop ideas independently, putting a time constraint, having the right people during the process and having time to prototype has made group brainstorming much more effective. He referred to this version of the method as a sprint. The sprint has been used for more than a hundred times at Google and Knapp brought this method over to Google Venture when he was invited to work as a design partner. (Knapp et al, 2016.)

At Google Venture where selected start-ups were being invested, the sprint method was modified so that it is much more rapid and intense for solving big problems quickly. With the help of Braden Kowitz, John Zeratsky, Michael Margolis and Daniel Burka, the sprint became more story-centered, more business orientated, thus being able to produce results within only five days. This version of the sprint is called Google Venture Design Sprint (sprint). (Knapp et al, 2016.)

This fast-paced 5-day sprint can be used to build and test nearly any idea rapidly, because instead of waiting to launch a minimal product to understand if an idea is any good, teams get great data from a prototype. In an agile process, a team usually initiates a project with an idea for a digital product, build it with a code, and launch it to the market or to some users for testing so that the team can learn from it and improve the product with iterations (figure 4). The greatest benefit of using the sprint is to give teams a shortcut to learning without the high cost of building and the long duration of launching the digital product in just 40 hours. (Knapp et al, 2016.)
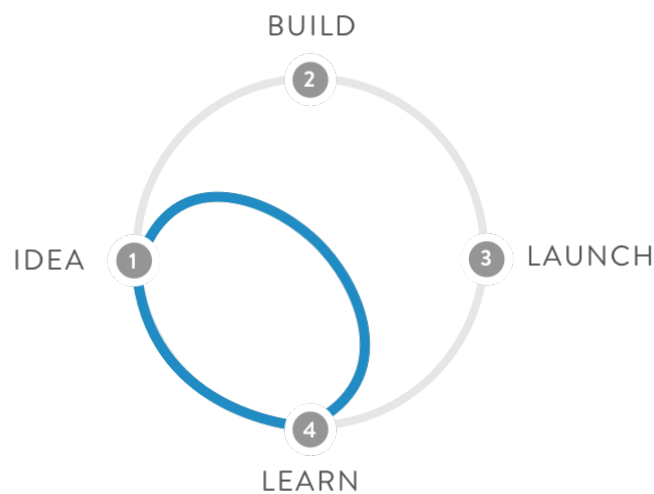
FIGURE 4. The Sprint gives teams a shortcut to learning without building and launching (Google Ventures, 2016)

Although the sprint has been modified to better suit for a start-up at Google Venture, the basic methodology in this sprint is the same and has been tested with various big and small companies including Nest, a company which produces products for smarter home with 1,100 employees around the world (Google Venture, 2016). In the following sections, the sprint is explained from the preparatory stages to what activities are conducted

during each day, and to how to make use of the results from the sprint. The 5-day sprint conducted at Vattenfall Digital Channels will also be discussed and analysed.

4.1   Before the sprint

The sprint usually starts with a design problem. This is usually the stage when a team encounters the design challenge, business ideas and so on. Depending on the cases, the preparation before the sprint varies. The digital team at Three company conducted kick-off workshops to find out what works well, not so well, and what could be better about one of their biggest design challenges, redesigning a service called Network Coverage Checker. They felt that the workshop is important to acknowledge all of the feelings, ideas and assumptions within the team (Maxwell, 2016). On the other hand, our team at Vattenfall Digital Channels did not have any preparation before the sprint and only conducted a kick-off process during the first day of the sprint. In order for the sprint process to be implemented efficiently, there are several factors to be taken into account.

4.1.1 Sprint master

A sprint master is the lead of the sprint team. The master does not necessarily have to be the leader of a department. Typically, a sprint master is someone with a deep understanding of UX knowledge and methods. For example, a UX lead, UX designer or design researcher could work well as sprint master. A sprint master identifies the design challenge for the sprint, brings the team together and takes them through all sprint stages. It is important that a sprint master has confidence in leading a meeting; orchestrating discussions and telling people when to stop talking. (Knapp 2013.)

The sprint master carries a great responsibility in the sprint. The responsibilities are: gathering the team, scheduling a week from everyone's calendars, setting a deadline, scheduling user testing, preparing the sprint deck (Klimov 2016, Appendix 1), preparing the room and essential supplies (Knapp 2013). In our case, one of the UX designers who proposed the sprint naturally became the sprint master.

4.1.2 Gather the team

The ideal sprint team has between four and eight people, consisting of designers, the Chief Executive Officer (CEO), a product manager or product owner, a user expert and anybody else that is interested in participating. In a small company, the CEO is the key decision-maker and needs to participate in order to obtain a solution that can be implemented. In a bigger company, it is difficult to include the CEO, but if he/she cannot be there the whole time, it is best to involve him/her in the key decision-making moments. Usually the team lead is a good person to be included in the sprint to make a decision effectively. (Knapp et al, 2016.)

4.1.3 Clear the calendars

Clearing the calendars can be difficult to do when everyone in the team is busy with daily work. The sprint master should make sure that everyone participating in the sprint agrees on a week that they can commit to the sprint without having any distraction and meetings on the same day of the sprint. (Knapp 2013.)

4.1.4 Set deadline and schedule user test

The sprint master recruits users and schedules a user test at the end of the sprint. Scheduling a user test before knowing what is to be tested can be rather intimidating. But this is the way to set a deadline and it can be good motivation to help the team to make tough decisions during the sprint. (Knapp 2013.)

4.1.5 Preparation: the sprint deck, sprint room and essential supplies

The last part of preparation for the sprint is to make sure that the team has instructions during the sprint, a space for the sprint and tools and stationery to use. The sprint deck is simply a PowerPoint, a Keynote slide that contains schedules and a set of methods to be

used during the sprint. This is good to have so that participants know what to expect during the sprint week. (Knapp 2013.)

It is best to conduct the sprint in the same room throughout the week. This is because the room serves as a shared brain space for the team when they put up notes and diagrams on the wall, using the same whiteboard for brainstorming. This allows participants to constantly look at the notes and sketches displayed in the room, which helps to identify patterns and encourages creative synthesis during the sprint process (Knapp et al. 2016, 43).

The last thing to prepare for the sprint is to make sure that all stationeries needed during the sprint are prepared. These are usually quite easy to find in an office: plenty of post-it notes, whiteboard markers, pens and papers, large size papers, red and green stickers (also known as voting dots), a timer with alarm sound, and tapes.

4.2   Day one: unpack the problem
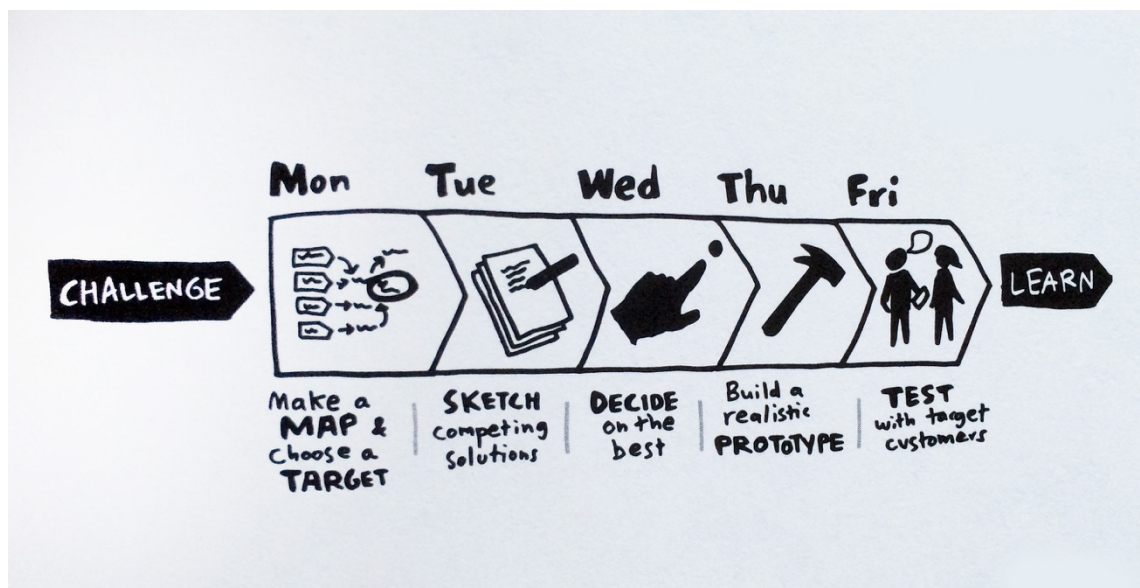
FIGURE 5. The sprint process from Monday to Friday (Knapp et al 2016, 17)

The sprint usually starts on Monday on a work week. The sprint master facilitates the sprint first by getting everyone on board. The goal of the first day is to develop a common understanding of the sprint's goals among the participants and devote the entire first day to planning. The importance of first day is not to rush straight into finding solutions but to dedicate it to organising and sorting priorities. (Knapp et al 2016, 54–55.)

The sprint master plays an active role in the facilitation: synthesising the discussion and driving the progress by avoiding unproductive debates. Recording key ideas on the whiteboard is the most important responsibility of the sprint master.

4.2.1 Set a long-term goal and list sprint questions

According to Knapp, setting a long-term goal is a good way to start the sprint. The discussion about the goal could be started with questions such as why the team is doing this project, and how the team foresees the project in six months, one year or three years from now. The goal should reflect the company's principles and aspirations. (Knapp et al 2016, 53–58.)

However, our team did not set a long-term goal during our team's sprint. What was more practical to do was to list out sprint questions for example, what questions do we want to answer in this sprint, and what problems are we solving? These questions helped the discussions and defining the goal of the sprint.

4.2.2 Make a map and ask the expert

Creating a map helps the team to narrow down the broad challenge into specific targets for the sprint. It also provides a structure for sketching the solution and prototype. It is a map that is similar to a stakeholder map combined with a customer journey map. The map contains lists of important character(s) in the story, a clear story explained with arrows and words, has an ending to the story, and it is customer-centric as well as simple with no more than fifteen steps. The key is to avoid an over complicated map that would create difficulties in the sprint, losing focus due to the map being too big to be tackled in five days. (Knapp et al 2016, 59–67.)

Blue Bottle Coffee is a company that aims to increase online sales for their coffee products. Figure 6 displays an example of their map depicting the story of how a new customer reaches their website and the story ends with buying coffee.
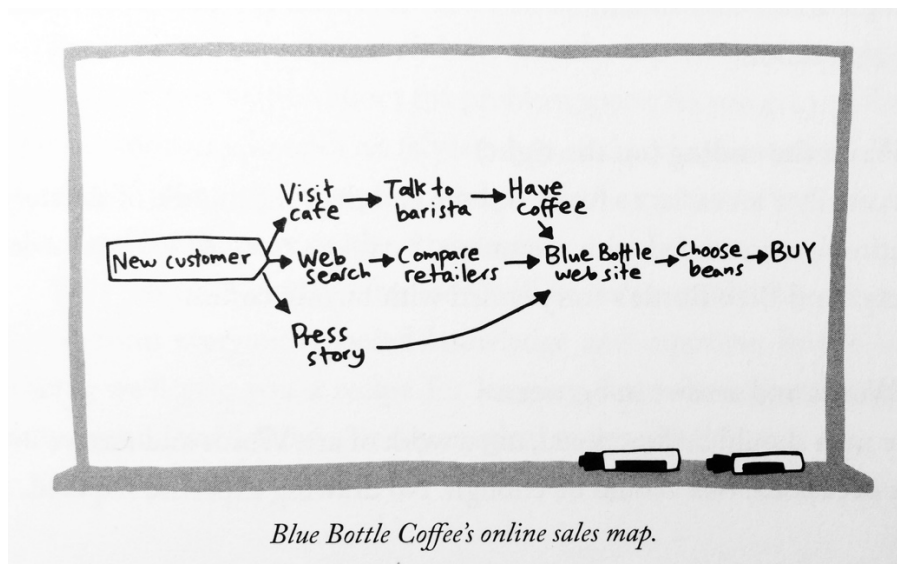
Blue Bottle Coffee's online sales map.

FIGURE 6. Example of a map depicting a coffee company's online sales process (Knapp et al 2016, 65)

The map depicts a simple step by step journey which is the focus of the sprint. The challenges and opportunities lie within the map. In order to go further with this map, experts are invited to give insights and share expertise. The experts are often the ones participating in the sprint. A team lead could provide insights about the strategy, a customer expert from customer support or customer research could represent the voice of the customer, and marketers, engineers or designers could easily share their knowledge on how things work with the products and services. It is also good to look at previous efforts which have been made before such as a failed solution or unfinished ideas. (Knapp et al 2016, 68–71.)

In our sprint, the customer expert from Vattenfall customer support provided a list of top ten reasons why customers had requested for support in the past years. The top five reasons were related to energy consumption, invoices, and electricity contracts. The statistics from web analytics also suggested that the majority of the customers logged into My Pages from the Vattenfall website to check their energy consumption as well. This set a very good focus for our team to define the user story for our sprint.

4.2.3 How Might We question, set the target

Through listening to the experts sharing their insights about customer, the product and services as well as the strategy, the sprint participants wrote down the How Might We

(HMW) question. The How Might We question is a method that turns the insight and problem into an opportunity for innovative design (IDEO.org, 2016). By the end of the session, there should be many How Might We notes. The notes are stuck to the wall for sorting into groups and they are given a theme. The team can then use dot stickers to vote for the most promising HMW questions. The most voted questions are prioritised. (Knapp et al 2016, 73–82.)

At the end of the day on Monday, it was time to choose a target for the sprint. One target customer and one target moment on the map should be chosen to be focused for the rest of the sprint. For example, Blue Bottle Coffee decided to target customers who had never heard of their cafés and who were shopping for coffee beans they had never tasted. (Knapp et al 2016, 85.)

Our team had achieved common understanding of the problems by sorting out our notes into themes (picture 1). By creating a user story, it acted as our target of the sprint. The story was: *As a user I want to get help understanding my usage and costs, so I can become more energy smart in a fun and engaging way.* Our team decided to divide this user story into three main parts, and focus on these themes when designing the mobile app prototype: consumption and comparing with others, costs connected to consumption, and being energy smart in a fun way.
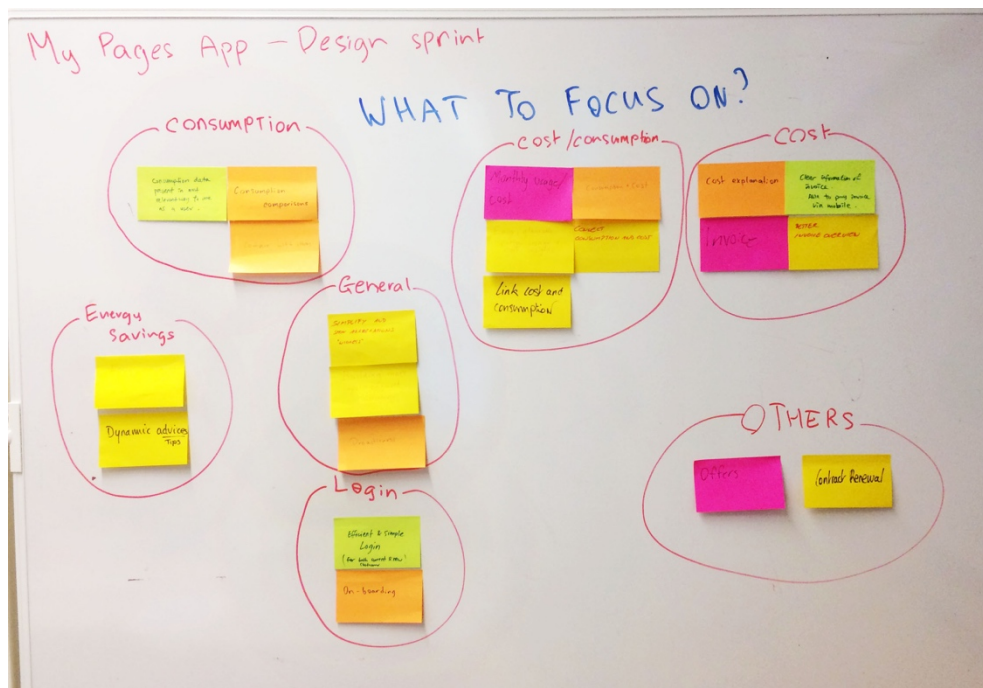
PICTURE 1. Grouping problems and tasks into themes (Photo: Nian Hwei Wong 2016)

4.3   Day two: sketch

Day two is an important day to come up with as many solutions as possible to the defined target and user story that the team sets to solve on Monday. Before the team goes into sketching solutions, it is suggested to have Lightning Demos. Lightning Demos is a session where each participant takes a turn to present his/her favourite solutions from other products and other domains in three minutes. It is helpful to find good examples of solutions that are diverse, and not copied from competitors. The sprint master writes down the key ideas for each solution that each participant presents. By end of the session, there are several key ideas that serve as inspirations and raw materials for the team to proceed to the next exercise: the Four-step sketch (figure 7). (Knapp et al 2016, 95–102.)
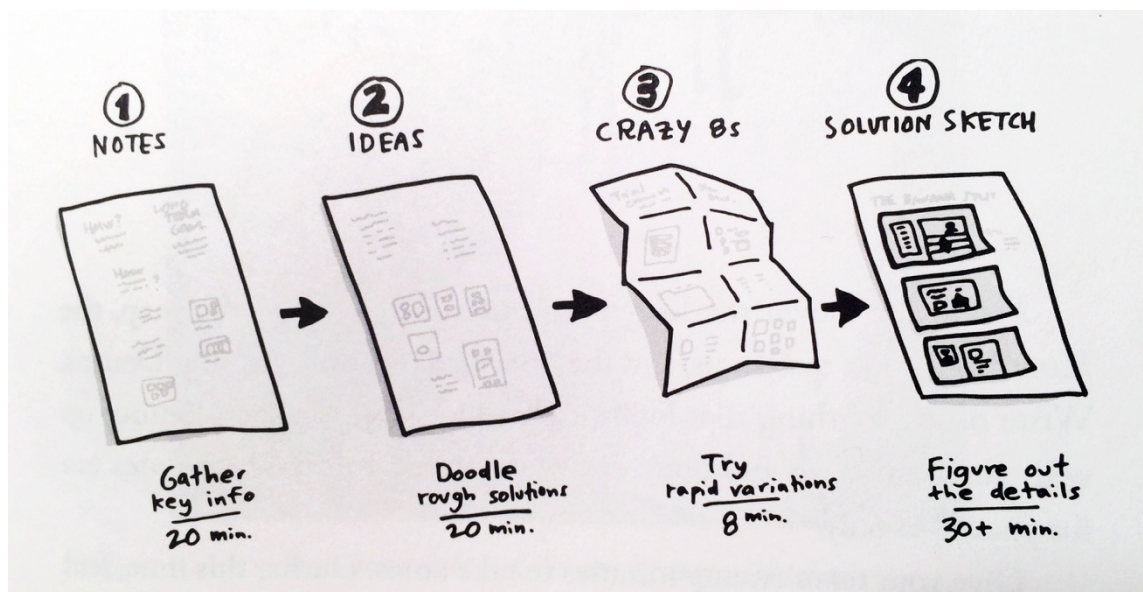
FIGURE 7. The Four-step sketch explained in diagrams (Knapp et al 2016, 109)

4.3.1 Four-step sketch: take notes

It is important that this sketching process is done individually, each participant sketching alone but together in the same room. And everyone can sketch, no special skills are required for this session. The team walks around the room that is filled with post-it notes on the walls from Monday. Within 20 minutes, each participant takes notes on the goals, opportunities and inspirations. (Knapp et al 2016, 109–110.)

4.3.2 Four-step sketch: jot down ideas

In the next twenty minutes, each participant jots down or doodles rough ideas (figure 8). Mind mapping is a great technique to use in this session for generating ideas and find keywords. It does not matter if the ideas are messy or incomplete. (Knapp et al 2016, 102.)
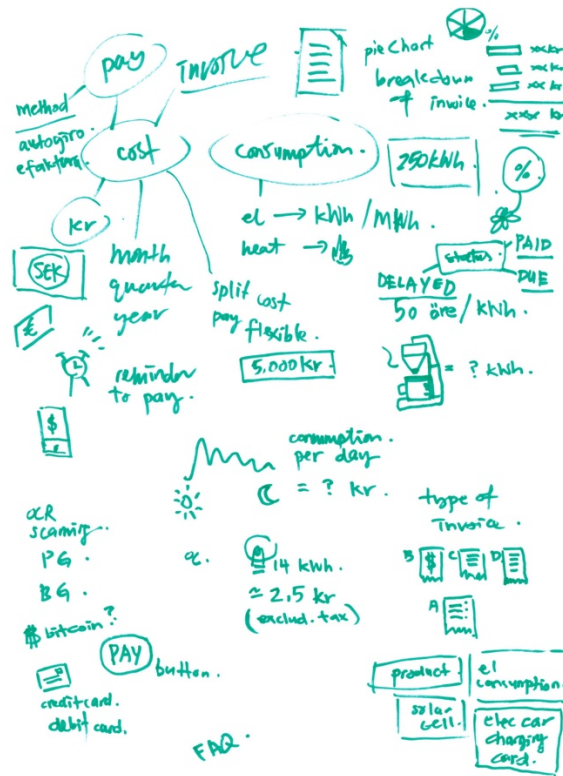

FIGURE 8. Ideas generated with doodling, words and anything that gives form to one's thoughts (Vattenfall Digital Channels, 2016)

4.3.3 Four-step sketch: Crazy 8s

The third step of the rapid sketching process is called Crazy 8s. For each participant, fold a sheet of plain A4 paper to create 8 frames. In each frame, a variation of one of the best ideas is sketched. Each sketch takes 1 minute; in total 8 sketches are generated in 8 minutes (picture 2). This is when the team became very stress and excited at the same time. The exercise works best when several variations of the same idea are sketched. Sometimes there might be less productive ways of looking at the ideas, but sometimes new ways are also discovered. The sprint master must facilitate well so that everybody takes part in the sketch session and set the timer. If there are more user stories, the team

could continue using the same sketching method to come up with more sketches. (Knapp et al 2016, 111–113.)

PICTURE 2. During the sprint, 3 rounds of Crazy8s were conducted for 3 different themes (Photo: Nian Hwei Wong 2016)

4.3.4 Four-step sketch: solution sketch

The solution sketch technique is each person's best idea put down on paper in details. Each participant creates a 3-panel storyboard by sketching on three sticky notes and stick on a sheet of plain paper. Sometimes one panel is sufficient depending on the stories. The storyboard should explain how the customer interacts with your best ideas of product or service solution. It should be self-explanatory, have a catchy title, have strong writing and avoid using 'lorem ipsum'. The previous three steps of the sketch are done privately, and the participant does not have to show his/her notes and Crazy8s to anyone. The team only looks at each other's sketches which should be anonymous. After this session, the day is over and the team will only look at the sketches the next day. (Knapp et al 2016, 114–115.)

4.4 Day three: decide

After a day of rapid sketching on Tuesday, the team goes into the process of making a decision on the third day. There is a pile of sketches waiting to be reviewed and the process of making a sprint decision is optimised with using a few techniques to go through the ideas.

4.4.1 Art Museum, Heat Map, Speed Critique, Straw Poll, Super Vote

Day three starts with putting up all solution sketches onto the wall in a line just like how an art museum would look like (figure 9). Hence the technique is called Art Museum. Each participant walks around and takes a good look at the solution sketches silently. The vital part of this session is to enable the ideas to stand on their own without having to make an explanation on each idea. (Knapp et al. 2016, 131-132.)
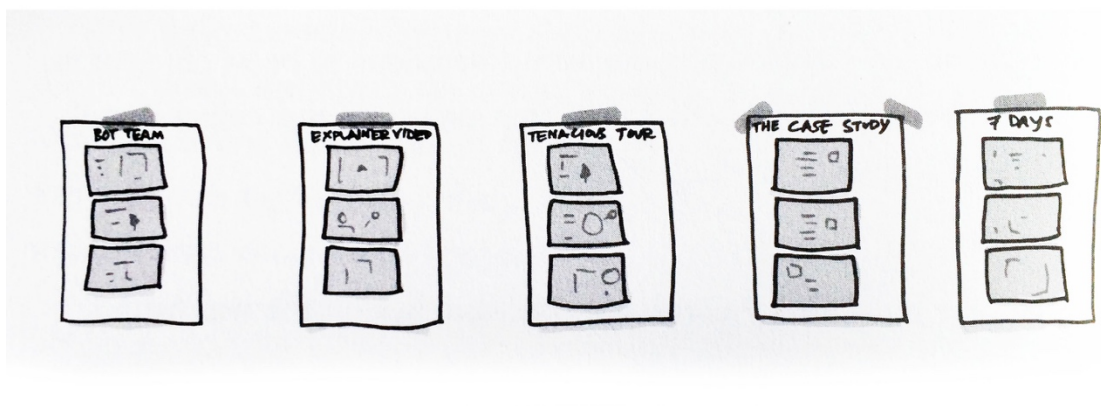

FIGURE 9. Art Museum, where all solution sketches are stuck on the wall for review (Knapp et al 2016, 132)

Next, each participant is handed with twenty to thirty dot stickers. Each participant gets to vote by putting dot stickers on the parts of the solution that they like (if any). They are asked to put two to three dots on the most exciting ideas. If there is concern or question, they should write it on a post-it note and place it below the sketch. Then they should go through all the sketch solutions without talking to other participants and they can use an unlimited number of dot stickers. The grouping of the dot stickers resembles a Heat Map, and consequently the best idea has the most stickers on it (picture 3). (Knapp et al. 2016, 132-135).
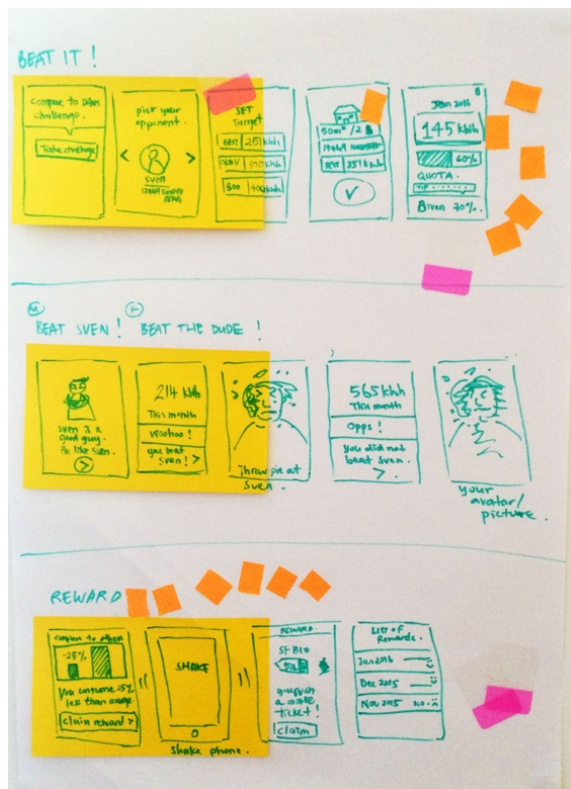
PICTURE 3. Voted ideas with both dot stickers and Super Vote stickers during the sprint
(Photo: Nian Hwei Wong 2016)

These two exercises are also called Silent Voting – the voting process is kept silent to allow everyone to form their own opinions before others bias them. After the voting, the sprint master narrates each sketch solution and calls out the most voted ideas. Concerns and questions are reviewed and then the creator of the sketch solution has the chance to explain if there are any missed ideas that the team failed to see and to answer any questions. This 3-minute Speech Critique is repeated until all sketches are reviewed. This session can be challenging when the team starts to debate what should be included in the prototype but the purpose is to record promising ideas in a very short amount of time. (Knapp et al. 2016, 135-137.)

The next phase is the Straw Poll exercise. Each participant gets a bigger dot sticker, or a dot sticker with a different colour to vote for the ultimate idea. Everyone is reminded again of the long-term goal and sprint questions, erring on the side of risky ideas with big potential. In ten minutes, each participant votes for their ultimate choice. It could be the whole sketch solution or just one idea in a sketch. And then each participant is given one minute to briefly explain his/her vote. (Knapp et al. 2016, 138.)

The last exercise, Super Vote, is the ultimate decision. The decider of the sprint (usually the CEO or project leader) will get three special dot stickers with their initials on them and whatever idea or solution they vote for is what the team will prototype and test on day four and day five. For the rest of the ideas, it is important to compile them together and label them as 'maybe-later' ideas. They may not be the ideas that fit into the sprint prototype but they might be useful to add on later.

It is important to note that this decision-making process is not perfect. Sometimes good ideas do not get selected. However, it is a speedy process to help achieve the sprint's larger goal: getting real world data for Friday's test. It is after the test that the data will lead to the best decisions. It is also a relief to identify the building blocks of the prototype. Sometimes there might be a situation that there are two winning ideas. If so, the team needs to decide whether to build two different prototypes and test both of them or to combine them into one big detailed prototype. (Knapp et al. 2016, 143–147.)

4.4.2 Storyboard

By Wednesday afternoon, the team builds a storyboard together. The storyboard consists of ten to fifteen frames drawn on a big whiteboard (picture 4). A volunteered participant sketches on the board while the team engages and discusses what happens in each frame and gives help as much as possible. The storyboard conveys the scenarios of the prototype for user testing on day five. Start with an opening scene such as the user found the product via a web search. The sprint team should refer to the winning sketch solutions and notes to help fill up the frame one by one until the story is complete. The storyboard should include just enough details so that it helps the prototype work on the next day without doubts.

One should focus on the most important solutions and keep the story fifteen minutes or less so that the prototype can be tested within one hour. Each storyboard frame equals about one minute in the user test. Once the storyboard is done, the hardest part of the sprint is completed. The plan for the prototype is ready and the team deserves a good rest in the evening. (Knapp et al. 2016, 148–158.)
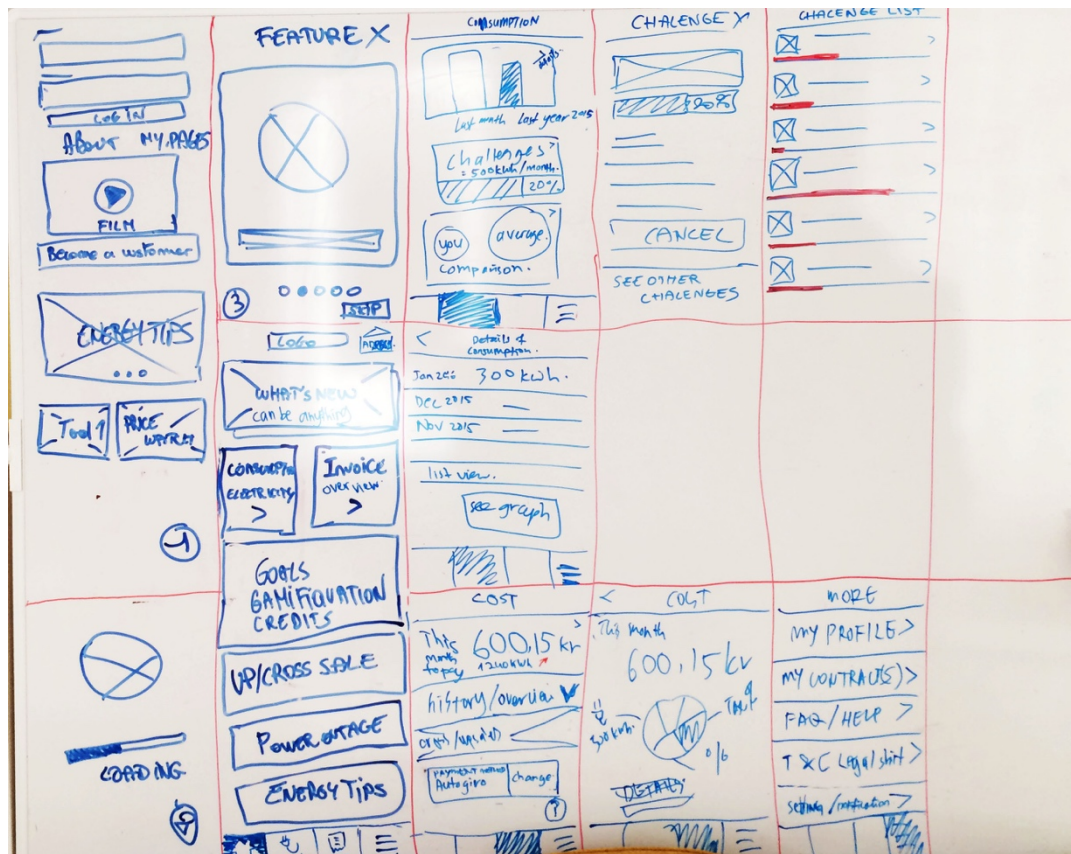
PICTURE 4. Prototype storyboard created during the sprint in Vattenfall (Photo: Nian Hwei Wong 2016)

4.5   Day four: prototype

On the fourth day of the sprint, the team starts to make a prototype based on the storyboard they created on day three. A prototype is something that makes your ideas "real enough to feel," so you can get feedback from users (Direkova, N. & the Google Sprint Masters 2015, 40). According to Knapp, Zeratsky and Kowitz (2016), an ideal sprint prototype has 'Goldilocks quality' that evokes honest reactions from customers. It has to be as real as possible while able to be built in one day. If the quality is too low, people will not believe the prototype is a real product. If the quality is too high, it is not possible to be done in a day. The sprint prototype has to be just right depending on the product and service that the sprint team is building. (Knapp et al. 2016, 170.)

There are no exact rules to follow when it comes to prototyping. The sprint team has to pick the right tools to make the prototype. If it is on screen (website, app, software, etc.), prototyping tools like Keynote, PowerPoint, InVision, and Flinto are very helpful. It is

good to get everyone in the sprint team to share the prototyping workloads but usually most of the work ends up being done by designers.

If possible, the team should be divided so that one person (maker) creates the individual components of the prototype (screens, pages, pieces, and so on), one person (stitcher) is responsible for collecting components from the maker and combining them in a coherent manner, and one person (writer) writes the text used in the prototype that is realistic. This helps the user testing to be much more convincing. An asset collector is someone who collects images or other assets needed for the prototype. An interviewer is the one who will use the finished prototype to conduct user testing on the fifth day. A trial run of the prototype should be conducted to make sure it works flawlessly before bringing it to the user test on the next day. Dividing up the storyboard could help dividind the workload better as well. (Knapp et al. 2016, 186–190.)

4.6   Day five: test

The last day of the sprint is always the most exciting one. The team gets to put their prototype into testing with real users gathering valuable insights very quickly. It is wise to have five users booked for the testing, and the testing should be scheduled already in the beginning of the sprint to ensure the users are well-informed beforehand. There are various ways to recruit users depending on the target audience. (Knapp et al. 2016.)

4.6.1 Five-act interview

Ideally the user test is conducted in a room with a possibility to observe the user's reaction via video camera. The interviewer should be prepared with a script and familiar with the prototype. The five-act interview will help the interviewer conduct a successful interview: welcome the user to the interview with a friendly manner, ask contextual questions such as open-ended questions, ease the conversation by having small talk in between and know a lot about the topic of the testing, introduce the user to the prototype and ask them to think aloud, prepare detailed tasks to get the user reacting to the prototype, and make a short debrief to wrap up the interview. (Knapp et al. 2016, 202.)

Having five users in the test is optimum to find patterns that reveal 85% of the learning (Nielsen, 2000). Hence, testing with more people will not lead to many more insights. Each interview session is ideally about thirty to sixty minutes. The sprint team watches the interviews together and takes notes as a group. At the end of the day, notes are taken in post-it notes and put up on a white board. The sprint team looks for patterns and makes a list of what the users noticed. The patterns should be labelled as positive, negative or neutral. The notes should be gone through and make sense out of them. This is also the time to review the long-term goal(s) and sprint question(s) that the team came up on the first day of sprint. After this, the sprint team can easily figure the next step on how to improve the design and even conduct a follow-up sprint. (Knapp et al. 2016, 202.)

In the Vattenfall My Pages app user testing, 10 participants aged between 26 and 62 were interviewed. All interviewees were smartphone users, and they also owned a house or flat in Sweden. Each session was 30 minutes for one participant, and it included an interview and a testing on the mobile app prototype. The users expected that the mobile app created by an energy company would ideally provide information including: tips on how to save money by using less energy, choosing the right electricity contract, and information on how to be more environmentally friendly. They also thought that the basic function of the app is to be able to check their invoices and pay through their mobile phone. (Vattenfall Digital Channels, 2016.)

During the testing, users were interacting with the prototype without having a specific task assigned to them. A few questions were asked while they were exploring the app on a certain page and certain functions of the app. Based on the data collected from the user test, the most liked features of the app were easy-to-understand graphs on electricity consumption, electricity data comparison between different times of the year, gamified challenges on how to reduce energy consumption, and comparison between the user and other similar households in terms of electricity consumption. (Vattenfall Digital Channels, 2016.)

In our user testing sessions, many of the sprint rules were not strictly followed due to many of the restrictions. In the next section, the insights from conducting the first sprint experience are analysed and it serves as a case study to other designers working in a large organisation.

4.7   Insights from the Vattenfall My Pages app sprint

The idea of the sprint was not to make the best product in just five days but to gain rapid insights of the product by prototyping and testing. From the user tests, many valuable observations were uncovered. When conducting our first sprint, the team identified key features of the app to be built next and discovered unexpected behaviour and comments when users interacted with the prototype. The sprint user test helped to validate the previous assumption on whether a gamified challenge in energy consumption is a good feature or not. With such insights, the team was able to tackle the design challenge much better and faster in the next phase.

Large organisations like Vattenfall have many departments and stakeholders. Within Vattenfall Digital Channels, the project leader and team leader have tight work schedules, and therefore it is rather difficult for them to be involved in the sprint for five days in a row. Hence, the sprint was conducted with all participants on the first three days, and prototyping and testing phase was conducted with only UX designers without involving the leaders. The sprint was great for the team to kick-start the Vattenfall My Pages mobile app redesign project. Not only it served as a team building activity gathering the team to work together to define goals and requirements, but it also raised questions and problems that helped the team to work more effectively and more meaningfully. The key to a successful sprint definitely lies in the hands of a good sprint master who facilitates well.

According to UX designer Alexander Klimov who was also the sprint master, the sprint was effective in helping the team to decide the app requirements much faster. Before it had taken several weeks to decide the requirements in order to start designing the wireframes, but the sprint has decreased the amount of time needed for the process into a few days. It was productive and so much fun working on the sketch solutions during the sprint. (Klimov, 2016.)

During the prototype day, only one designer was assigned to make the prototype (Vattenfall Digital Channels 2016, Appendix 2). Because of the time limit, a low fidelity prototype was built. But for the team, it worked well enough to demonstrate ideas and sparked reactions from the users that fulfilled the sprint goals. The key is to inform the users in

the beginning about the quality of the prototype and adjust their expectation of the experience. The findings were recorded and then analysed and shared with the sprint team later (Vattenfall Digital Channels 2016, Appendix 3). Based on these real users' findings, I was able to improve the user-focused prototype quickly (figure 10).
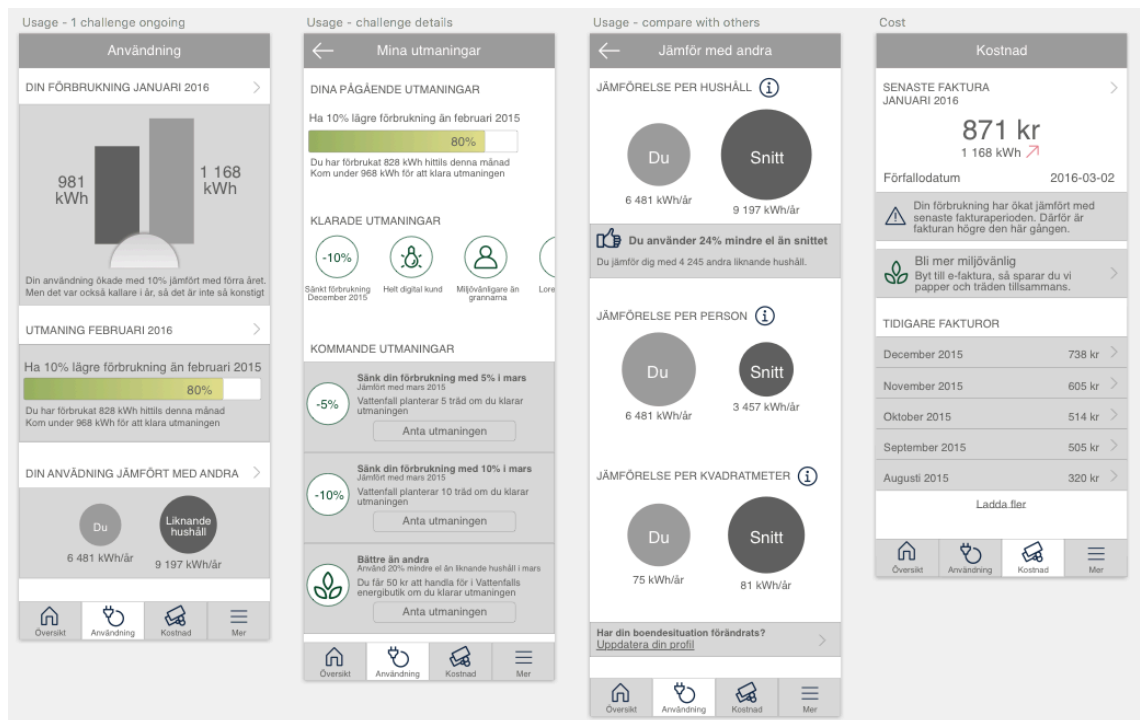

FIGURE 10. Clickable prototype built with Sketch and InVision (Vattenfall Digital Channels 2016)

Although the sprint is a flexible method that could be modified to suit a specific agenda, it is still considered a rather challenging activity to be arranged and conducted. The sprint occupies a full work week for most participants who consequently have to clear their work schedule and this could be very difficult to arrange. The trick of organising a sprint is to schedule it with all participants as early as possible, preferably a few weeks to few months in advance. And although the five-day sprint is fun and good for teambuilding, it could be very exhausting for participants. Therefore, the sprint is not recommended to be held too frequently.

5   CREATING USER-FOCUSED PROTOTYPE

According to Gothelf & Seiden, a prototype is an approximation of an experience that allows you to simulate what it is like to use the product or service in question. It needs to be clickable (or tappable). (Gothelf & Seiden, 59.)

As a visual designer working in Vattenfall Digital Channels, prototyping skill is one of the requirements. I work with prototypes and wireframes almost on a daily basis in the UX team. After the sprint week, the findings collected from the user test were presented to the team. The team discussed about the next steps of the project, and I was assigned to improve the prototype with more visual details and focus on users' feedbacks. The five-day sprint helped me to understand the project from the start and the rapid sketching process on day two provided many ideas that I could use in the prototyping process.

The target set during the sprint was also the goal of this project: to improve the sprint prototype to help the users to understand their electricity usage and costs, so that they become more energy smart in a fun and engaging way. Based on the sprint's rapid sketching process and prototype, I made improvements to the Vattenfall My Pages mobile app design with better visual details such as crafting detailed icons and providing colour schemes to the prototype. The results from the sprint's user test were used in my project as requirements. Based on these requirements, I made modifications to the design to improve the user experience of the mobile app.

The software that I used to make the prototype was Sketch, a user interface design software that helped me to design detailed mobile app interface. For visual design, I used Vattenfall's corporate brand colour palette, fonts, icons and visual language. The visual language of the prototype was consistent with Vattenfall My Pages website interface but was adapted to mobile design. Although the content of the Sprint prototype was created in Swedish language, the Sprint was conducted in English because the team has participants of diverse background.

The Vattenfall My Pages mobile app prototype has a login page and after the user has logged into the app, there are several features which will be explained in the following chapters. In chapter 5.4, an overview page with smart energy saving tips and notifications

is explained. An electricity consumption page which shows the user's electricity usage in kilowatts per hour (kWh) will be explained in chapter 5.5. In chapter 5.6, gamified challenges on how to save energy consumption are explained and the feature while allows the user to compare his/her own electricity consumption to other households is explained in chapter 5.7. An invoice page with electricity invoices is discussed in chapter 5.8 but a 'more page' which allows the user to access to his/her profile, contracts, settings, customer service, and links to other Vattenfall apps will not be discussed as it is out of scope at this stage of design. There is also an onboarding experience for the first-time user explained in chapter 5.1, and in chapter 5.2, loading screens filled with energy saving tips will be discussed.

5.1 First-time onboarding experience

Displaying onboarding screens to first-time users has become a common practice in mobile apps. The purpose of these onboarding screens, also referred to as walkthroughs, is to introduce the app and demonstrate what it does. In this Vattenfall My Pages app, I used the benefits-oriented onboarding technique (Satia, 2014). It is best to show a maximum of three key benefits of using the app, and one page should display only one benefit at a time (figure 11). The onboarding experience should be brief and consistent, guiding user through the app even before the user creates a profile in the app.
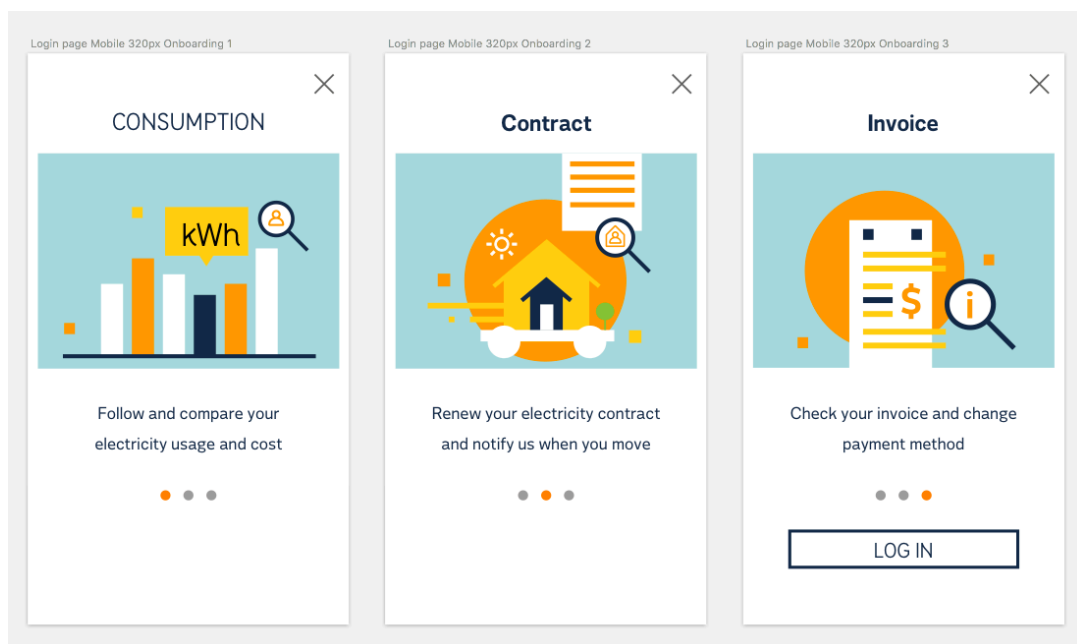

FIGURE 11. Onboarding screens showing three benefits of the app, one page at a time (Wong, 2016)

5.2 Loading screen with energy saving tips

During the sprint's sketch solution session, I came up with the idea of showing tips that are related to energy savings while the user waits for the app to load. This assumed idea was later validated in the sprint user test that user would indeed preferr to have these tips instead of a blank waiting screen when the app is loading. Such validation is very helpful in the visual design process.

For improving the prototype, I created eye-catching illustration to make the tips more interesting to read. The colours and visual languages are from Vattenfall brand guidelines. When user signs in to the mobile app for the first time, it could take some time to load their profile and account details. The energy saving tip is displayed when their profile and account details are loading. There is a button which the user can click to read the next tip. When the user's information is loaded, a check icon is shown so that the user is aware that the app is ready to proceed to the next step (figure 12).
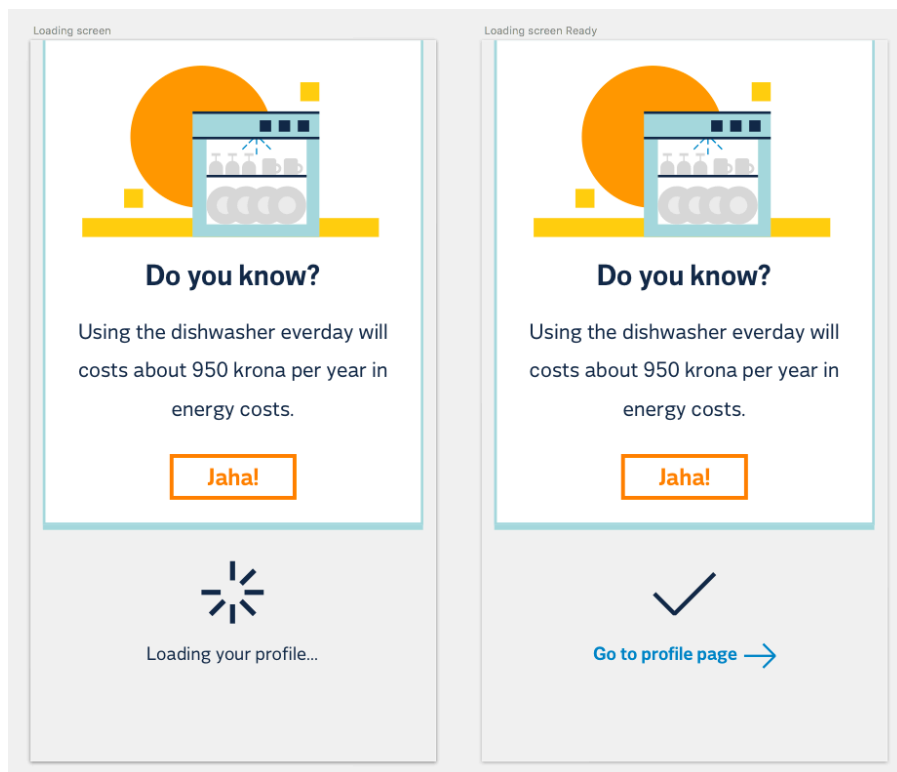
FIGURE 12. On the left, the screen displays a loading animation while on the right the loading is complete (Wong, 2016)

5.3   Login with mobile BankID

Currently the app is allowing user to log in with their Vattenfall customer ID and password as well as email and password. During the sprint user test, the team tested the different kinds of methods that the user prefers to log into his/her Vattenfall My Pages App with. Almost all users preferred the mobile BankID login method. It is a popular digital identification for Swedish residents to easily sign into public and private services such as banking, changing address and so on (Finansiell ID-Teknik BID AB, 2016). The team had also validated that the users do not prefer social media credentials as a login method to their energy consumption app because they feel insecure. This was a valuable finding for the team and the company.

5.4   Overview start page: card design interaction

During the sprint week, the team had arguments regarding mobile interaction. Some participants were worried that the users are not familiar with swiping interaction if the design requires them to swipe left and right on notifications displayed as stacking cards. However, it was validated that the users are prompt to swipe with their thumb when it comes to card design, hence breaking the assumption that the users are not familiar with this interaction pattern in using mobile app.

I added interaction design details in my prototype to better illustrate how it looks like when the user swipes to left and to right of the card (figure 13). When the user swipes to right, the next card is shown. When the user swipes to the left, the card is hidden. The next upcoming card is faded until the interaction is completed. I had also included an example of a news item that could be displayed on the card. Example 1 shows precise information regarding user's consumption and example 2 shows a contest that the user could participate in to win an electricity bicycle (figure 14). There are news titles displayed next to an icon that helps illustrate the type of news, body text of news and a call-to-action button.
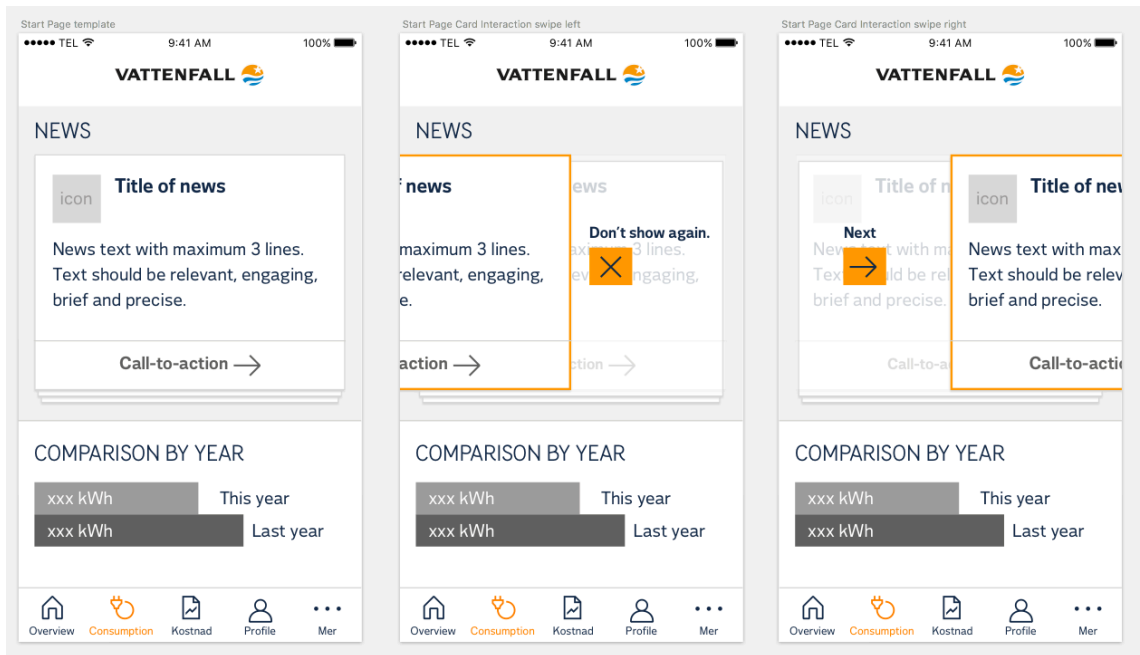
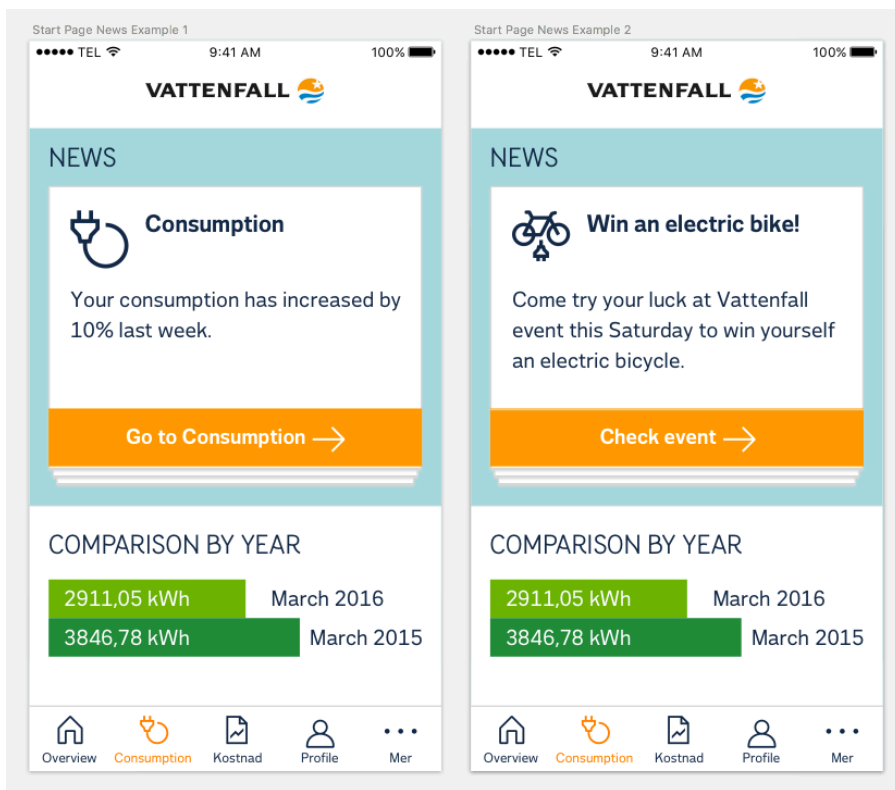FIGURE 13. News card design interaction (Wong, 2016)

FIGURE 14. Example news 1 and example news 2 (Wong, 2016)

5.5   Consumption page: consumption graph design

During the Sprint user test, the team found out that most users do not follow their energy consumption. The users simply do not understand the energy measurements in kilo watt per hour (kWh) and what matters is the cost measured in Swedish Krona (kr). However, house owners tended to be more engaged in electricity consumption because they have fairly high monthly costs. Therefore, it was decided that showing a graph with detailed electricity consumption should be kept as a feature in the app. The design should help the user to clearly navigate his/her consumption details by using a bar graph with clear colours. In the app, the idea is always to start with very straight-forward information on the consumption start page (figure 15).
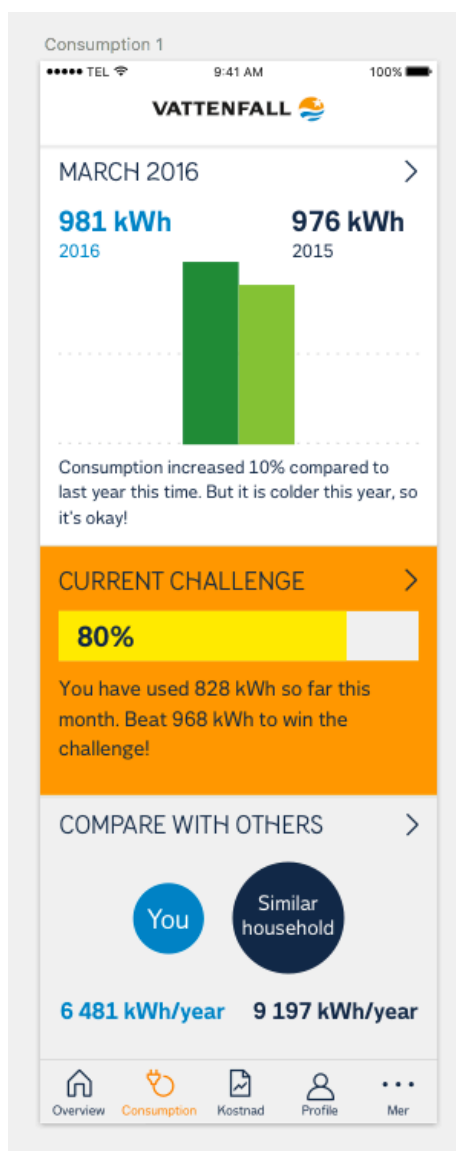

FIGURE 15. Consumption start page with straight forward information (Wong, 2016)

If the user is interested in finding out more details, he/she can click on the section and view the graph in a detailed level. The consumption graph has five levels categorised by year, season, month, day and hour. Based on the findings from the sprint user test, I made the design of the app more exciting by using fresher colours. The app is also designed with an educational approach so that users are more aware of how their electricity consumption associates with their daily lives. Friendly illustrations are added as an aid to the educational tips. There is also a 'learn more' section to help the user to understand jargon and also electricity usage in general (figure 16).

FIGURE 16. Left: consumption details by year. Right: consumption details by day. Tips and 'learn more' section helps user understand their electricity consumption in a friendlier way (Wong, 2016)

5.6   Consumption page: gamified challenge

A gamified challenge was proposed in the rapid sketch process during the sprint and the idea of having a fun game while reducing electricity usage was validated in the user test. The users enjoy having goals to help them save electricity consumption. The challenge page shows user's ongoing challenge, upcoming challenges and also challenges that the user has already completed (figure 17). The design of challenge page is enticing and should be supported by good interaction design that encourages user to participate. For example, a push notification could be sent out every month to encourage the user to participate in the available challenges. The design of the challenges should also be reasonable and relevant to the user so that the user does not feel discouraged by not being able to complete the challenge.
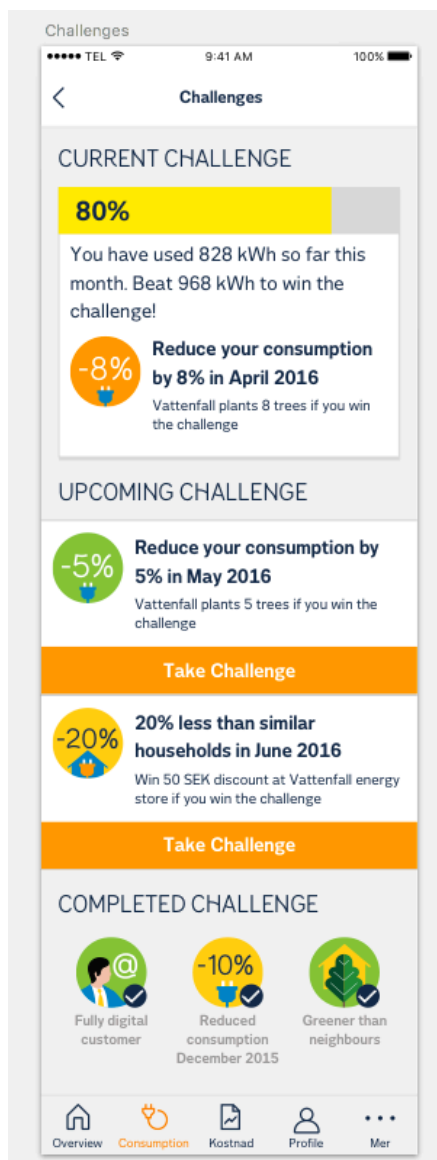

FIGURE 17. The challenge page showing an ongoing challenge, upcoming challenges and also the challenges that the user has already completed (Wong, 2016)

5.7 Consumption page: compare electricity consumption to other households

One of the favourite features tested in the sprint user test was comparing user's electricity consumption to others. The user would like to know exactly how the comparison is done, and therefore the accuracy of the comparison data plays a crucial role in building this feature. However, at this stage of prototyping I did not consider the mechanism behind the feature but rather focused on how to present the comparison data as straightforwardly as possible. At the consumption start page, the user is able to see his/her electricity usage compared to other similar households. When the user clicks on the Compare with others page, he/she can see more comparisons: comparison by person and comparison by square meter (figure 18). The data are displayed as a round circle graphic using the size to show comparison. The explanation is right beneath the comparison chart showing a thumb up graphic to signal a positive comparison and a thumb down graphic to signal a negative comparison.
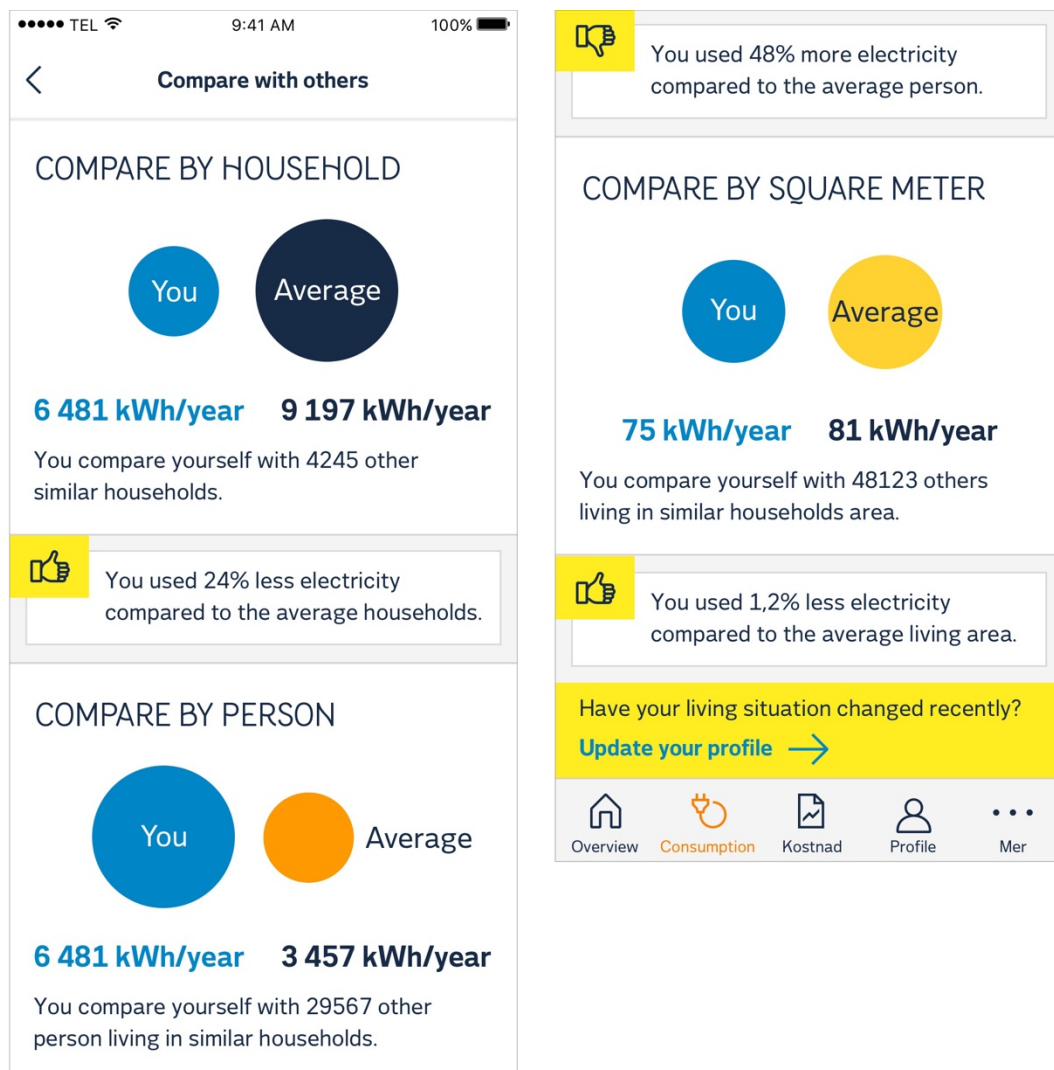
FIGURE 18. Compare to others page (Wong, 2016)

5.8 Invoice

Checking the electricity invoice was a feature users expected from the My Pages mobile app. During the sprint user test, the users were interviewed about their expectation of the app. The ability to check invoices was mentioned many times during the interviews. However, it was not so important for the users to be able to pay their invoice through the app (Vattenfall Digital Channel, 2016). The visual design of the Invoice page is straightforward: important information is highlighted such as the invoice amount and the due date. When the invoice is viewed in details, a pie chart shows the breakdown of the invoice (figure 19).
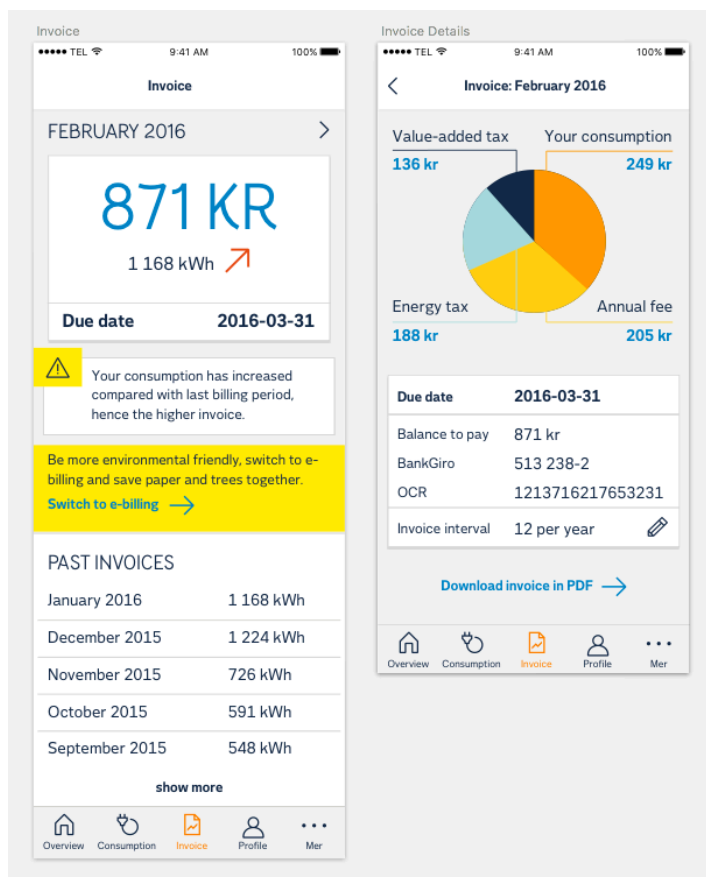

FIGURE 19. Compare to others page (Wong, 2016)

After the visuals were made for the mobile app, the pages were put into an online prototyping tool, Invision, so that the pages can be animated and linked to each other. A holistic experience of going through the mobile app prototype can be accessed by stakeholders via a web link shared with them (figure 20). This prototype presentation fulfilled the simulation of the mobile app experience without having to go into coding and development.
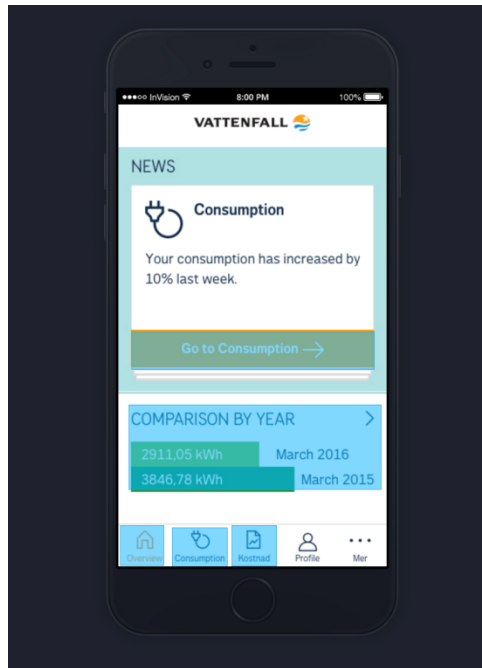
FIGURE 20. Prototype presented in Invision (Wong, 2016)

5.9   Project feedback

Based on the sprint, I was able to improve the quality of the prototype with high fidelity visuals. The improved prototype was shared with the UX team and the feedback was positive. According to UX designer Alexander Klimov the prototype was very pleasing and well-designed according to Vattenfall branding guidelines (Klimov et al, 2016). The visual language was cheerful and fun, and the illustration was very supportive and helps to present the energy saving tips well (Klimov et al, 2016).

The improved prototype will be presented to more business stakeholders in Vattenfall to collect further feedback before planning for the follow-up sprint. It is very important to be able to present the My Pages app prototype with high fidelity visual design so that more detailed feedback can be collected before going into development and production. The improved prototype provided a better simulation of what it is like to use the product or service and whether it is user-focused based on the real users' feedback from the sprint. This helped to explain the project more efficiently and more convincingly to other stake-holders especially in an organisation as large as Vattenfall.

6   CONCLUSIONS AND DISCUSSION

By studying the Google Venture Design Sprint in this thesis, I have gained thorough understanding of the rapid design method and the various UX techniques used in different stages. Being a participant in the five-day sprint at Vattenfall has allowed me to go through the method in practice and learn how the sprint could be modified to suit different design processes.

The sprint is a highly flexible method which can be modified to accommodate specific needs and challenges. For example, it was suggested to set a long-term goal during the first day of the sprint. However, our team at Vattenfall Digital Channels did not set a long term goal during the sprint, but instead we listed out sprint questions to help our team set a goal for the sprint. Another example of flexibility is that perhaps not all sprint participants are required to take part in the prototyping process if it does not help to speed up the process. It is up to the team and the sprint master to decide together if everyone is needed on day four (prototype) and day five (user test). However, it would be great to participate in another sprint to further study the process and learn how to adapt the flexibility of the sprint to solve other problems and challenges.

Throughout the study, I have learnt that in order to conduct a successful sprint, the role of the sprint master (or facilitator) is very crucial. Gathering the right team, scheduling the sprint week, booking the user test without knowing the test details, and preparing for the sprint could be regarded as tedious work, but a sprint master has to facilitate these basic requirements well enough to ensure a smooth sprint process. Throughout the sprint, the sprint master facilitates the introduction and discussions, and drives the decision-making process at every stage of the sprint in a very short timeline. Therefore, having a good sprint master is very important in a sprint in order to deliver good results.

By participating in the sprint at Vattenfall, I have observed that every stage of the sprint is rather important, especially the first three days. I have realised that one of the most important values of the sprint is to achieve shared understanding of the project's scopes and goals in the team. This is especially valuable for a large organisation, because building a shared understanding of a design project helps to present the outcome of the design better to stakeholders in other departments. For a visual designer, it is definitely valuable

to understand the design project from the business and customer's perspective, not just from the design's perspective. This is because when presenting a design project to other stakeholders in a large company, using only design terminology to explain the project to people who do not have basic design knowledge is not helpful. For example, instead of just explaining the card interaction design in a mobile app which enables the users to better navigate the news, it could also be presented that the news are carefully curated so that users are better engaged with their electricity consumption.

The sprint as a design method is very similar to participatory design. In usability studies, participatory design is described as a process that involves developers, business representatives, and users working together to design a solution. It actively involves the users in the design process to help ensure that the product designed meets their needs and is usable in the process (Usability Body of Knowledge, 2011). The sprint user test gives the users a voice in the design process. This helps the visual designer to validate design assumptions by actively seeking feedback during the design process. It also helps greatly in making a user focused prototype design.

The sprint is also great in helping to shift the focus from purely technical requirements and issues towards the needs of the business and users. It acts as a forum for designers, developers and business representatives to work with each other in the prototype storyboard session, and to understand their users during the user test. The sprint also enables a team to rapidly design, evaluate and iterate design approaches by having follow-up sprints after the first one. In the research project, although the outcome of the improved high fidelity prototype was received positively among the team, I hope that the prototype will be tested again with more users before going into production for another round of feedback and validation.

Overall, the sprint is regarded as a fun and intense week working closely together in a team to gain insights from the users quickly. I enjoyed the process very much, especially the Crazy8s sketching and the voting process. The sprint also served as a team building activity that brought the team together through tackling the same problem and achieving the same goal. The sprint method helped greatly in building a user-focused prototype for the mobile app and it should be used as an iterative process and as flexibly as it is convenient for a team in a large organisation.

Finally, while working on the research project as a visual designer employed in a large company like Vattenfall, I have noticed the shifting roles of a visual designer. Working on digital products such as designing a mobile app, is a team-oriented project. A visual designer is asked to work on iterating the visual design framework on wireframes in a small chunk of time instead of spending a few weeks perfecting the colours and pixels. The visual designer is also required to work closely with UX designers. Hence UX knowledge is much appreciated in the team. Instead of showing the design to the team, the design is being translated into an interactive prototype to be tested by the users. Hence it is becoming more crucial as a requirement for a visual designer to be able to make an interactive prototype when designing a mobile app. It could be intimidating at first to make wireframes interactive but with the help of prototyping tools like Invision and Flinto, I was able to create the prototype easily during my research project. With such prototyping tools, a visual designer is able to show his/her design intuitively to others and explains the design much more effectively.

By studying the theoretical matters discussed in this thesis, I have gained better knowledge in UX techniques from the sprint. I would encourage a visual designer to take on the role to facilitate design process through conducting a sprint. Depending on the types of project, a visual designer should organise a sprint to find out more about design requirements holistically with different stakeholders together in the same sprint instead of going through many individual meetings that could end up being ineffective. By participating in a user test, a visual designer could better understand how visual design influences user's behaviour when interacting with a mobile app. And building a mobile app that fulfils users' needs and enhances their experience is an elementary requirement for any designer and company that aims at creating successful digital products and services.

REFERENCES

Direkova, N. & the Google Sprint Masters. 2015. Design Sprint. Read 05.03.2016. https://developers.google.com/design-sprint/

Finansiell ID-Teknik BID AB. 2016. This is BankID. Read 10.05.2016. https://www.bankid.com/en/

Gothelf, J. 2013. Lean UX: Applying Lean Principles to Improve User Experience. 1st edition. Carlifornia: O'Reilly Media, Inc.

IDEO.org. 2016. Design Kit Methods: How Might We. Read 28.04.2016. http://www.designkit.org/methods/3

Knapp, J. 2012. GV Library. The Product Design Sprint: Diverge (day 2). Read 07.05.2016. https://library.gv.com/the-product-design-sprint-diverge-day-2-c7a5df8e7cd0#.iwhsr3pc9

Knapp, J. 2013. From Google Ventures, The 6 Ingredients You Need To Run A Design Sprint. Read 12.03.2016. http://www.fastcodesign.com/1672889/from-google-ventures-the-6-ingredients-you-need-to-run-a-design-sprint

Knapp, J. 2013. How To Conduct Your Own Google Ventures Design Sprint. Read 11.03.2016. http://www.fastcodesign.com/1672887/how-to-conduct-your-own-google-design-sprint

Knapp, J., Zeratsky, J., Kowitz, B. 2016. Sprint: How To Solve Gig Problems and Test New Ideas in Just Five Days. New York: Simon & Schuster.

Klimov, A. 2016. Design Sprint My Pages App: User Test Analysis. PDF Presentation. Vattenfall Digital Channels Team Meeting. 08.03.2016. Stockholm.

Klimov, A. UX Designer. 2016. Interview 01.3.2016. Interviewer Wong, N. Stockholm.

Klimov, A., Payen, G. Mostafa, G. Lindberg, P. 2016. UX meeting 29.5.2016. Vattenfall Digital Channels. Stockholm.

Kniberg, H. & Skarin, M. 2010. Kanban and Scrum: making the most of both. InfoQ.com: C4Media.

Nielsen, J. 2000. Why You Only Need To Test With 5 Users. Nielsen Norman Group. Read 10.04.2016. https://www.nngroup.com/articles/why-you-only-need-to-test-with-5-users/

Rice, E. 2011. Design Thinking: A Process for Developing and Implementing Lasting District Reform. Stanford Center For Opportunity Policy In Education. Read 08.3.2016. https://edpolicy.stanford.edu/sites/default/files/publications/design-thinking-process-de-veloping-and-implementing-lasting-district-reform.pdf

Satia, G. 2014. Mobile Onboarding: A Beginner's Guide. Smashing Magazine. Read 10.05.2016. https://www.smashingmagazine.com/2014/08/mobile-onboarding-beginners-guide/

Usability Body of Knowledge. 2011. Participatory Design. Read 16.09.2016. http://www.usabilitybok.org/participatory-design

Vattenfall. 2016. Career. Read 28.02.2016. http://corporate.vattenfall.com/career/

Vattenfall. 2016. Key Fact. Read 28.02.2016. http://corporate.vattenfall.com/investors/key-facts/

Vattenfall. 2016. Sales. Read 28.02.2016. http://corporate.vattenfall.com/about-vattenfall/operations/sales/

Vattenfall. 2016. The Vattenfall Way. Read 02.03.2016. https://mobileintranet.vattenfall.com/en/mob/the-vattenfall-way-principles-mobile.htm

Vattenfall AB. 2016. Google Play: Vattenfall Mina sidor. Read 24.04.2016. https://play.google.com/store/apps/details?id=com.vattenfall.se.minasidor.a&hl=sv

Vattenfall AB. 2016. iTunes: Vattenfall Mina sidor. Read 12.04.2016. https://itunes.apple.com/se/app/vattenfall-mina-sidor/id582654752?mt=8

APPENDICES

Appendix 1. Vattenfall My Pages app design sprint deck

## DAY 1 SCHEDULE

09:45 — 10:10	Demo of today's app
10:10 — 10:30	App Store feedback
10:30 — 10:50	Review Google Analytics
10:50 — 11:20	List of most common cases coming in to contact center
11:20 — 11:50	Go through old research and design proposal
11:50 — 12:45	LUNCH
12:45 — 13:45	Quick demos of competitor apps
13:45 — 14:00	What can make us unique?
14:00 — 14:30	Everyone expresses the problem as they see it
14:30 — 15:00	Identify the main problem and define user story

Digital Channels

VATTENFALL
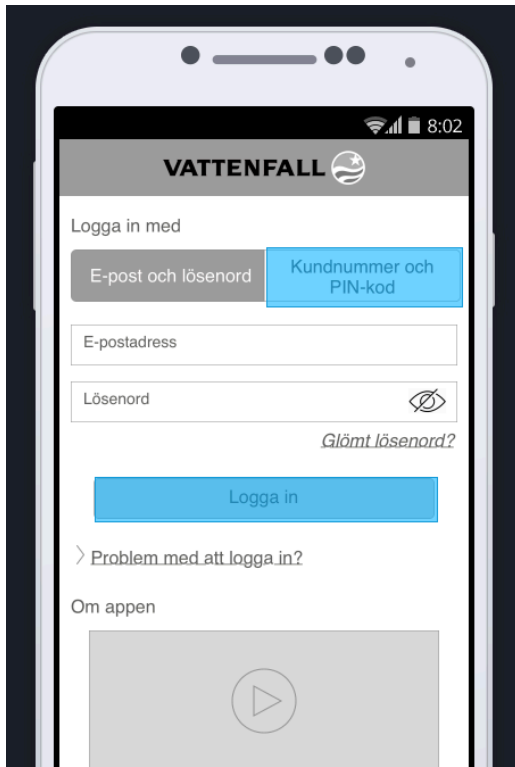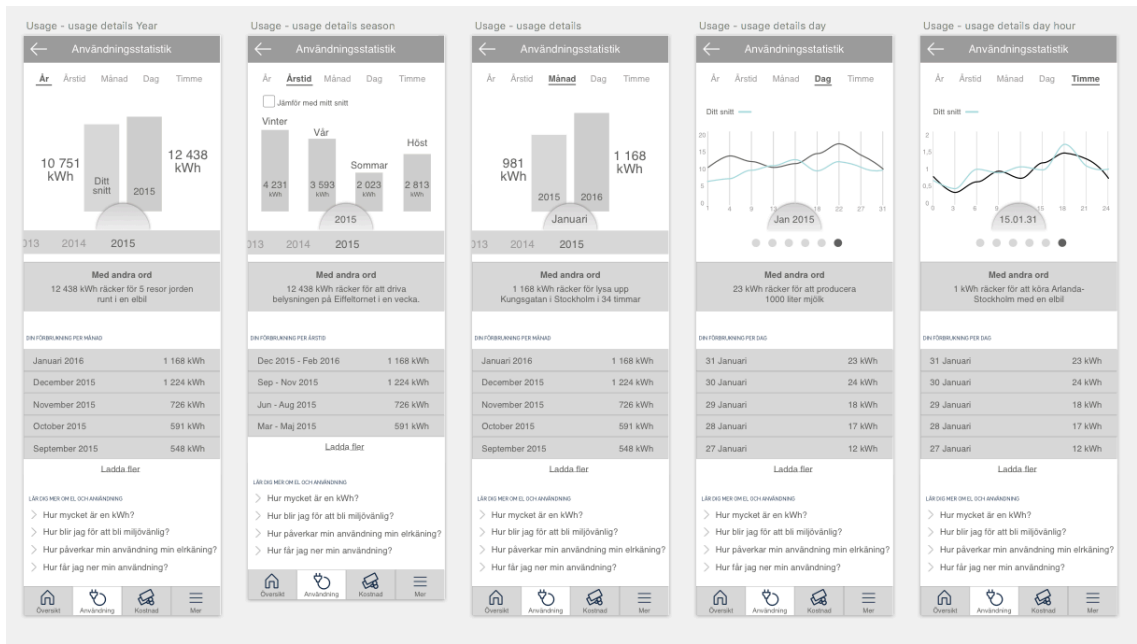
AS A USER I WANT TO GET HELP UNDERSTANDING MY USAGE AND COSTS, SO I CAN BECOME MORE ENERGY SMART IN FUN AND ENGAGING WAY

48

Appendix 2. Sprint prototype
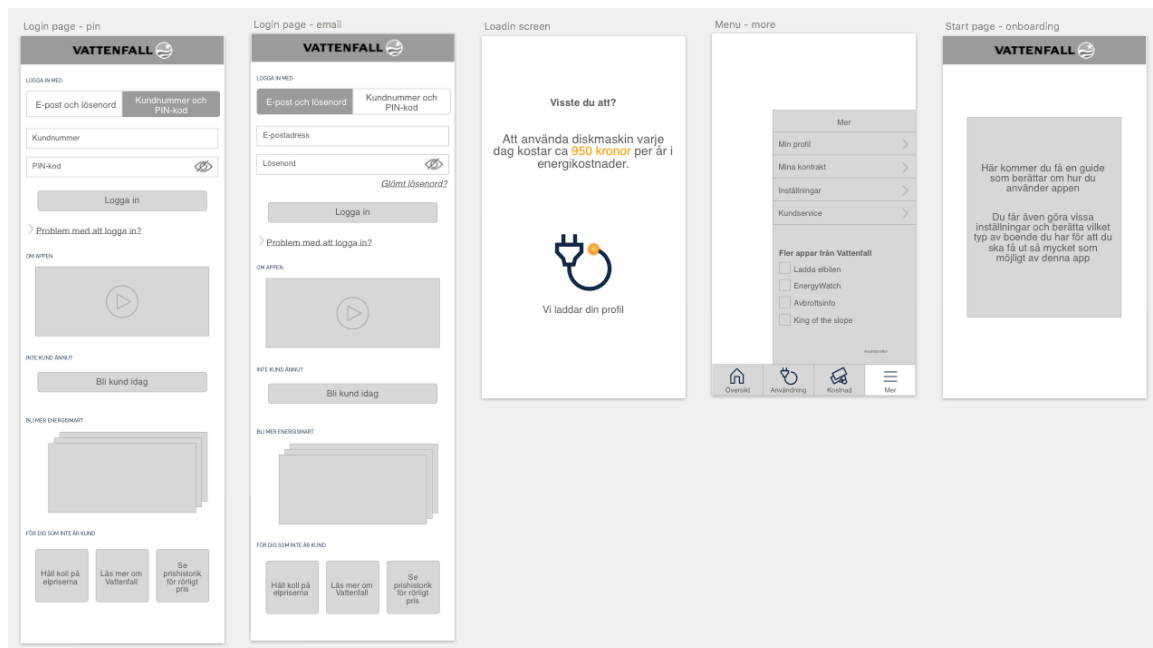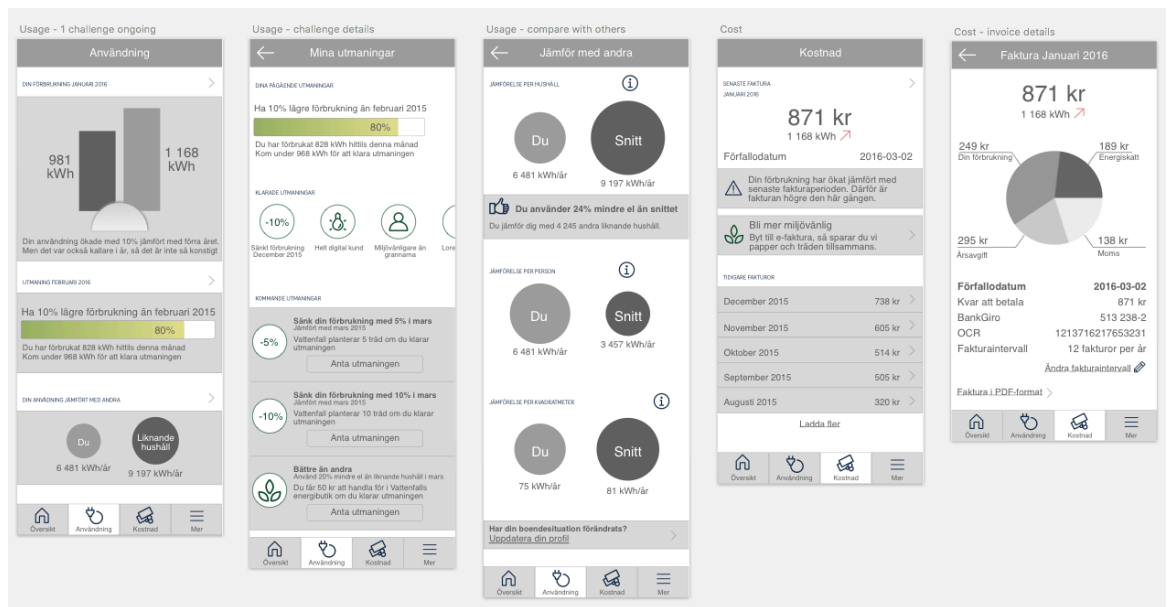
Appendix 3. Sprint user test interviews

BACKGROUND AND METHODOLOGY

As last day of the design sprint we validated our ideas with our end users.

We had a short interview with each participant and they got to try out the prototype, explore it by themselves and come with feedback.

Norstat
~
26 February

10 participants
~
age 26-62

Smartphone users
—
House and flat owners

Interview & Prototype test
~
30 minutes per participant

Digital Channels

VATTENFALL

LOADING SCREEN

Visste du att?

Att använda diskmaskin varje dag kostar ca 950 kronor per år i energikostnader.

Vi laddar din profil

Display some useful information while loading the data.

Several participants were positively surprised because they just mentioned that they would like to have this kind of tips before they tried the prototype.

It was at the same time not enough time to read the text for some of the participants, so it is important detail to think of.

VATTENFALL

CHALLENGES

- 4 participants were really excited about this feature
- 4 more found it interesting but needed more motivation to start using it
- 2 found it less interesting
- (Younger participants were more interested in this feature)

"It feels good that Vattenfall encourage me to reduce my own costs"

For some users it was enough with a badge

Some wanted to have connection to environment, like planting trees

After doing several challenges participants would expect something more valuable to them, like discount at some partner or a souvenir from Vattenfall

Important comment: "I have already done everything I can to reduce my costs, I do not want to be disturbed by more challenges"

GENERAL

- People living in the house were more engaged and were more willing to talk about electricity since it is a big monthly cost for them but they did not follow up their consumption really

- We shall work on making the app more exciting and learning. Describe what is kWh, make a simple movie/animation doing that, have a mascot helping you throughout the app, compare kWh to everyday things like watching TV, listen to Spotify

- Overall we did not get so much feedback on details. Probably, because of prototype's limitations

- Participants tried to swipe it is needed. So, people are clearly familiar with these interaction patterns in mobile apps

Digital Channels

MOST LIKED FEATURES

- Simple graphs on consumption

- Comparison in consumption

- Challenges

- Comparison with others

VATTENFALL

Appendix 4. User-focused prototype
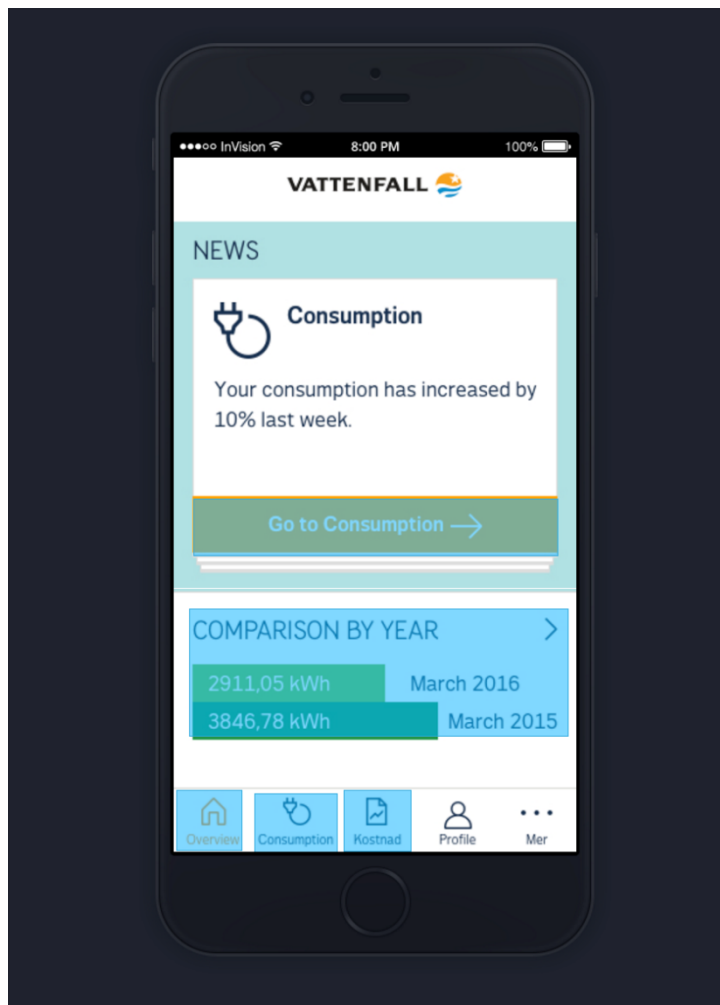
Interactive Prototype in Invision accessible at https://invis.io/7V7I8TBGS