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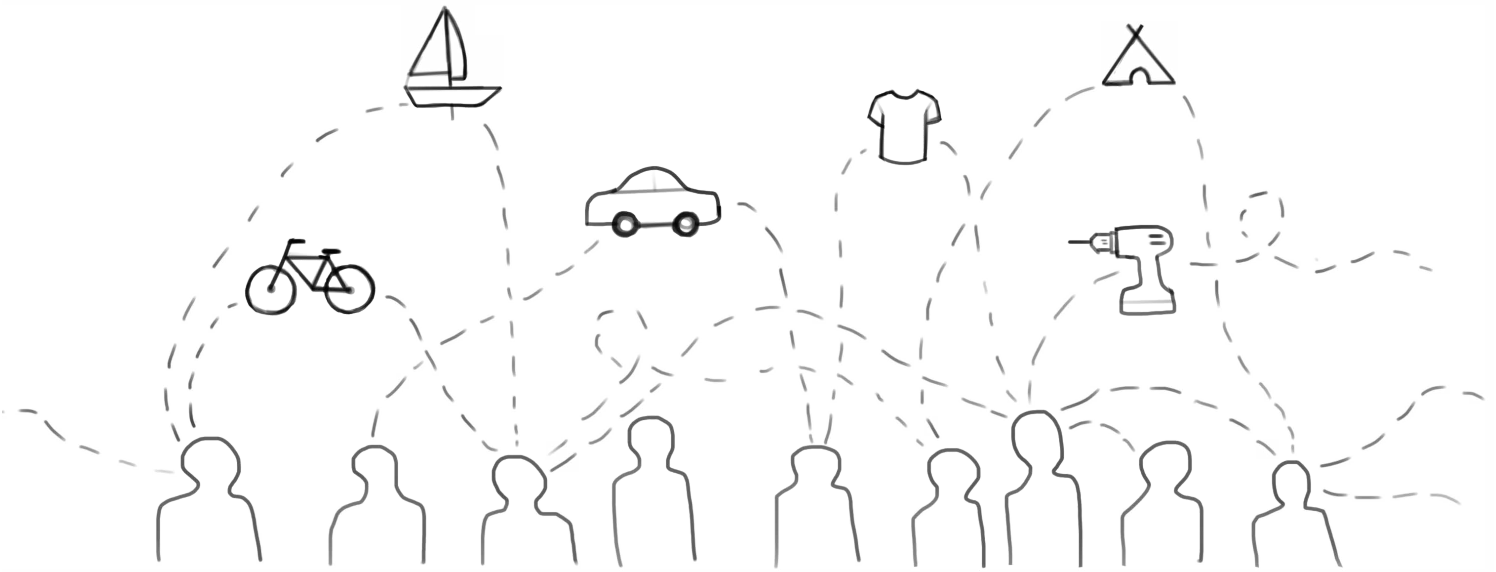

Design for Exchange

Developing guidelines and exploring opportunities to design a tent for circularity.

Master's Thesis in the Master Program Industrial Design Engineering

ELIN HAGMAN

LISA WENDT

CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg, Sweden 2018

Department of Industrial and Materials Science
Division of Design & Human Factors

Master of Science Thesis

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Cover photo: Illustration of exchange of products, Elin Hagman
Print: Repro Service Chalmers

Göteborg, Sweden, 2018

ACKNOWLEDGEMENT

The great number of people that have been involved in this project deserve a special thanks.

Firstly, we would like to thank Anneli Selvefors, our supervisor at Chalmers, that always came with interesting and uplifting input when we doubted the most and Oskar Rexfelt, our examiner, that guided us in the right direction. Both Anneli and Oskar are part of the research project Use2Use and their knowledge within the field have been of great value.

Secondly, we would like to thank Emma Gustafsson, our contact person at Fjällräven, and the other people we got in contact with at Fjällräven. Without your help and trust in us, this project would not have been this exciting.

We are very thankful for all the participants that offered their time to give valuable input to our research and concept development through survey, interviews, workshops and user testing. Especially thanks to Kaffegruppen, that helped us stay motivated and energized.

Finally, we would like to thank our opponents, Oliva Bång and Sam Edvardsson ceder, for the great feedback.

Gothenburg June 15th 2018

Elin Hagman & Lisa Wendt

ABSTRACT

This thesis was developed together with the research project Use2Use, at the division Design & Human factors at Chalmers University of Technology, which has the main objective to develop a tool to support design and development work towards a more sustainable consumption. One way to support sustainable consumption according to Use2Use is to design for closer user loops of products that will result in higher utilization during the product life cycle. Designing for product circularity will result in reduced resource use and less need for newly produced products. To design for this transfer of product ownership or access between users is defined as Design for Exchange.

The aim of the thesis was to get a better understanding of how products should be designed for exchange and the objective was to develop design guidelines for exchange. To make this possible the thesis started with a broad research about different consumption paths that resulted in the first version of guidelines. The guidelines were verified and used in a design case and afterward evaluated and updated.

The design case focused on one specific product and one specific exchange path that was beneficial from an exchange perspective. The product was a tent, Keb Dome 2, from Fjällräven and the exchange path was renting. The guidelines for exchange were used during ideation to come up with improvements to the tent and service to make it possible for a first time user to rent and use the tent with confidence. The design case resulted in a final concept that improved the entire customer journey by facilitating required activities and reducing the number of unwanted activities. The final concept included a webpage that made it possible to find a suitable tent to rent, a control system to ensure high quality of the tents, easy to follow instructions of how to use the tent correctly, color codes on the tent to guide the user and a peg case to make it easy to check that no parts are missing.

The design case gave insights into how to refine the guidelines for exchange. The guidelines can be used by other designers during product development to support circularity and increased utilization of products. Some important aspects of the guidelines are that the product is intact between user loops, the condition of the product is easy to control and the product is easy to use. Although the key aspects of the guidelines differ between different products and different exchange paths.

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1. INTRODUCTION

This chapter presents the background, aim and research questions to the project as well as an overview of the project process.

1.1 Background

The United Nation has put together seventeen goals towards sustainable development where goal number twelve is to *Ensure sustainable consumption and production patterns*. The consumption today has a big negative effect on the environment and if the global population reaches 9.6 billion by year 2050, resources of almost three planets will be needed to sustain current lifestyles. A change in our consumption and production pattern is a must in order to prevent damage to the environment (United Nations, 2018)

A way to change our patterns is to step away from the today's linear economy where we have a take-make-dispose mentality of products and move towards circular economy. In circular economy, no waste is produced and products and materials are kept in use to not affect the environment negatively (The Ellen MacArthur Foundation, 2018).

Collaborative consumption is one way to reduce the consumption and production of new products. In collaborative consumptions, sharing the resources is the key and the researcher Rachel Botsman (2013) explains it like: "An economic model based on sharing, swapping, trading, or renting products and services, enabling access over ownership. It is reinventing not just what we consume but how we consume." Collaborative consumption consists of three systems. The first one is the redistribution of unwanted or underused products to people who will use it more. The second is collaborative lifestyles that trade non-product assets such as space and skills. The third is the product service system where people pay to gain access to a product instead of owning it (Botsman, 2013).

Basically, with alternative consumption, such as collaborative consumption, products are exchanged between users which increases the utilization rate of the products. Today it is possible to obtain products with alternative consumption but most of the products are still designed to be purchased in new condition. There is an opportunity to change the design thinking to move away from the linear economy. The research project Use2Use at the division Design & Human factors at Chalmers University of Technology calls this thinking for Design for Exchange, which they define as supporting product circularity by designing for transfer of ownership or access of products from a user perspective. The research project aims to

develop a tool to support design and development work towards a more sustainable consumption. This thesis will address the issues of exchange in a design case study to contribute with knowledge to support the research project.

1.2 Aim and objectives

The aim of the study was to gain a better understanding of how to design products for exchange. The objective was to develop guidelines for exchange, apply the guidelines in a design case and evaluate if the guidelines support product development. Further, the study also should contribute to the research project Use2Use.

The project aimed to result in;

- the identification and development of design guidelines to support product exchange
- the selection and investigation of a product that is beneficial to exchange and a suitable exchange path for the product
- the development of specific design guidelines for the selected product and exchange path
- the development of a re-design of the product to facilitate exchange between users.

1.3 Research questions

To achieve the project aim and objectives the following research questions were explored:

- What aspects influence whether or not people exchange products with others?
- What product categories have better potential to be exchanged between users?
- What problems might occur when exchanging products and how can these problems be avoided?
- What aspects are important to consider when designing for exchange of products?
- Can a re-design of a product lead to that exchange of the product will be seen as a preferable option? If so, how?

1.4 Process and structure of the report

An overview of the process of the thesis can be seen in figure 1.1. The report follow the process and is divided into four parts, excluding introduction, discussion and final conclusion. In the figure, the methods used for each part are written above and the results are written below the line.

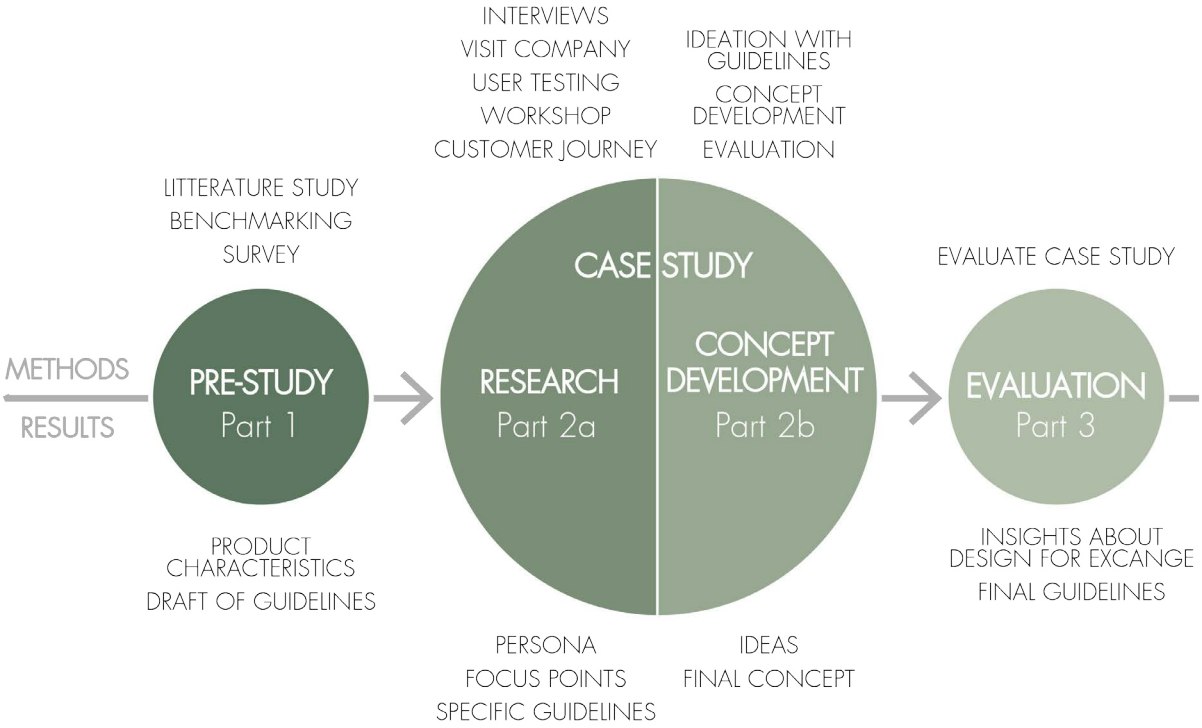

Figure 1.1
Process overview.

Part 1, chapter two to four, is the pre-study. This part contains data collection about all kinds of consumption and people's attitude towards obtaining, owning and riddance of products. Part one resulted in general guidelines about Design for Exchange and also insights about products with great exchange potential that contributed to the case study presented in Part 2a and 2b.

The case study is divided into two parts. The purpose of the case study was to apply and further develop the guidelines to supports product development suitable for exchange. In Part 2a, chapter five to seven, research are presented about a selected product that is preferable to be exchanged and possible ways to obtain the product. Part 2a resulted in two personas, focus points and specific guidelines for the selected product and specific way of consumption. Part 2b, chapter eight to nine, contains concept development with improvements of the selected product along with a service to obtain the product. The concept development was executed with an iterative design process, figure 1.2. Part 2b resulted in a final concept.

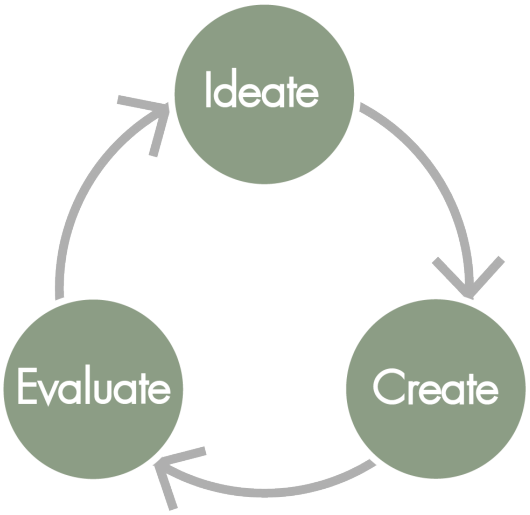

Figure 1.2
Iterative design process.

In the last part, Part 3, chapter ten, the guidelines and design case are discussed to get deeper insights about designing for exchange.

The process was defined along the way as the results from the pre-study decided what the case study should be about. Therefore each part has its own method chapter, to make it easier for the reader to follow. The whole process was carried out from a user centered perspective.

PART

1

Pre-study

This part of the report contains the pre-study. The aim of Part 1 was to get a deeper understanding about exchange and consumption of products in general and to get more specific insights about products preferable for exchange. Theory about the subject is presented first and after follows a conducted research about obtainment, owning and riddance of products. The part ends with a conclusion where the first draft of general design guidelines for exchange is presented

2. THEORY

This chapter presents theory about circular economy, Design for Exchange and different consumption paths.

2.1 Circular Economy

The Ellen MacArthur Foundation (2018) explains that circular economy is a way to move from the linear economy where we tend to take, make, and dispose products. Circular economy are based on three principles;

- Design out waste and pollution
- Keep products and materials in use
- Regenerate natural systems

The model of circular economy is divided into a technical and biological cycle, see figure 2.1, where the biological-based products are designed to give back to the system through composting or anaerobic digestion. The technical cycle recover and repair products, components and materials and use recycling as the last option in the cycle (The Ellen MacArthur Foundation, 2018). One essential strategy for the technical cycle is to stay in the inner loops as long as possible through reusing products or components. Staying in the inner loops will result in maintenance of the materials values and also financial savings (Jansson, 2015).

The circular economy focus mainly on business value together with resource efficiency but also involves some design thinking. A designers role, according to The Ellen MacArthur foundation (2018), is to design with a focus on ; material selection, standardised components, designed-to-last products, design for easy end-of-life sorting, separation or reuse of products and materials, and design-for-manufacturing criteria that take into account possible useful applications of by-products and wastes.

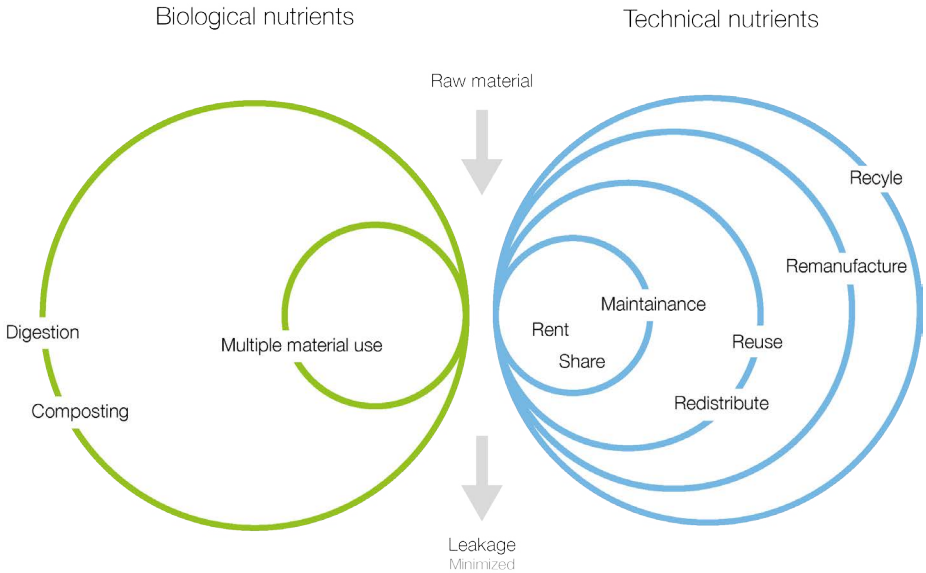

Figure 2.1
Circular economy
(Jansson, 2015)

2.2 Design for Exchange

Supporting product circularity through designing for transfers of ownership or access of products from a user perspective is defined as Design for Exchange (Selvefors et al. 2018).

Selvefors et al. (2018) claims that there are opportunities to reduce resources and new produced products through design for closer product user loops, which will result in higher utilization of products and a higher need fulfillment. Instead of putting an unused product in a storage somewhere it could be used by someone else and fulfill that person's needs. This issue of consumption from a user point of view is not further explored in neither circular economy nor sustainable design. The aim with sustainable design is to eliminate negative environmental impact and has a holistic perspective of the principles social, economy and ecological sustainability (Sustainable design, 2018). Instead, circular economy and sustainable design focus on minimizing the effect of the whole product life cycle has on earth from both a business and product design perspective.

Selvefors et al. (2018) have developed a model to support product circularity, called consumption cycle (figure 2.2), by addressing different consumption paths. The model highlights the different alternatives of consumption and divides all paths into two groups; ownership of products and access of products. They also divide the consumption cycle into three phases; obtainment, use and riddance. During the three phases different activities can occur depending on the chosen path. The activities can be undesired and affect the appealingness for the different paths. Undesired activities could for example be cleaning the product or planning when to pick up the product. The attractiveness of the different paths are also affected by the design of the product, service and the context. Therefore Selvefors et al. (2018) propose that understanding the undesired user activities is essential to make alternative consumption appealing. Few of these user activities are discussed in the literature of circular economy, only maintenance and repairment are mentioned for the usage phase of the product. This shows once again that the circular economy has strong business focus but lacks the user perspective.

Circular economy aims for long product life and closed product loops that in the end will result in less used resources and produced products. To extend the life of the product they can be designed for durability and longevity. To be able to close the product loop

there are opportunities for businesses to take back used product and reuse components and materials. From a Design for Exchange perspective the product life time can be extended by creating tighter loops between users. The figure 2.3 underneath illustrates how different users can use the same product during a product life cycle. To enable products to be exchanged between users in closed loops there are several things to be considered. For instance the product needs to be designed in a way so it is possible to clean and maintain it between user loops, transport between users, easy to understand how to use it and possible to adapt to different users.

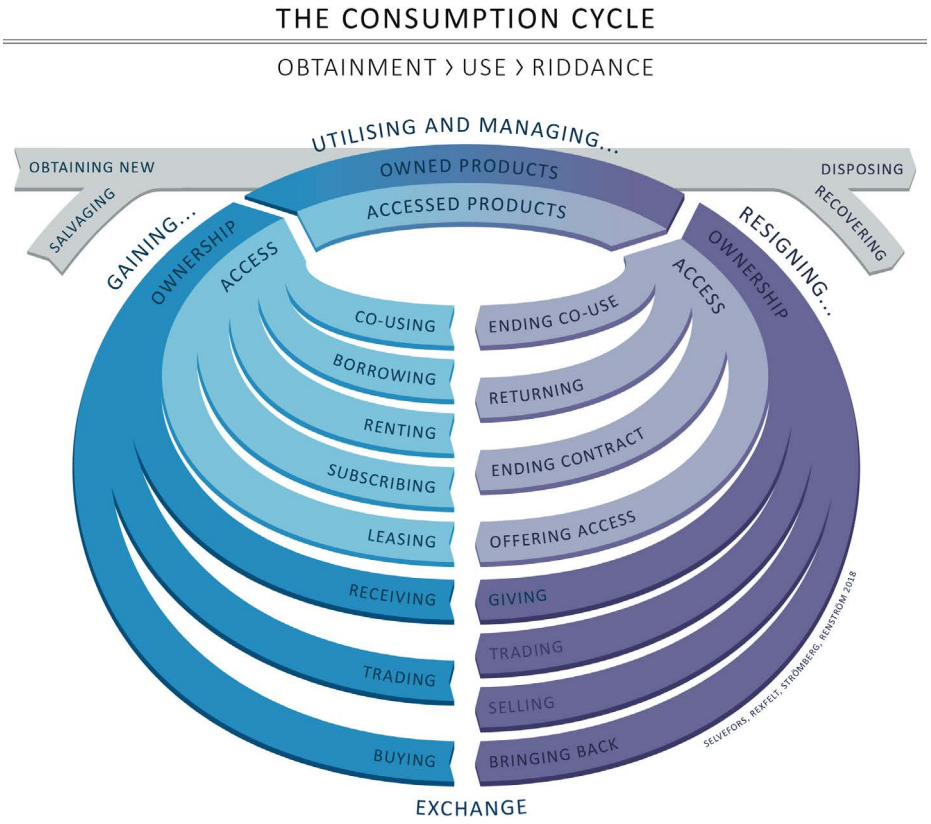

Figure 2.2
Consumption cycle.
(Selvefors et al. 2018)

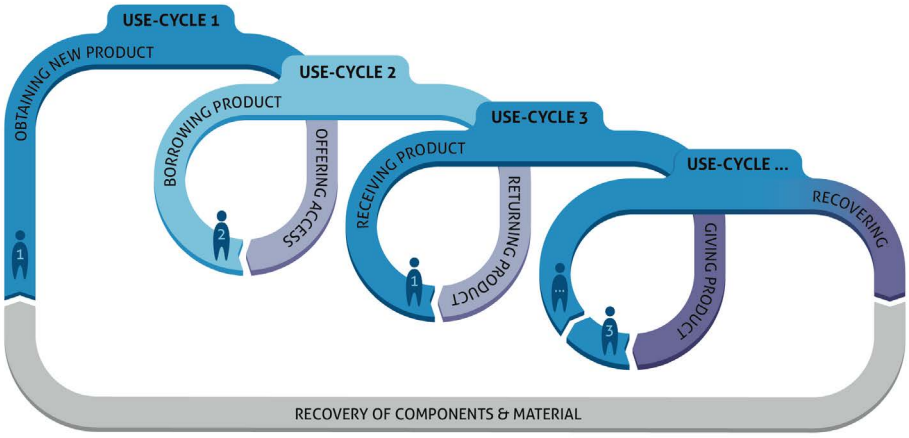

Figure 2.3
User loops
(Selvefors et al. 2018)

2.3 Design guidelines for circularity

The research project Use2Use has developed materials for workshops with companies to support design of products to maintain their function and attractiveness between users over time, see the complete workshop material in appendix I. They discuss three main areas during the workshop; Design to maintain technical function, Design to maintain attractiveness, Design to enable multiple customer to use the product. Each area includes more specific guidelines on how to support product circularity.

In literature, it is possible to find other example on strategies and guidelines to support design for circularity. The guidelines consists of quite similar elements but are presented with different main focus. For example Bocken et al. (2016) present design guidelines that are divided into strategies for slowing and for closing resource loops.

Design strategies to slow loops

Designing long-life products

- Design for attachment and trust
- Design for reliability and durability

Design for product-life extension

- Design for ease of maintenance and repair
- Design for upgradability and adaptability
- Design for standardization and compatibility
- Design for dis- and reassembly

Design strategies to close loops

- Design for a technological cycle
- Design for a biological cycle
- Design for dis- and reassembly

Another example in literature is Bakker et al. (2015) that present six design strategies for circularity of products with a main focus on long product lifespan.

- Design for attachment and trust
- Design for durability
- Design for standardization and compatibility
- Design for ease of maintenance and repair
- Design for adaptability and upgradability
- Design for dis- and reassembly

2.4 Consumption paths on the market

This part describes the different paths of consumption, that are presented in the Consumption cycle in figure 2.2, and examples of opportunities and services that are available today, primarily in Sweden. Smarta Kartan, a platform that facilitates for people in Gothenburg to live more sustainable by encouraging access to products instead of owning (Smarta Kartan, 2018), was used as a starting point to find the different services.

Buying or **selling** second-hand is possible through both physical stores and online. In most cases, it requires a financial transaction between the seller and buyer, but the owner could also give products for free as charity to support the business or other associations. Buying or selling second hand could occur between people or supported through a service. Sellpy is an example of a service where they take care of the activities that might be unwanted by the seller. They pick up the products, evaluate them and put them up for sale in an online shop. The seller can follow the auctions online and earn money if the auction was successful (Sellpy, 2018).

Trading is defined by an exchange of products or services between people. There are not that many businesses today that focus on trading but there are communities on social media where they focus on trading products and services. Dooify is an example of a business where the members can trade services and knowledge with others, for example trade a math lesson for a Spanish lesson (Dooify, 2018).

Receive and **give** products for free are more common between friends and family but can also occur in other situations. Today there are physical “free-shops” in Gothenburg where it is possible to give and take products for free. Online it is possible to give away products through Bjussa, a website where it is possible to advertise unwanted products for free (Bjussa, 2018).

Borrowing is also an activity that often occurs between friends and family but some products have been consumed through borrowing for a long time, for example books. Today it is possible to borrow more than books and the organization Fritidsbanken makes it possible to borrow sport and leisure equipment for free. The concept is that the organization receive used products from persons or business and can lend out the products for free for two weeks at a time. It is possible for everyone to borrow products and they have

a policy that they want to trust people that borrow their products. Therefore they don't have any strict regulations and at Fritidsbanken located in Frölunda in Gothenburg, they experience that people tend to take good care of the borrowed products (Fritidsbanken, 2016).

Renting always requires a financial transaction and the rent period is often defined before it is possible to get access to the product. Renting through a company is the most common alternative, like the many car-rental services. Renting between people could be possible between friends and family but there are a few companies that offering the services to connect people. Hygglo (2018) is a service where it is possible for people to rent out their own products and to find others' products to rent. Hygglo offers insurance if something happens to the product and they require electronic identification of all users. Today more people are using the service to rent others' products than to rent out their own and the most popular products to rent are cars, tools, electronic products and sport and leisure equipment (Hellström, 2018).

Subscribing and **leasing** both requires a contractual arrangement to gain access to a service or a product continuously. For example, it is possible to subscribe for clothes through Klädoteket located in Gothenburg (Klädoteket, 2018). Vehicles are common for leasing.

Co-using is when a product is used together by several users at the same time. An example of co-using service is GoMore that provides a meeting place for people to share car rides
(GoMore, 2018).

3. RESEARCH ABOUT CONSUMPTION OF PRODUCTS

This chapter includes the result from the data collection about general consumption of products. Methods and implementation are presented and later the result is divided into the three subsections obtain, owning and riddance of products.

3.1 Methods & implementations

3.1.1 Data collection

To get knowledge about people's preferences of alternative consumption and get an idea of which products that have great potential to be obtained in another way than only buying new, an online survey was made, find the survey questions in appendix II. The survey was distributed on Facebook to reach a broad audience and contained questions about how to obtain products, attitude towards ownership and how to get rid of products. There were in total 142 people who answered the questions, with 67% women and 33% men and more than half were younger than 36 years (62%), see figure 3.1.

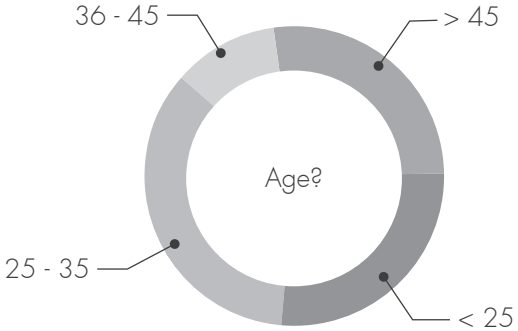

Figure 3.1
Ages of the survey respondents

The quantitative answers from the questions with predefined response options in the survey were visualized in diagrams while the qualitative answers in form of comments were analyzed with the KJ-method, (Johannesson, 2004). All comments were printed and cut out individually. Each question was analyzed separately and similar comments were clustered together. The common denominator of the cluster was then written on a post-it to give greater overview and commonalities were found between the clusters. Structuring the gathered information in this way made it easier to obtain a complete picture over the answers and a discussion was held during the process to get a deeper understanding.

3.1.2 Guidelines and product characteristics

The insights from the data collection were summarized into characteristics for a product to be suitable for alternative consumption. A first draft of guidelines of how to think when designing products suitable to be exchanged between users was made. The guidelines were developed from the results of the data collection together with inspiration from Use2Use.

3.2 Insights about consumption of products

3.2.1 Obtain products

In the survey, the respondents had to rate the three most common ways of getting access to products (figure 3.2). The most common way was buying new, thereafter buying second-hand and receiving from others. Least common were trading, renting and sharing ownership. This shows that it is more usual to gain ownership than gain access to products. This could be compared with results from the SB Insight's circular economy report of 2018, presented by Degerfors (2018), that shows the swedes' attitude towards circular economy. In general swedes know very little about circular economy and 49 % of the respondents have a negative attitude towards shared ownership. Although the report shows that the swedes have a positive attitude towards to decrease their consumption, repair, recycle and rent products from other individuals.

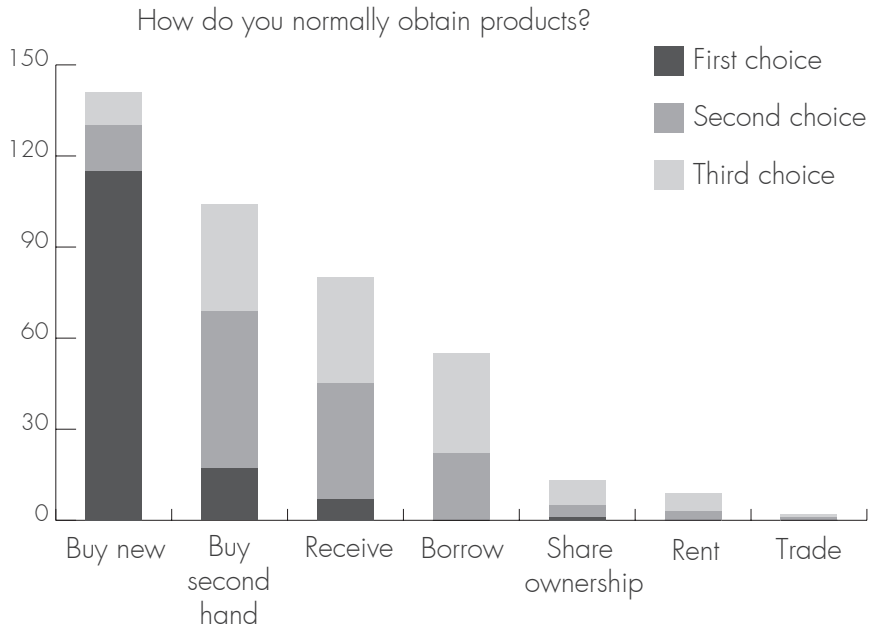

Figure 3.2
Ways to obtain products.

Almost all of the respondents (97%) wanted to change their way of consuming and most of them wanted to buy more second-hand than they do today (figure 3.3). They got to comment why they haven't changed their way of consuming and several explanations recurred and could be seen as more or less common for all alternatives.

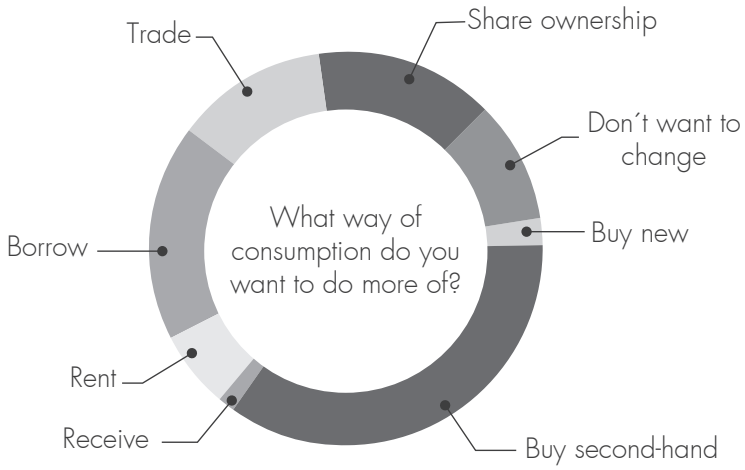

Figure 3.3
New ways of consumption.

The explained reasons were; lack of motivation to change, inaccessible way to obtain products, time-consuming, social obstacles, unsure of the system and unsure of the product quality. The reasons not to change the way of consuming highlights worries and unwanted activities that might occur when obtaining products.

In general, people tend to choose the most convenient and familiar option when it is possible. The people who answered that they wanted buy more second-hand mentioned that it can be hard to find the wanted product and that it takes more time to find the perfect product. It can also be problematic to be sure of the quality and cleanliness of the product as warranty seldom is included when buying second-hand. Some of the respondents clearly explained that they are too lazy to check if a product is available second hand and thereby choose to purchase new products due to convenience. Another inconvenience mentioned was the personal meeting with strangers. The similar argumentation goes for the other consumption alternatives. The biggest differences are that people are even more unsure of how the other systems/services work and that some of the alternatives, like borrowing and trading, require more social interaction which can feel uncomfortable for some.

3.2.2 Owning products

About 65% of the respondents thought it was problematic to own products. Vehicles, tools and sports equipment was the most problematic products to own as can be seen in figure 3.4. The reasons why (figure 3.5) it could be problematic to own products were mainly if the product seldom was used and difficult to store, which referred to all kinds of product. The main reasons why it was problematic to own a car were that it requires maintenance and is

Figure 3.4
Problematic products to own.

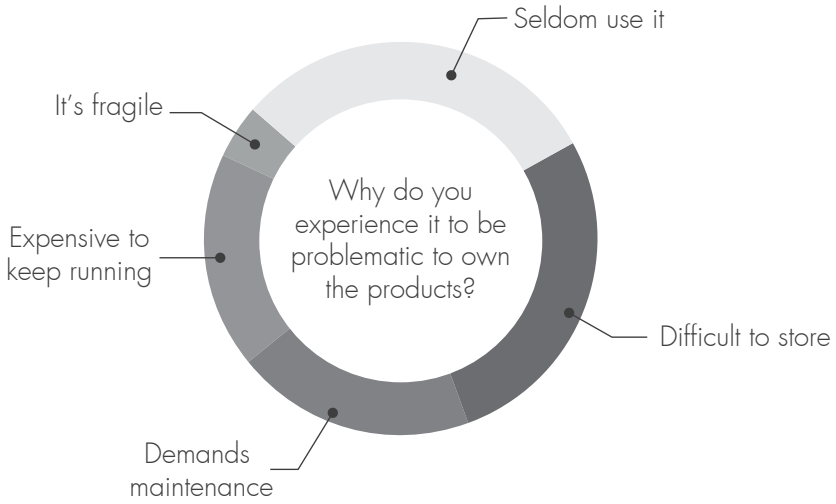

Figure 3.5
Reasons why it can be problematic to own.

expensive to keep running. These problematic products mentioned above would people rather have access to than owning and was also seen as the most popular products to rent from Hygglo (Hellström, 2018).

The majority (58%) of the respondents thought they owned too many products. Slightly over half (54%) of the respondents are willing to provide access of their products to others, only a few (7%) are not and the rest might be. According to the reasoning behind the

answers, several dependent factors can be found of why one might be willing to share/rent/borrow or not. It depends on what product it is, who the other person is, how the system is working and what to profit from it.

Reasons why people want to share/rent/borrow product is that they see an opportunity to save or earn money, that the products can be used more often and be accessible for more people, which will save resources of the planet. Although the product to share/rent/borrow should not be too personal, too fragile, used too often or used spontaneously. The participants thought it was easier to share with someone they know because you need to trust the person that uses your product. It is preferable if you trust that the person will return the product in time, have the right knowledge to use it and handle it in a desireful way. People also want to use a system to facilitate this way of consuming that is secure, simple and accessible.

The issue of trusting strangers using your products is an important component in collaborative consumption. The trust researcher Rachel Botsman explains that a person needs to go through three steps of trust; at first trust the idea, then trust the company and at last trust the other person. It is at the last step where real trust happens, but it is necessary to go through the two other steps before getting there (Botsman, 2017). This shows that there are many obstacles to overcome before accepting that other people could access your products.

3.2.3 Riddance of products

The respondents had to rate the three most common ways to get rid of products and the answers showed that donate/give away and recycle were the most popular (figure 3.6). Although many choose to store their products at home or throw them away. To resell the products, both private and through a service was the least common way to get rid of products. The highest prioritizations when getting rid of products are that someone else should be able to use the product, it should be quick and easy and it should be environmentally friendly (figure 3.7).

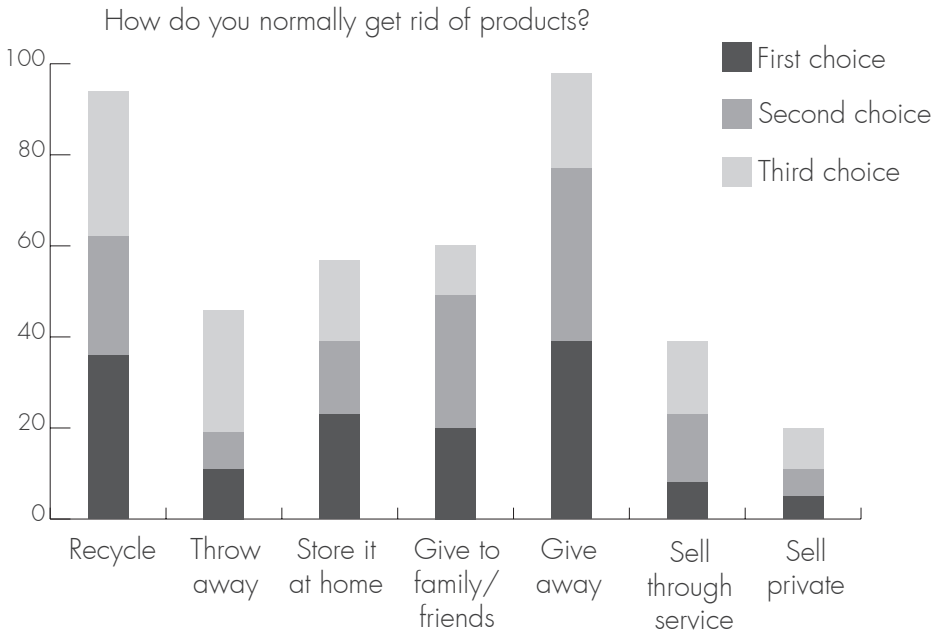

Figure 3.6
Ways to get rid of products.

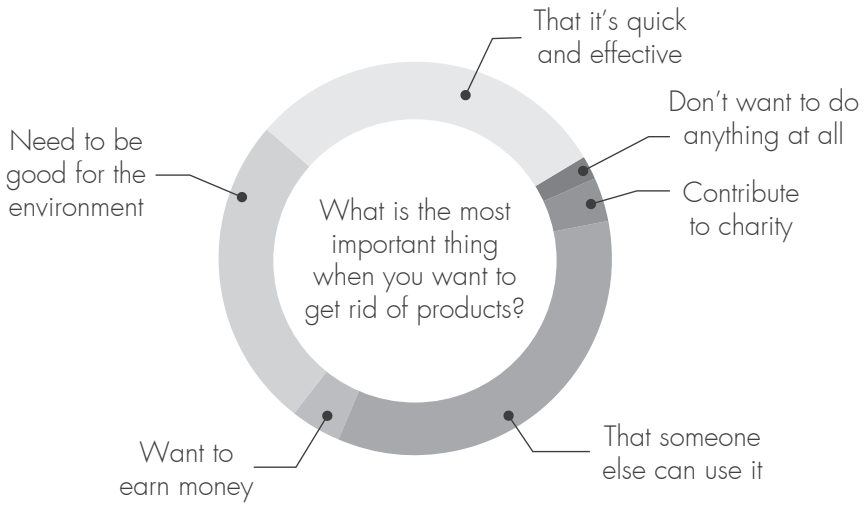

Figure 3.7
Important during riddance.

4. CONCLUSION OF PART 1

This chapter presents the conclusion of the theory and insights about consumption that resulted in a first version of design guidelines for exchange.

4.1 Summary of Part 1

Worries and unwanted activities can be found through the whole consumption cycle for the alternative ways of consuming. It is more common to purchase and own new products than the other consumption alternatives. The main reasons are that alternatives ways of consuming are experienced as more or less inconvenient and that it is hard to know how to obtain products in other ways than buying, even if several different services exist out on the market. Both the results from the survey and from Hygglo showed that vehicles, tools and sport/leisure equipment were requested product categories to be exchanged instead of buying new. A lot of people think they own too many products but feel a bit insecure to share their products with others. Although, when getting rid of products people prioritize that the product will be used by someone else, as long as it is an easy process.

4.2 Product characteristics for exchange

For a product to be preferable to obtain in any other way than buying new there are certain characteristics, which follows;

The products should be experienced to:

- be expensive to buy new
- have high quality
- have a long life
- seldom be used by one user
- not be used spontaneously, planned used is preferred
- not be a highly personal product

All characteristics do not need to be fulfilled in order for a product to be exchanged. Although it is more likely to choose another consumption path than buy new if all the characteristics are fulfilled. To which extent they need to be fulfilled also depends on the user's preferences and the context. The characteristics are not necessarily objective but rather subjective which is why personal preferences play a big role if exchange of products would be chosen over buying new.

There is potential to improve the products to be suitable to be exchanged but it is also important that the system/service is experienced as smooth to consider an alternative consumption over buying new.

4.3 Design Guidelines for exchange

When designing for exchange both the product and the system/service need to be suitable for the purpose. Below are a first draft of general design guidelines to consider when designing for exchange. The list consist of five main guidelines that each has several sub guidelines. They should be used in the ideation phase of a project and help the designer to design for exchange. It is possible to generate ideas from each one of the sub guidelines or only use the main guidelines as inspiration.

Provide an intact product during exchange
- Using exchangeable and standard components
- Make it easy to control the products condition
- Design the shape, selection of materials and assembly to avoid damage
- Design to avoid usage mistakes
- Communicate how the product should be used correctly
- Design with durable materials

Provide a clean product during exchange
- Enable and facilitate cleaning of the product
- Make it easy to control if the product is clean
- Communicate how the product should be cleaned correctly

Provide a long lasting product
- Classic design
- Use aesthetically aging materials
- Enable upgrades of product functions

Provide a reliable exchange system
- Clarify terms and conditions
- Clarify responsibility
- Create perceived belonging of the product (attachment)
- Create trust in the system

Provide a preferable exchange system
- Minimize the effort and time needed to obtain or get rid of a product
- Communicate the advantages of the system

PART

2a

Case study Research

This part of the report contains the first part of the case study, the research. The aim of Part 2a was to get a deeper understanding of the selected product for the case study, a tent from Fjällräven, in terms of usage and consumption. The part starts with a background to the case study with the selection of the product and theory about it. Thereafter is research about usage and consumption of the product presented. Part 2a ends with a conclusion to summarize the results and present the scope of the case together with focus areas and specific guidelines for the selected product and exchange path.

5. BACKGROUND TO THE CASE STUDY

This chapter present the selection of a product for the case study and also important information related to the chosen product and brand.

5.1 Selection of product

A tent was selected to focus on in the case study. The tent fulfills the product characteristics mentioned in chapter 4.2 and was therefore seen as a product that could be preferable to obtain in another way than buying new. A tent can be quite expensive to buy new and it spends more time in storage than it is used. By designing the tent to be exchanged an expensive product of high quality can be made accessible to more people.

5.2 Fjällräven

After the decision to explore the opportunity to re-design a tent, Fjällräven was contacted and asked if the design case could focus on one of their tents and the response was positive. A collaboration started where Fjällräven supported the thesis project with a tent as well as expertise within the area. Fjällräven is a Swedish company making outdoor equipment, including tents.

The story about Fjällräven

In 1950 Åke Nordin invented a backpack with a frame that positioned the weight higher up on the body and therefore was easier to carry. This design was the start of the company Fjällräven that he launched ten years after his backpack frame was born. Today Fjällräven produce innovative and functional products for outdoor enthusiasts and are selling their products in fifty countries (Fjällräven, 2018a).

Responsibility for the nature

To leave no trace in nature is a motto for the outdoor enthusiast and this motto influence Fjällräven's goal about having as small environmental footprint on earth as possible. They produce products that are timeless, durable and functional and they communicate that products that last longer are better for the environment. They also focus on the way the products are manufactured and strive to improve the process through better selection of materials and decreasing the amount of water, chemicals and energy. Fjällräven strives to work more efficiently and sustainably throughout the entire chain of production (Fjällräven, 2018b)

Fjällräven also wants to encourage as many people as possible to get out and experience outdoor life. Their ambition is that future generations should be able to enjoy the nature the same way as it is today and therefore works to act responsibly towards people,

animals and nature. Fjällräven wants their customer to enjoy the nature without having to worry about their equipment. Therefore Fjällräven communicates six principles with their product promise that the customer can expect from the product:

- Functionality
- Durability
- Timelessness
- Reliability
- User-friendliness
- Versatility

5.3 Tent theory

A traditional tent consists of fabric attached to a frame of poles and is normally anchored to the ground with tent pegs and guylines. Tents suitable for trekking are relatively small and lightweight. Typical designs for this type of tent are shown in the figure 5.1.

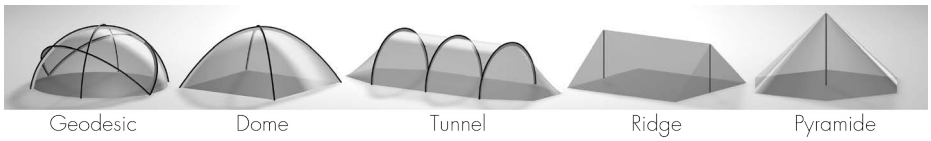

Figure 5.1
Different tent models

Fjällräven produces two of these designs; tunnel and dome, which are common for modern tent designs. The tunnel and dome both have their own advantages and disadvantages (Fjällräven, 2018c).

In a tunnel tent the poles are placed parallel to each other, creating a tunnel-like silhouette. With a tunnel tent it is possible to get a lot of space but still keep the weight down and it is easy to pitch. Although it requires more attachment points to stand upright and the short side needs to face the wind as strong side winds can push down the tent. Tunnel tent in most cases also offers a bigger vestibule, the extra area outside the sleeping compartment protected by the flysheet, that is suitable for storage or to dry the equipment (Fjällräven, 2018c).

Dome tents are self-supporting which means they only need the poles to stand upright and are therefore appropriate to use in terrain where it is difficult to attach the pegs into the ground. Due to the crossed poles, the dome tent has a sturdy construction and

are not as sensitive for strong winds and wind directions as a tunnel tent. The shape of the tent gives a spacious feeling inside but the vestibules are rather small. A dome tent is often heavier than a tunnel tent because of the many poles. (Addnature, 2018).

In addition to the shape of the tent, they come in different sizes according to how many people can sleep in it and they are suited for different seasons. Lightweight trekking tents normally come in sizes between one and four persons, bigger tents than that are often too heavy to carry, and are suited for three or four seasons (Addnature, 2018).

A 3-season tent is the most common and the three seasons refer to spring, summer and autumn while a 4-season tent is suitable all year round. The 4-season tent has a sturdier construction, is made of stronger materials and has more anchor points than a 3-season tent. This is to withstand snow and heavy winds but makes the tent heavier (Addnature, 2018).

Due to the big amount of variations of tents, there are many things to consider to choose the right tent to match intended use. When and where will the tent be used? What kind of environment, terrain, weather and temperature will it be? How many people will sleep in the tent? The answer to these questions is a balance between weight to carry and comfort. A smaller tent is easier to carry but a bigger tent is more comfortable to sleep in.

Figure 5.2
Fjällräven Keb Dome 2
(Tältboken, 2016)

5.3.1 Fjällräven Keb Dome 2

For this case study the tent Keb Dome 2 from Fjällräven (figure 5.2) was chosen mainly because of its sturdy construction. This tent could therefore be suitable to last longer even if the utilization rate increases. Fjällräven has three series of tents; Abisko, Keb and Polar. The quality of Keb is in between the two others where Abisko is lighter and simpler and Polar is sturdier for extreme winter conditions (Tältboken, 2016).

Keb Dome 2 is a self-supporting, two-person tent suitable for four seasons. The tent is strong and stable, optimized for exposed weather conditions and rough terrain. The self-supporting 3-poles construction makes it possible to move the tent after it is pitched. Figure 5.3 underneath shows the most important information about Keb Dome 2 (Tältboken, 2016).

The outer tent is made of polyamide covered with silicon to make it more resistant to water. The darker details on the outer tent consist of a thicker polyamide fabric because this area is exposed to higher tension. The inner tent is also made of polyamide and the entrances are covered with mesh to facilitate a better ventilation in warmer climates. The tent poles are made in a strong and lightweight aluminum to sustain different weather conditions. If it is very snowy or windy it possible to use an extra set of tent poles in the sleeves to support the construction (Tältboken, 2016).

Figure 5.3
Details of Keb Dome 2

How to pitch the tent

The information underneath describes in order what needs to be done to pitch the tent correctly, according to the instructions on a piece of paper that follows in the tent bag. The instructions of how to pitch the tent is also printed on the tent bag (figure 5.4).

1. Put in two or three tent pegs along the short side facing into the wind, so the tent doesn't blow away.
2. Insert the tent poles all the way through their sleeves but don't raise the tent until they are all in place.
3. Raise the tent by placing the end of the poles in their holders. Adjust the tension of the tent fabric using the strap adjustment at the pole holders.
4. Stretch the tent out and fasten all the tent ground loops with the tent pegs.
5. Fasten the toggles in the ring around the top of the tent. Adjust tension if needed.
6. Lengthen the guylines and fasten them to the ground, then adjust their tension as needed.

Figure 5.4
Instructions that follows with the tent.

How to take down the tent

When taking down the tent it is important that it is made in the right way to avoid damages. Underneath follows information of how to take down the tent and in what orders it needs to be done (Tältboken, 2016);

1. Loosen the tent pegs and shorten the guylines to reduce the risk of them getting tangled.
2. To remove the poles push them out from the pole sleeves. Don't pull out the poles because it can damage the tent.
3. Make sure that all the tent pegs are in its bag.
4. Press the tent carefully into the bag and don´t forget to add the manual and the pegs.
5. Attach the bag with the poles on the outside of the tent bag.

Cleaning the tent

When it is time to take down the tent it is important that the inside of the tent is clean. A tent free from dirt and sand lowers the risk of damages on the fabric when the tent is pushed into the bag. The tent is easily cleaned by either brushing away the dirt or hold it up and shake it (Tältboken, 2016).

After the trip the tent can be cleaned with a wet cloth if needed and zippers can be cleaned advantageously with a toothbrush. The most important thing after the trip is that the tent is totally dry before it is stored in the bag. The best way to let it dry is to let it hang with the poles inserted so it is easier for the air to circulate between the inner and outer tent. If the tent is not dry when stored in the bag it will start to mold and will not be pleasant to use anymore (Tältboken, 2016).

Damages during trek and repairment

When using the tent different circumstances can happen that will damage it but most of it can be solved out in the nature. When buying a Keb Dome 2 a repair kit comes along inside the tent bag. The repair kit consists of almost all things that's needed to repair the tent (Tältboken, 2016), the figure 5.5 describe what it consists of.

Holes in the fabric can be fixed with silicone glue and extra piece of fabric that follows in the repair kit. A broken pole can be fixed by either replace the segment with the spare part that follows in the pole bag or the small tube that can be thread on the broken part of the pole. If a zipper breaks it is possible to sew the edges together by stitching over the zipper runner. If a guyline break the best way to repair it is to tie a knot. If the guyline already has several knots it is a better idea to replace it with the extra guyline from the repair kit. Tent pegs can easily disappear in the nature or get bended. If it is not possible to bend back the peg or it has gone missing, it is possible to replace the peg by using something else in the nature instead, like a stick or a rock (Tältboken, 2016).

Figure 5.5
The repair kit that follows with the tent.

6. RESEARCH ABOUT USAGE AND CONSUMPTION OF TENTS

This chapter focuses on presenting the results from the data collection about the specific product and attitudes towards different consumption paths in relation to this product.

6.1 Methods and implementations

6.1.1 Data collection

To get a deeper knowledge of how people use tents and how they get access to the tent interviews where made, find the interview template in appendix III. Semi-structured interviews with open questions were held face to face with nine people that had different tent experience. Some were very experienced, owned their own tent and used to sleep in the tent several nights every year. Others had not slept in a tent more than one night, they had no or very little experience. The interviews were recorded and notes were taken. Three areas were discussed during the interviews; general tent knowledge, how to get access to a tent and general approach to ownership. After they were completed the recordings were listened through and compared with the notes to make sure that the notes where accurate.

Naturkompaniet at Östra Hamngatan in Gothenburg was visited in order to get knowledge on what questions customers are asking when buying a new tent. The interview was held with one of the employees at the store and it was held in a semi-structured way and notes were taken.

In order to get knowledge on alternative ways of tent consumption, different providers of outdoor equipment were contacted. In Gothenburg, the second-hand shop Tracks Recycle was visited and a semi-structured interview was held with the owner of the store. To get more knowledge about renting a tent Tältcentralen located in Stockholm was contacted through email. Questions were asked about the service and if people that rent takes good care of the products. Through the website Hygglo four people that rent their own tent to others where contacted. The four providers were selected to be contacted because they rented out high-quality tents. Questions were asked about why they rent their own products and their experience of renting to others. To get a broad view of people's attitudes towards alternative consumption of tent a question was posted in a hiking community on facebook. The post concerned the subject whether it is possible in Sweden to get access to a tent without owning it.

All the data from the collection was analyzed together with the KJ-method (Johannesson, 2004). Interesting comment and findings where written down on post-its and organized into bigger clusters. The clusters were looked through one more time and similar findings were clustered together into smaller groups. They were later summarized into a document to get a better overview and the result was discussed. At the end of the analysis, one exchange path was selected to further work with. The selection was based on the result of the data collection.

6.1.2 Pitching tents

In order to get deeper knowledge of the specific tent from Fjällräven, a workshop was held with a person responsible for tent production at Fjällräven, that could be seen as an expert user. At the workshop, different types of tents were pitched and subjects like design, use and damages were discussed.

To be able to evaluate the guessability of the selected tent two unstructured user tests were held. The user tests were performed by two test participants at a time, four participants in total, and were performed indoors. The participants had no or very little previous tent experience and were asked to pitch the tent with only the instructions on the tent bag to evaluate the guessability of the tent. The participants were asked to think out loud and discuss with each other to describe why they acted the way they did. The fact that the test was held indoors all functions of the tent could not be tested in the intended way, these functions were instead discussed. The decision to be indoors was made to avoid the external factors, caused by cold and snowy weather, that could affect the test result. Supplementary questions were asked during the test and notes where taken.

6.1.3 Exchange path

To be able to get a full picture of all the different activities connected to the specific exchange path a customer journey (Nilsson, 2015) was made. Valuable information about the paths was collected at workshops together with the research project Use2Use. During the workshops, all different activities that occurred for all types of exchange paths were mapped out, both for obtainment and riddance of products. The identified activities for the selected exchange path were visualized as a journey with all the steps that the customer goes through to obtain, use and then get rid of the product. Activities with a potential for improvement was highlighted.

Another journey was made from the perspective of the provider. Only the activities with a potential for improvements were visualized in the journey of the providers, as the focus would be from the customer perspective but the most critical activities for the provider should not be forgotten.

6.1.4 Persona

With insights from the analysis of the data collection and also the survey from the prestudy two personas (Nilsson, 2015) were developed that should represent the intended users in the design case. To get further understandings on different attitudes towards sustainability the personas from the project Green leep at KTH (2017) was used as an inspiration. The two personas that were developed had different views on sustainable behavior and different thoughts about tenting to highlight problematic areas found in the research. The personas were developed to be used later in the design process during ideation and evaluation of concepts.

6.1.5 Guidelines and criteria

The guidelines from the pre-study were further developed into specific guidelines for the chosen product and exchange path. The results from the data collection and problems found when pitching the tent contributed to the development of the guidelines. The guidelines were based on four focus areas for the case study and formulated as requests for the designer to consider when designing both the service and the product.

A list of overall criteria that a solution should strive to fulfill was made. The criteria were developed to be used as a less strict list of requirements and the different solutions should be evaluated against the criteria. The different criteria were divided into the categories; customer, provider, environment and product.

6.2 Insights about usage and consumption of tent

6.2.1 Attitude towards tenting

Even though the interviewees had different amounts of tent experience they all wanted to sleep in tent more than they did today. The reasons why they did not use a tent as often as they wanted were lack of time, other competing interests, lack of knowledge where to tent in the local area and no access to equipment. The positive sides of sleeping in a tent that the interviewees mentioned were closeness to nature, freedom, flexibility, coziness and simplicity. The negative side was mainly that the experience could be affected by the weather conditions. It is not as fun to sleep in a tent when it is rainy and cold or too warm. Some also mentioned that the limited comfort in a tent can be another negative aspect.

To have enough experience and knowledge is crucial in order to get the best experience possible when sleeping in a tent. It is important that the tent is handled in the intended way to avoid damages and it is good to know how to pitch the tent before the hike so it is possible to know how to act even if it is windy, rainy and dark outside. The less experienced interviewees that did not own their own tent thought it was a hassle to pitch the tent while the more experienced that owned their tent did not. The more experienced had good knowledge and therefore thought it was easy to pitch the tent, check the condition of the tent and control that no parts are missing. The less experienced don't have this knowledge and might therefore be afraid to do anything wrong and harm the tent which could affect the overall experience in a negative way. Some less experienced also thought that a lot of equipment are needed in order to hike in the nature, which could cause an obstacle to getting started. Another difficulty is to find a good place to pitch the tent as the environment and type of ground plays a major role.

It is common that comfort and weight are two opposing factors that need to be balanced against each other when it comes to tents. A salesperson at Naturkompaniet mentioned that people tend to focus more on volume and weight of the tent rather than the usage when buying a new one. It can be exhausting to carry a big and heavy tent for a long time but it can also be uncomfortable to sleep in a too small tent. Due to the fact that the weight is such a big deal, it is crucial that a redesign of a tent don't add any extra load.

The type of maintenance that was made, such as checking the condition of the tent, cleaning and repairing depends on the tent experience but also personal preferences of the user and the owner of the tent and in what type of environment the tent will be used in. Therefore the level of cleanliness could be experienced differently between different users. The less experienced persons that borrow their tent often trust that the person they borrow it from knows the condition of the tent and therefore doesn't check it themselves. For the more experienced ones that own their tent, it is common to check the condition of the tent at home before going out on a hike. It was mentioned to be especially important to check the condition if you will go out on longer hikes in a more extreme environment as it is easier to fix any problem at home than in the nature. Things to check are that there are no holes in the fabric, no pegs are missing and that the poles, guylines and the zipper are complete. Although if it would be possible, the interviewees wished to not check the condition beforehand as it was seen as an unwanted activity. During the trip, the tent was not usually checked so it can be hard to know if any peg is lost or not. Instead, the focus lied on getting everything to fit in the backpack. The interviewees thought it was easier to check the condition while cleaning and drying the tent at home after the trip.

When it comes to cleaning the most common among the interviewees was to sweep the inner tent from dirt and let it dry completely before storing it in the bag. It is easier to both check the condition and let it dry when it is pitched at home. People tend to not care as much of dirt on the outside of the tent as the dirt comes from nature while the dirt inside is more unhygienic. The worst kind of dirt would be if someone brought the tent to a festival. Some of the interviewees mentioned that they did not care at all if the tent was dirty or not, although they owned their tents and might think differently if they used another person's tent.

A small repair kit is often included with the tent when buying it. One of the interviewees mentioned that it is a high risk that the parts of the repair kit disappear during usage if they are loose in the bag. Some of the more experienced hikers used to bring extra repair kit such as duct tape, needle and thread and a candle-end to lubricate the zippers. The salesperson at Naturkompaniet mentioned that many people don't know how to repair a tent which everyone should know in order to be prepared if something happens when they are out in the nature.

6.2.2 Problems found when pitching the tent

The identified problems when pitching the Keb Dome 2 were found during the user test and the pitch workshop at Fjällräven. The results are presented in the same order as the tent should be pitched.

Misleading instructions

When opening the tent bag one of the first things that catch the user's attention was the instruction on the bag, figure 6.1. All of the test participants started to read the instructions, probably because they thought that it was needed before pitching the tent. The instructions on the bag are the same for all tents from Fjällräven regardlessly of tent type. One of the participants read that the poles were color-coded and was confused to find all poles in the same color. The dome tent doesn't have that visual color coding and the instruction on the bag aim to give instructions for the tunnel tent where the tent poles have different colors because they have different lengths. The instruction did, in this case, mislead the user because it was not directly adapted to the tent that was pitched. In the bag, there is a paper with more instructions for the specific tent type. The piece of paper could easily be lost by blowing away with the wind and it does not have any specific place in the bag.

Figure 6.1 (Left)
Instructions on the bag.

Figure 6.2 (Right)
Pile of ropes when taking the tent out of the bag.

A confusing pile of ropes

When taking the tent out of the bag no one had problems understanding how it should be placed on the ground. All of the test participants reacted to the big amount of ropes and could not immediately understand what the different ropes should be used for. The tent is designed with the same type of rope for the guylines, ground loops, the rope underneath the tent holding it together and the handle on the zippers. It was hard for the participants to keep the different ropes apart, especially to differentiate the guylines, that should be outside of the tent, and the ropes underneath the tent.

Unintuitive construction and pitching sequence

After laying the tent on the ground most of the participants started to connect the tent poles. One of them reacted on that it was strange that it was three poles and didn't understand how the tent was constructed when looking at the picture on the bag. It was also hard to know if all the poles had the same length and the poles needed to be connected to disover that they were the same. Before understanding that the poles had the same size one participant thought that they needed to be inserted in the sleeves in a specific order.

When inserting the poles in the sleeves the test participants were not sure if all poles needed to be inserted before raising the tent. Two participants tried to insert and fasten one pole before inserting the others but realized almost directly that it was incorrect. Another participant wanted to bend and fasten all poles at the same time by lifting up the top of the tent, the person thought the poles would break otherwise. After some discussion and testing, all participants figured out how to pitch it in the correct way.

Hidden gaps of the pole sleeve

The participant easily understood the color-coded parts of the pole sleeves on the top of the tent (figure 6.3), that indicate where the tent poles should continue over to the opposite side of the tent. Although it was hard to see that there was a gap of the sleeve as it was hidden underneath the roof. The participants didn't reflect that the roof was removable and that removing the roof would have made the inserting of the poles easier. One test participant questioned the selection of the colors of the color code. All the pole sleeves were marked with gray in the bottom but one sleeve was also marked with gray in the gap on the top, while the other was marked with yellow and red. The participant thought it would be better if all the colors on the top would be different from the ones at the bottom.

Figure 6.3
Color-coded part on the top of the tent.

Difficult to insert the poles in the holder

All of the participants had problems inserting the pole in the holders, also called fox-feets, because it is required a lot of strength to be able to do it (figure 6.4). The fabric expands in a humid climate and it is therefore more difficult to pitch it in a dry climate, although how the holders are designed also affects how easy it is to insert the poles. The strap adjustments to the pole holders were difficult to detect and it is essential that they are loosened up to be able to insert the pole in the holder. They may be hard to detect because it is located behind the pole and doesn't stand out from the background.

Figure 6.4
The difficult step of inserting the pole in its holder.

Insecurity over the tent pegs

When the tent fabric is tensed by the poles it was obvious that the tent needed to be attached to the ground by pegs. There is no information on the bag or the instruction paper how many pegs that's needed to attach the tent. The test participants were also insecure about how the pegs should be stuck to the ground and they had different theories of how to do it. One of the test participants did not know that the rope should be around the head of the peg and wanted to place it in the middle instead. According to Fjällräven (Tältboken, 2016), the pegs should be placed with 45 degrees angle towards the ground with the top of the peg pointing away from the tent. Although, this information was not communicated clearly enough. How the pegs are fixed to the ground may not affect the experience of sleeping in the tent when the weather is nice but the uncertainty the users feel can affect the experience. Although it is of great importance that the tent is correctly attached to the ground and the flysheet is properly stretched during bad weather conditions. None of the test participants were completely sure they pitched the tent in the correct way in the end of the test.

Need previous knowledge to find extra features

After the tent was pitched some had problems finding the entrance to the tent and it was not obvious to them that it had two openings. The entrances don't stand out from the rest of the tent as the zippers are fully hidden to avoid damages or leakage. The only thing that indicates where the entrances are located are the lines with reflex fabric. The test participants did not either find all the special adjustment that's possible for the doors and the ventilation parts (figure6.5). Even if this is special adjustments it is still very important for the tent to work in the intended way. To be able to get this knowledge the user need to seek further information on the website of Fjällräven or get information from someone very well informed about that specific tent. To be able to use the tent optimally the user needs to have good knowledge about using a tent before going out on a trip. Knowledge of what extra equipment that's useful during the trip is something that could make the trip more pleasant. It is a good idea to bring duct tape and a multitool to fix eventual damages and a cloth to clean the tent and wipe off condensation.

Lacks information on how to take down the tent

When taking down the tent the participants pulled out the tent poles instead of pushing them. This information is not communicated clearly through the instructions on the bag or at the paper. How the tent should be put in the bag was a discussion during the user tests. Some of the participants wanted to fold it and some push it into the bag. There are no information or instructions available how the tent should be put in the bag.

Figure 6.5
Special adjustment to make the door stay half opened.

6.2.3 Attitudes towards consumption of tents

Independent of how you live, if it is in a small apartment or a big house, the storage rooms tend to be full. Many people save things they don't use with the hope of using them later in life. If you have big storage spaces there is a high risk that more things end up there as you are not as inclined to get rid of the stuff.

The interviewees' attitude towards owning were similar to the answers from the survey, presented in chapter 3.2.2. They thought that it was more comfortable and accessible to own, especially products that are used often or considered as personal. It is normal to identify with the type of products that you own and it can therefore be important for people identifying with an outdoor lifestyle to own that type of products. The mentioned perks of owning were that the product can be used spontaneous, it is easy to ensure the condition of the product and it is possible to decide how carefully the product should be used. Owning could also be seen as an investment and was experienced to be more economical than renting for those who thought they would use the product often. However, the interviewees did not think any better option than owning was available at the moment as they did not know enough about other ways of consumption.

Even if the interviewees did not have enough knowledge of how to rent, borrow and share they could see several advantages for the different paths but also some obstacles. Common hindrance to overcome to make it more beneficial to rent, borrow and share than owning, were the restricted feeling of spontaneous use and the issue of responsibility of the product.

The persons who seldom used a tent thought it was better to rent or borrow a tent instead of owning. On the other hand, the persons who often used a tent or wanted to use it often would like to own their tent but could imagine to rent or borrow their own tent to someone else to some extent. They thought it was safer to rent/borrow to a friend or to someone that already have tent experience to be sure that the tent is used in the desired way.

The biggest fears of renting or lending products to a stranger were that the person using the product wouldn't have the right knowledge of how to use it and that the product would break and not be given back in the same condition as before. How well people tend to take care of their own products is very individual and this also affects how well they care for others' products. The exchange paths also affect how well

people tend to take care of the products, for example can borrowing be seen as a favor and therefore result in better care of the products. It is also unclear who has the responsibility of the product if something happens. Although the interviewees had different mentalities, while some wanted to be sure that nothing would happen with their products other considered that wear and tear of the products are unavoidable and something that needs to be reckoned with. Therefore people tend to be more restricted about their precious products while products with less personal value simply could be rented/borrowed by anyone. People that rented their own product through the service Hygglo had a positive experience with the renting. They commented that people did take good care of their things and in one case the product was in a better condition after the rent than before. The fear of rent things to strangers was not experienced by the people that rented out their products though Hygglo.

Even if some obstacles were mentioned the interviewees could see some great benefits of renting their tent to someone. They could see that the utilization of the tent could increase and the resources decrease while getting an income from it. The renting could also justify and finance the purchase of a tent of higher quality. The mentioned advantages of renting from someone else were that it would be possible to get access to high-quality products at a lower price than buying and to choose different products suitable for different occasions. Renting could also be more convenient as the person who rent don't need to store the tent at home and it is expected that the provider guarantees the quality and cleanliness of the product.

Borrowing can be seen as more personal than renting as there is no payment. Instead, it can be seen as a favor that requires a favor or shown gratitude in return. For that reason, the interviewees mentioned they most likely would borrow from someone they know well. The biggest problem when borrowing is the issue of responsibility. There might be unspoken demands and expectations of how the product should be handled. This could make the perceived level of responsibility high and there might be fear of not knowing what will happen if the borrowed product would break.

Many of the interviewees thought that shared ownership was preferable as there are advantages from both owning and renting such as higher control and increased utilization. Although once again it could be unclear who has the responsibility for the product and there is a risk that no one takes the responsibility if there are many people sharing.

7. CONCLUSION OF PART 2a

This chapter starts with a summary of the research about tents and continues with a definition of the focus for the case study, which includes a customer journey of the selected consumption path, personas and focus points. A new version of the design guidelines, specific for tents and the selected consumption path, is also presented.

7.1 Summary of Part 2a

To summarize the result from Part 2a people think it is more comfortable to own but at the same time think they have too many products. The reason why they buy new products is lack of knowledge about alternative consumption. When a product is used seldom, people see opportunities to rent/borrow/share it and people that own and use it seldom can consider to rent it to others. The advantages that people associate with rent/borrow/share are increased utilization of the product, and possibilities to save or earn money and get access to more high-quality products. The disadvantages are low spontaneity and uncertainty about the product condition.

People want to sleep in a tent more but claims they don't do it because lack of time, have other interest, lack of equipment and don't know where to tent. When renting a tent people want to have control over its condition but it is an unwanted activity to pitch it before the trip to be able to control it. Some claimed that it should be the provider's responsibility to ensure the condition and cleanliness of the tent. In general, the interviewees were more worried about the condition than the cleanliness of the tent. People had a very different definition of what a clean tent was but important for all was that the inner tent was clean.

Out on a trip, it is very important that the user can pitch the tent quick and easy even if it is the first time using it. The Keb Dome 2 used in the case had not enough information available to be able to pitch it in an optimal way for a first time user. The instructions were inefficient and the users were uncertain if they had pitched it in the right way. To be able to avoid damages the tent needs to be pitched in the intended way but if something happens the users need to be able to repair damages during the trip. How comfortable and secure the users feel using the tent affect the experience of sleeping in a tent.

7.2 Defining the focus of the case study

7.2.1 Renting

Renting was chosen as the exchange path to further focus on in the design case. Renting was seen as a good way of increasing the utilization of a tent with shorter use loops. It could be possible

to rent from both a company and an individual and it could be economically beneficial for both the customer and the provider of the access to the product. As there is a money transaction when renting it could be more defined roles of who has the responsibility and not as personal as borrowing.

When renting there are several activities to go through and decisions to make. An example of the activities that the customer needs to go through can be seen in figure 7.1. Other orders of the activities might exist than the one presented in the figure. The path of renting is divided into three main parts; *obtain the product* (where find the product and get access to the product are included), *use the product*, and *get rid of/return the product*. Each part contains different number of activities (circle) and sub-activities (list below circle). The activities are similar for both individual and company provider. The biggest difference is that there need to be more personal contact between the customer and an individual provider than with a company and the issue of trust is more evident when it comes to individual providers as there are no obvious terms and conditions.

Some areas in the customer journey have been recognized to be critical in order for the customer to choose to rent tents. The service and the product need to go together in order to give the user a positive holistic experience. In the figure 7.2, the critical areas are highlighted and the unwanted activities are listed.

Primarily, it is important that the customer chooses to rent the product instead of buying. The service needs to be seen as a preferable option that is accessible, easy and trustful in order to be chosen. Several unwanted activities have been found that could affect the experience. The customer should not: be required to have previous knowledge, spend too much time searching for the product, pay extra money compared to buying new, worry about getting a product of bad quality, and be forced to act differently because the rented product requires extra care or other activities.

The other critical area includes the activities from *ensure the condition of the product* to *return the product*. This area focuses on the tent and puts high demands on the product design. It is important that the product has high quality, even if it has been used several times before, to not affect the user experience in a negative way. It is therefore crucial that the product is clean and in good condition before it is being used. Although to check the condition could be

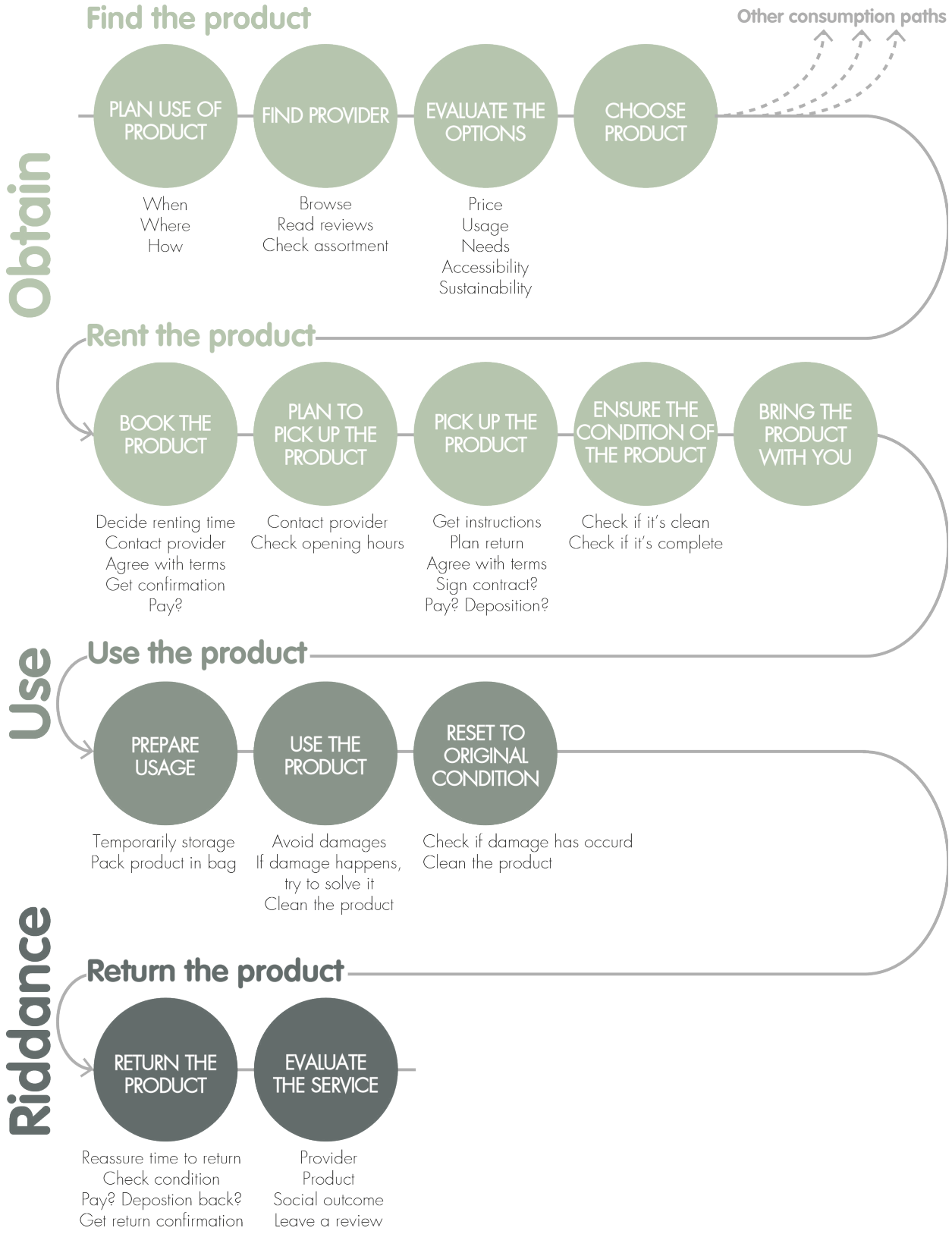

Figure 7.1
The customer journey of renting.

an unwanted activity for the user. During use, it is important that the tent is used in the correct way to avoid damages and to get a pleasant night of sleep. It is desirable to be able to use the tent in an intended way without neither having to read the instructions nor practice in advance. As the tent also should be in a good quality for the next user the condition needs to be reset and controlled after use. To put in an effort to clean and control the condition or do any extra activities before returning the product are also seen as unwanted activities.

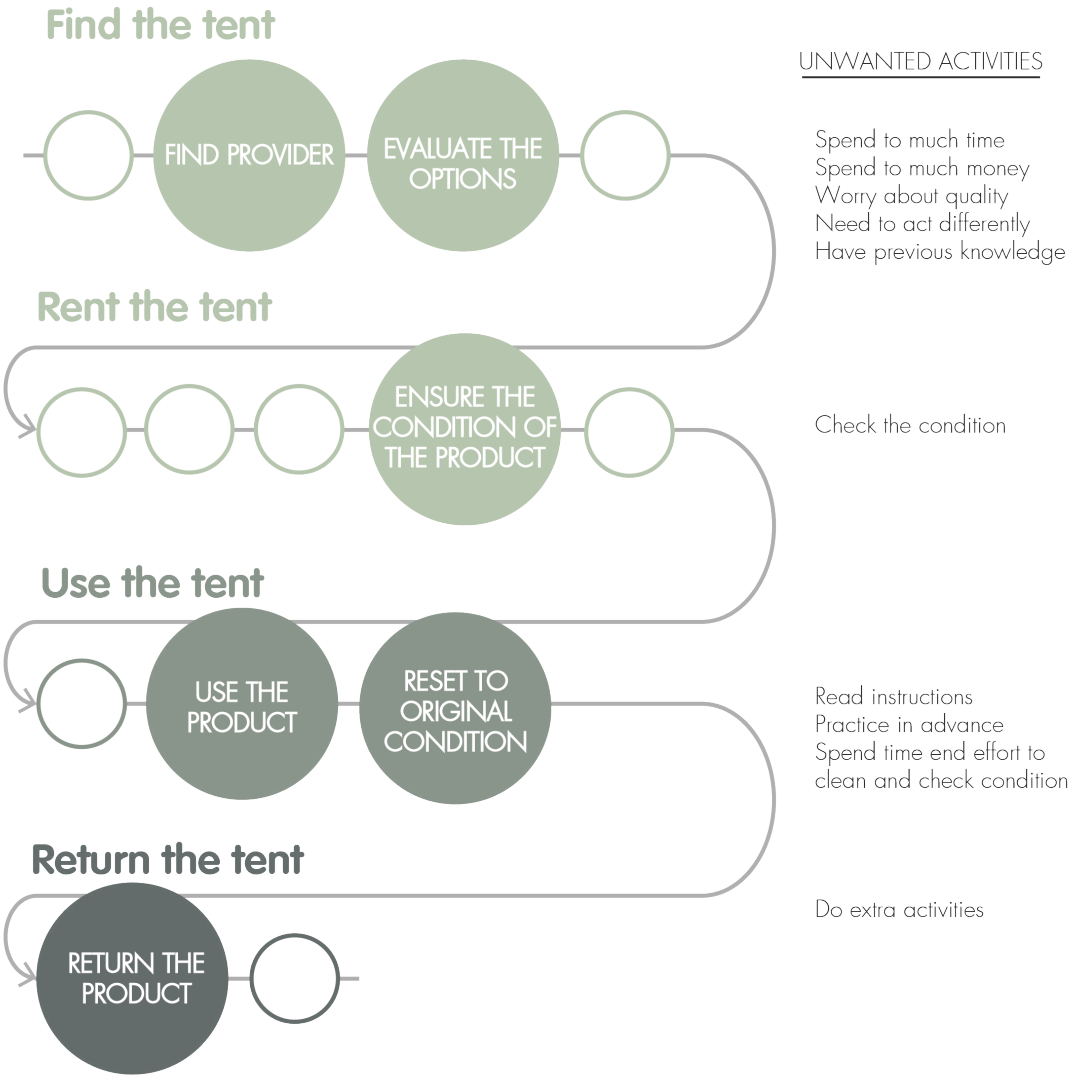

Figure 7.2
The critical areas of renting a tent.

When looking at renting from the provider's point of view some other critical areas appear, especially crucial for an individual provider renting his or her own tent to strangers (figure 7.3). The provider journey has in total more steps than the customer journey and is divided into five parts; *decide to rent, decide service, offer access, receive the product* and *inbetween rents.* Six critical areas have been highlighted where the product design has potential to improve the experience for the provider. First, the provider needs to evaluate if the profit of renting his/her tent outweigh the disadvantages. The provider wants to be sure that the customer has the right knowledge to use the product in the desired way and that increased utilization will not wear the product too much. For the same reason are

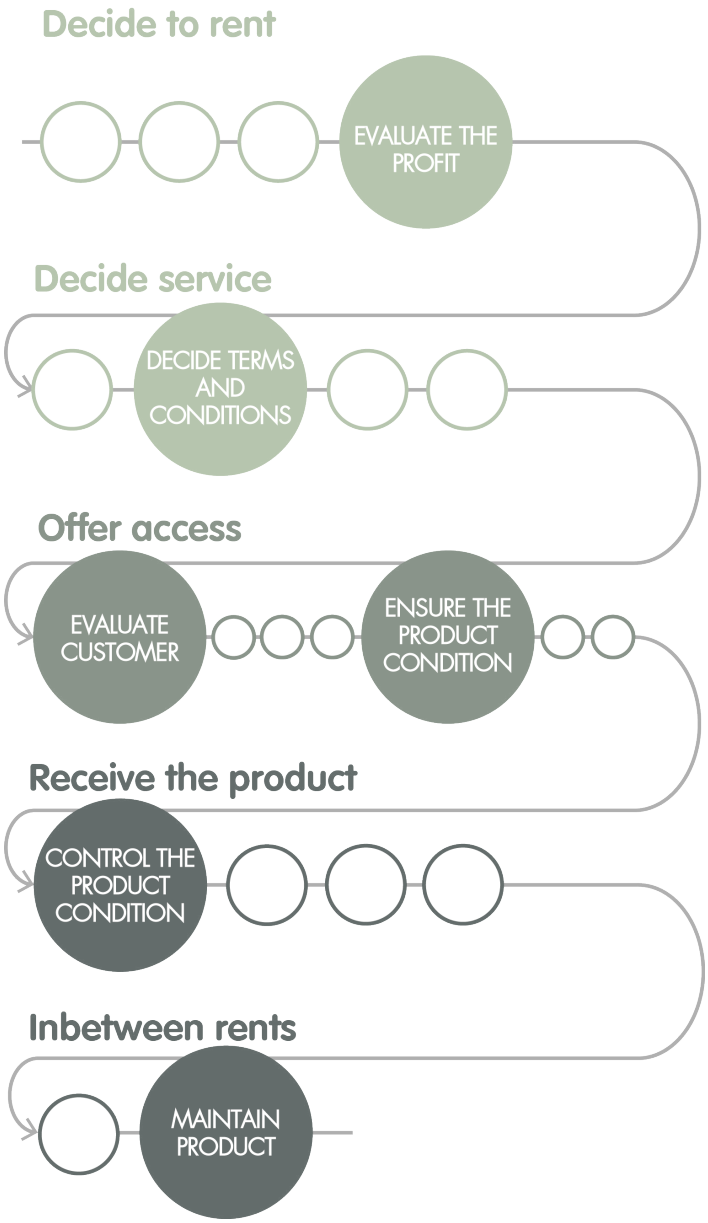

Figure 7.3
The provider journey of renting.

deciding terms and condition and *evaluate the customer* important but difficult activities. When it comes to handover the product to the customer and later receiving it, it is crucial to ensure and check the product condition. It is important for the provider to know the product status and to communicate it to the customer to provide the customer with a positive experience as well as ensure that the product is whole and clean. If something would happen to the product the provider should be able to maintain and repair eventual damages. If it would be easy to ensure that the product is used in an intended way, check the product condition and repair if damages occur, it could be more preferable for a person to consider to rent out their own tents.

7.2.2 Target group

Two personas were made that represent the intended users; people living in the city with none or little experience of outdoor life and tenting. The personas are Josefin and Kristoffer and can be found on the next page, they have a different view on sustainable behavior and different thoughts about tenting.

Josefin is engaged to live more sustainable and has a positive attitude towards alternative consumption as long as it is not too expensive. She has very little tent experience and therefore thinks hiking is difficult. To make the service preferable for Josefin it needs to be affordable, show the positive environmental impact and provide knowledge of hiking. The tent should also be easy to pitch and it should be easy to check the condition of the tent.

Kristoffer is not as engaged in sustainability as Josefin but has a bit more knowledge about hiking. He prefers owning and likes new products and technology. For him, it is important that the service provides modern tents of high quality and they should feel like new. The service should also feel like a convenient option and the handling of the tent, especially cleaning and checking the condition, should be as easy as possible.

The primary user is the customer of the service and the one using the tent. The secondary user is the provider of the tent and the one checking the condition of the tents.

Josefin 24 years

Josefin lives in a student apartment and study international relations. She dreams to travel the world and meet new cultures but get bad conscious if she take the flight as she knows it's a big pollutional source. Although her dream outweighs her bad conscious and she takes the flight when there is no other option. Josefin is frustrated over the consumption society and buys as little as possible. When she needs a new thing she buys it second hand if she can't borrow it from a friend. Josefin eats vegan and buys eco and trademark food as long it's not too expensive. During the weekends she enjoys long brunches with her friends.

Motivations for sustainable behavior

- Wants to be part of the solution
- Wants to do things herself, is creative and curious
- Wants to avoid consumption
- Questioning the old

Obstacles for sustainable behavior

- Sees sustainable alternatives as expensive
- Is impatient, gets frustrated when nothing happens
- Don't want to be controlled
- Think it's hard to find sustainable options

Thoughts about tent

- Used to tent with her family when she was a child but never since
- Would like to tent to discover and be closer to the swedish nature during summers
- Thinks hiking and tenting requires a lot of knowledge, which she doesn't have

Kristoffer 35 years

Kristoffer lives with his wife in their newly renovated house. He enjoys the feeling of something new which was why a total renovation of the house was the only option for him. During the renovation he prioritized high quality and energy efficient products over price. Kristoffer works as a management consultant and takes his bike to work because it's the quickest option. It is important for Kristoffer to have fun, hang out with friends and being able to buy and do whatever he wants, everything from pub quiz to skiing off-piste. He likes new technology and wants to try the newest products on the market.

Motivations for sustainable behavior

- Likes to try new technology
- Status and acknowledgment are important
- Sees purchase as an investment
- Wants to have control

Obstacles for sustainable behavior

- Prioritizing comfort and enjoyment
- Likes to buy new products
- Don´t care enough about the environment
- Overestimate his own abilities

Thoughts about tent

- Likes adventure and wants to explore new places
- Not used to go out camping but have done it a few times together with friends
- Wants to own his tent as it is convenient to have access to it whenever he wants, even if he doesn't use it that often.

7.2.3 Focus points

The results from the first part of the case study were concluded and narrowed down to a few focus points that were important to consider during the other part of the design case, the concept development.

In the second part of the design case, a solution should be developed with the aim to make it possible and favorable to rent tents to increase the utilization per product. The solution should also motivate and guide the target group, which are people living in the city with little experience of hiking and tenting, to stay out in the nature more and get a positive tent experience. To be able to do this both the service and the product needs to be adapted to this context. Below are four focus points listed that should be considered during concept development.

1. The service should be a preferable and trustful option to get access to tents.
2. The service should provide information and knowledge about outdoor life and how to use a tent in the best way.
3. The product should be easy to use in the intended way so it is possible for a first time user to use it without hesitation.
4. It should be possible to ensure and check the quality and status of the tent for both the user and the provider.

7.3 Design Guidelines for renting tents

Below is a list of guidelines that should be considered when designing tents that should be rented. The guidelines originate from the design guidelines for exchange in the pre-study, chapter 4.3, but are further developed for the specific design case. As Fjällräven already works with providing timeless, durable and functional products the guideline *Provide long lasting product* was seen as redundant and therefore not considered in the design case. The list consist of four main guidelines that each has several sub guidelines.

Design guidelines for renting tents

1. The service should be a preferable and trustful option to get access to tents.

- Communicate the advantages of the service
- Make it possible to gain access to the product with low effort needed from the user
- Make it possible for the user to feel spontaneity
- Communicate the user's responsibility
- Make the user perceive high control over the situation
- Make the user perceive the products' high quality
- Ensure high quality over time
- Make the user identify with the product
- Make the user trust the system and product quality

2. The service should provide information and knowledge about outdoor life and how to use a tent in the best way.

- Communicate information about outdoor life
- Give advice of how to improve the user's experience of the product
- Offer equipment needed for outdoor life

3. The product should be easy to use in the intended way so it is possible for a first time user to use it without hesitation.

- Make the product easy to use for a first time user
- Make the product easy to understand for a first time user
- Give correct information when the user needs it
- Make the user feel confident when using the product

4. It should be possible to ensure and check the quality and status of the tent for both the user and the provider.

- Make it easy to ensure that the product is complete
- Make it easy to ensure that the product is in good condition
- Make it possible to keep record over previous usage and damages
- Minimize the risk of damages and missing parts during use
- Make it possible to reset the product to good condition both during and after use.

7.4 List of criteria

Below is a list of criteria that needs to be taken into consideration when evaluating the solutions for this design case and be used as a less strict list of requirements. The criteria include different important aspects of the solution to match the scope of the design case. A solution should, therefore, be valuable for a first time user, be implementable for Fjällräven, support exchange of products and keep the high functionality of the tent.

Customer
- Profit and value for the user
- Preferable option for the personas
- High guessability

Product
- High functionality and quality of the tent
- Possible to implement for other kinds of tent

Provider
- Profit and value for the provider and company
- Go in line with Fjällräven product promise and responsibility
- Possible to implement

Environment
- Support exchange
- Low environmental impact

PART

2b

Case study
Concept development

This part of the report contains the second part of the case study, the concept development. The aim of part 2b was to develop a re-design of the tent, together with a service, suitable for renting. The part starts with concept development and evaluation through an iterative process and ends with a presentation of the final concept.

8. CONCEPT DEVELOPMENT AND EVALUATION

This chapter starts with presenting the concept ideation and evaluation divided into three main areas; service, instructions and product concepts. The chapter continues with concept selection and concept refinement and ends with a final evaluation.

8.1 Methods and implementations

8.1.1 Ideation

The design guidelines for renting tents have been the foundation for the ideation. The goal was to take all the guidelines into account and come up with suggestions for re-designs of the tent and concepts for the service according to the guidelines. The ideation started with brainstorming around each guideline at a time to quickly get a broad set of ideas. To further explore some of the viable ideas the SCAMPER (Nilsson, 2015) technique was used. SCAMPER is a creative brainstorming technique that encourages you to think how existing ideas could be improved by asking questions within each of the seven words that the mnemonic SCAMPER stands for; Substitute, Combine, Adapt, Modify, Put to another use, Eliminate and Reverse.

To come up with solutions preferable for the personas, ideas were listed that would encourage their motivations, simplifies their obstacles and take their thoughts about tenting into account. The inspiration for the method was taken from the project Green leep at KTH (2017). The ideas were listed for each persona separately and then compared with each other to find similarities between the personas.

An ideation workshop together with four fellow students (in total six participants) was held to get an input of ideas from another perspective. During the one hour workshop, two sets of ideations, as well as discussion about the problematic and possible solutions, were carried out. The participants had all pitched the tent once before. To recap their memory and discuss found problematics the tent was pitched together with the participants as a warm-up for the ideation. The first set of ideation was a brainstorming session where the participants were asked to come up with solutions to the question: “How might we make it easy to pitch the tent for a first-time user?”. The question was written on a big piece of paper where everyone could write or sketch their ideas and get inspired by the others ideas. The three most interesting ideas were selected for the second set of ideation. Brainstorming with the inspiration of the 6-3-5 method (Nilsson, 2015) was used to explore the ideas further. The three ideas were written on two papers each so all participants could get a paper with one idea. For five minutes the participants had to come up with new ideas or further development with

inspiration from the idea written on the paper. When the time was up, the paper was passed along to the next participant and a new five minutes ideation. In total three rounds of ideation were made and the participants could either create new ideas or continue on other's ideas.

All ideas from the different ideation methods were gathered and similar ideas were clustered together. The most viable or interesting ideas were selected and visualized to later be evaluated.

8.1.2 Concept evaluation

The ideas from the first ideation were evaluated towards the criteria listed in chapter 7.4 together with input from Fjällräven and Use2Use. The aim was to select the most prominent ideas to combine them into a final concept.

The ideas were presented to Use2Use to discuss and get input to the exchange perspective. A similar presentation was held to the contact person at Fjällräven which led to insights about the service and provider's perspective. A meeting was also held with the tent designer at Fjällräven to discuss possible modifications of the tent.

As a big variety of concepts were developed the similar concepts were evaluated against each other. Each concept was compared with the existing solution and evaluated whether they fulfilled the criteria better, worse or equal to the existing solution. The concept got positive, negative or zero points depending on the outcome and the points were then summed together and the concept with the highest score was objectively the best option.

The result from the different evaluations was discussed and the ideas that scored the best and got the most interesting input was chosen for further development.

8.1.3 Concept refinement

After the concept evaluation, the best ideas were combined and further developed into a final concept in a final iteration loop. The concept was evaluated and discussed continuously as the concept refinement process was ongoing.

The concept was made into prototypes to test and determine whether any changes were needed or not. The prototypes had different appearances as the concept included many different ideas. A suggestion of a platform for the service was made with Sketch,

a digital prototyping tool for interfaces, to develop the design and some functions of the platform. The instructions to the tent were made in Illustrator and printed out in full scale to evaluate and improve the readability and guessability of them. A new design of the case to the tent pegs was sewn and the functionality of it was tested. No permanent changes were allowed to be made on the tent. Changes of the tent design were therefore only tested with materials that could be removed afterward.

8.1.4 Final evaluation

The final concept was tested together with users to evaluate whether the concept was successful or not. Both the website of the service and the product solutions were tested separately with four persons each, eight in total. The test participants had no or very little previous tent experience to evaluate if the final concept was adapted to a first-time user. Notes were taken during the tests about what the participants did and said.

The website was tested on a computer and the test participants could click around in the prototype. As the prototype was not fully functional the participants had to imagine some of the features and settings. The participants were asked to think out loud and comment on the content and answer some questions afterward. The questions were about if they thought the information was sufficient enough, if they understood everything and if they could trust the service to provide tents of good condition.

The tent, as well as the instructions, were tested outdoors. The participants had to pitch and take down the tent with the help of the new instructions. Once again the participants were asked to think out loud and describe what they were doing and why. The participants answered some questions after the tent was pitched and then again when it was taken down. The questions were about how sure they were that they had pitched and taken down it correctly and in the right order. They also had to answer how sure they were about placing the pegs in the right direction, if the tent was adjusted correctly and if no parts were lost afterward. For this test, the prototype was not fully functional either and the participants were asked to imagine some of the features.

The evaluation resulted in insights about what was good about the final concept and what needed further improvements. Comments about small details that could further improve the concept was noticed and some small refinements were made on the final concept.

8.2 Results from ideation

8.2.1 Service ideas

Five service concepts were developed that originated from guidelines 1, 2 and 4 (chapter 7.3) to make the service a preferable option, provide information about the products and ensure high quality. Common for the different concepts is that the service should feel flexible and modern with an easy and safe system to make the customer feel confident in the process. The customer should not need to read long formalities when renting. Instead, the service should clearly communicate what's included or not and the customer's responsibility. The service should provide high-quality tents that are easy to use and give inspiration to outdoor activities. The different concepts have slightly different approaches and communicate the service in different ways.

Try before you buy

This concept (figure 8.1) address to people that are soon to be outdoor enthusiasts to give them an opportunity to try different types of tents before deciding what to buy. The service gives the customer a chance to practice and gain knowledge within the area in order to feel like an expert. The service needs to offer all kinds of tents from Fjällräven's assortment and it should be possible to compare unique functions and technical specifications between the different models. It is of great importance the tents maintain high quality and it is communicated to the customer through the quality control that is made between every usage. To increase the feeling of spontaneity there is a last minute offer with the tent that has not yet been rented together with a suggestion of where to tent nearby. The service should also inspire the customers to hike in unique nature and give tips on how to improve the tent experience.

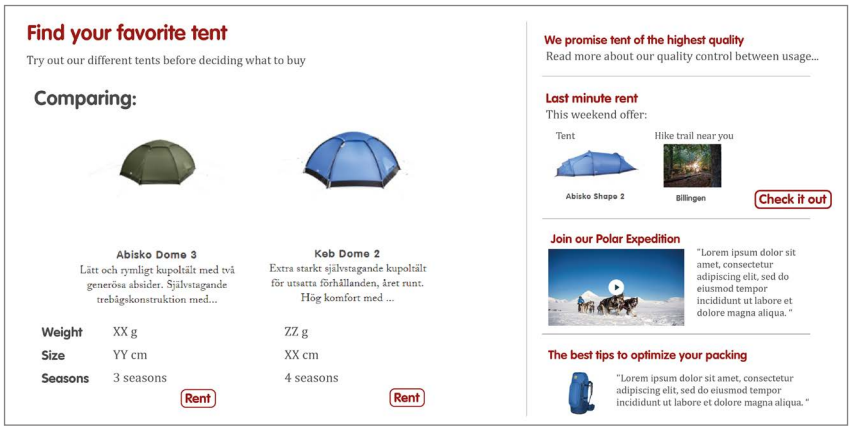

Figure 8.1
The concept Try before you buy

A helping hand

This concept (figure 8.2) provides a helping hand for those who have low previous tent experience. The service should communicate the simplicity of renting and to be out in the nature. With only a few choices from the customer, the assortment gets filtered and the service shows the best suggestion for the occasion. For the customer to gain more knowledge about the tent and outdoor activities the service should provide information and guides about almost everything related to being out in the nature. For example, it should be possible to watch videos of how to pitch, use and take down the tent to get prepared before going out. To inspire the customers and make them trust the service they can read about other people's experiences.

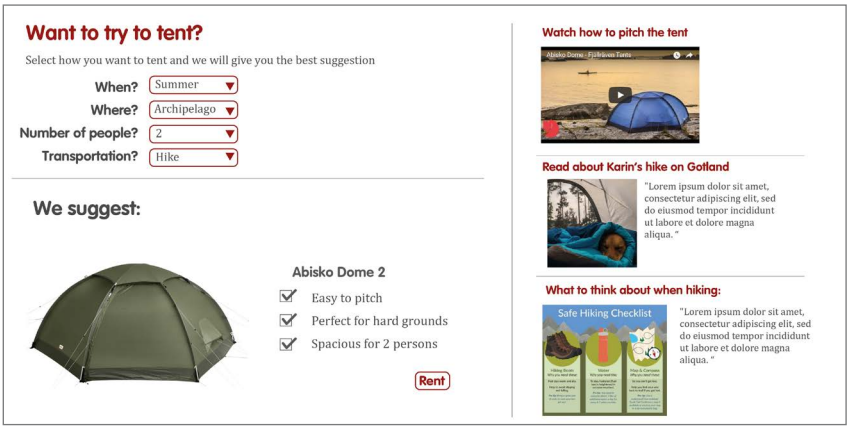

Figure 8.2
The concept A helping hand

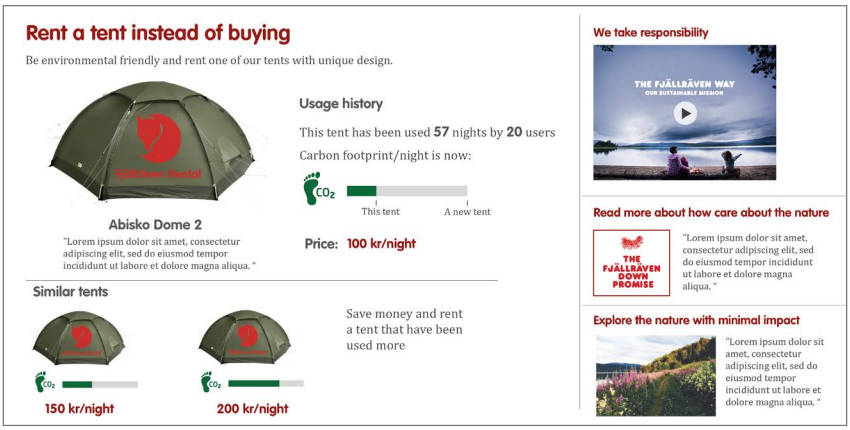

Figure 8.3
The concept Environmentally friendly

Environmentally friendly

This concept (figure 8.3) has an environmental approach, showing the environmental impact renting tent has. It is possible to see usage history for each tent and how increased usage lower the carbon footprint of the tent. It is cheaper to rent a tent that has been used more and it is possible to compare the options with each other. The tents have a unique design with Fjällräven's logo on it to

make the customer show an environmental statement of actively renting a tent instead of buying it. In that way, the customer might identify with the service and the products more. The service also offers inspiration of how to stay in the nature with as low impact as possible and information about Fjällräven's responsibilities.

Different providers

This concept (figure 8.4) is a platform that gathers all providers that are renting out tents from Fjällräven; individuals, organizations and companies. When gathering all types of providers in the same place, customers might trust the providers not related to the brand more. To be able to rent out a tent it needs to be registered on the platform and approved by Fjällräven. When adding a tent the provider only need to select what type of tent it is, a picture of the tent together with technical specification is added automatically to make all adds look the same. The customer should not choose tent dependent of what provider it is but the type of tent and location. The provider gets a QR-sticker to put on the tent that makes it possible to log the usage and to communicate the quality of the tent to the customers. Read more about how to check the quality below.

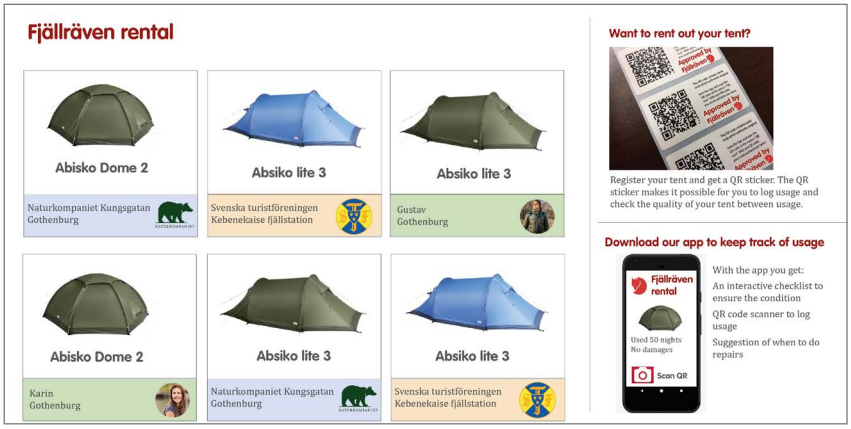

Figure 8.4
The concept Different providers

Check the quality

This concept (figure 8.5) is a suggestion of how to facilitate quality control of the tents for the providers through a platform. This concept could be included in all service concepts above. Both individuals and companies could use this system to create a routine of how to ensure the condition of the tent. The system could also make it possible to guarantee a high quality of the tent and to communicate it in a good way to the customers. A QR code is placed on the tents which makes it possible to track the usage and eventual damages. The QR code is scanned both when being rented and returned to log the amounts of nights it is been used. An individual provider needs to scan his/her own usage of the tent as well for the system to work. When the tent

is being returned the customer can report if any problems occurred and the provider can document it on the platform. The provider then pitches the tent to let it dry completely and check the condition at the same time according to a checklist and eventual damages are reported digitally. After a certain amount of usage, the platform sends notification that advice the provider to do extra controls, for example extra carefully check the seams. The QR code could also be possible to scan for the customer to read more information about the tent and see when it is latest been controlled.

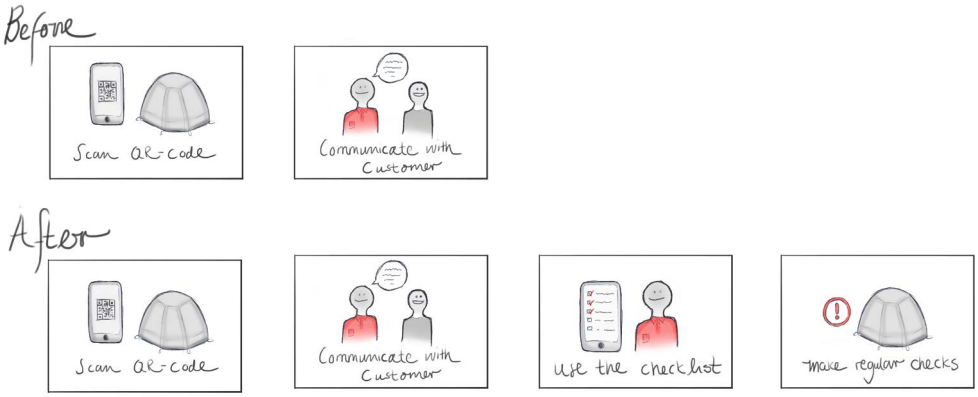

Figure 8.5
The concept Check the quality

8.2.2 Instruction ideas

Below are five suggestions of how the instructions of pitching, using and taking down the tent could be improved. The concepts originate from guideline 2 and 3 (chapter 7.3) and aim to provide essential information to the user and increase the guessability of pitching the tent.

Digital instructions

This concept is based on digital instructions, see figure 8.6, where the user needs to bring the smartphone to the hike. The instructions, accessible in an app, can be adapted to the users' experience with extensive instructions for the less experienced user and less extensive for the experienced user. In this concept, every tent has a unique code and when the code is scanned with the app, specific instructions for that kind of tent are presented. The instructions

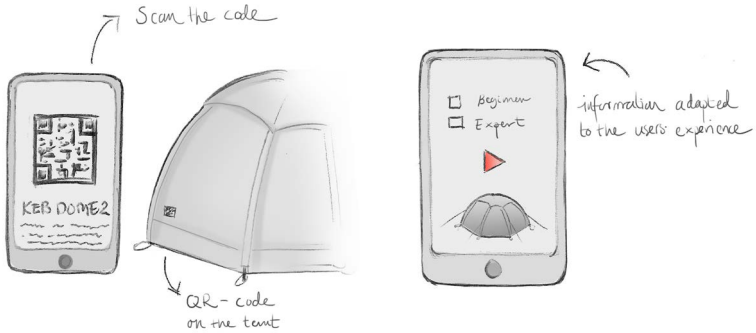

Figure 8.6
The concept Digital instructions

are presented step by step in the app to avoid stressing the user by presenting too much information at the same time. For example, one task will be presented to the user in the app and further instructions will be delivered when the user confirms that the task is completed. The app can also adapt the instructions and information to the tent environment, for example to weather conditions and to different grounds.

Instructions with colors

To make it easier for the user this concept is based on color coding on the bag and the tent. The color coding on the bag is placed together with short instructions on the top of the bag. To be able to pitch the tent the right way the short instructions describe in what order the user should interact with the different colored parts. For example, one instruction could describe connecting the red parts of the tent together. To be able to see where the color coding could take place on the tent, see the figure 8.7 underneath. One idea is to add maximum 2-3 extra colors to the tent and the other suggestion is to use different shades of one color. When adding more color to the tent the appearance of it could change but the ambition of this concept is that it should be discreet but at the same time effective. The idea of color coding is to make it easier to communicate the instructions on the bag and also to use fewer instructions in order to avoid to stress the user.

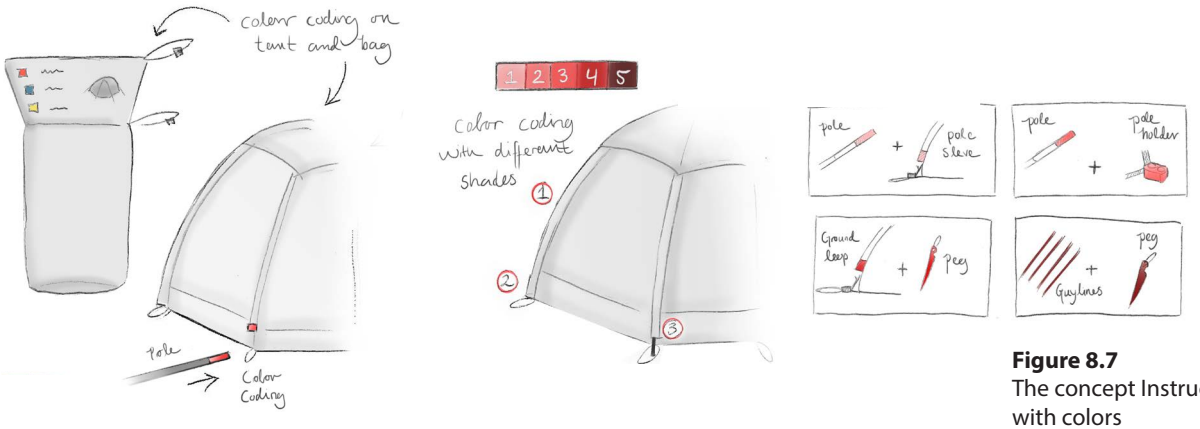

Figure 8.7
The concept Instructions with colors

Instructions inspired by IKEA

This concept is inspired by IKEA´s instructions manuals where you easily can see how many parts the product consist of and illustrations on how the product should be put together. The idea is to only have instructions on a foldable paper that can be anchored to the ground by the tent pegs like in figure 8.8. On the paper manual, it is possible to see the number of parts that you need to pitch the tent and also a step by step illustrations on how it should be done. When

the tent has been pitched the paper can be folded and placed in a pocket outside the tent bag in order to avoid it to disappear between usages. This solution reduces the amount of text instructions and the illustrations need less effort to be read by the user.

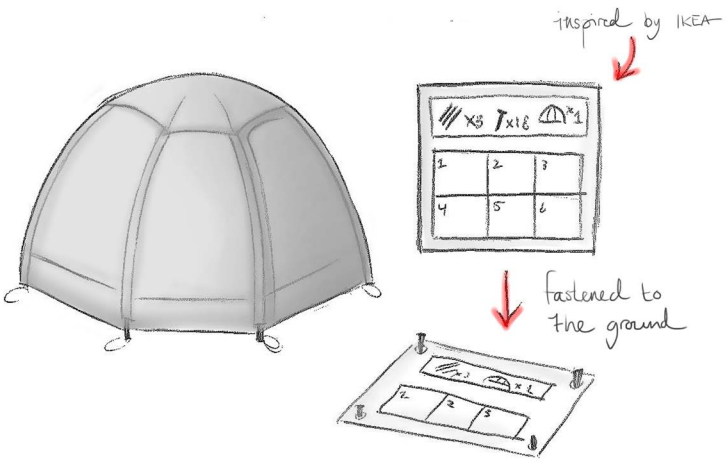

Figure 8.8
The concept Instructions inspired by IKEA

Instructions on the tent bag

In this concept, the instructions are only presented on the tent bag as in the figure 8.9. One possible placement for the instructions is that they are placed all around the upper part of the tent bag and another is that they are placed on an extra part that can be unfolded. In both cases, the information is organized in Pitch, Use and Take down the use of the tent. To make the instructions easy to understand for the user it is presented step by step together with useful illustrations. This solution reduces the risk of the instructions to disappear between usages and also makes the instructions very visible when the user opens the bag. All the instructions are also collected together in order to make it easier to search for information.

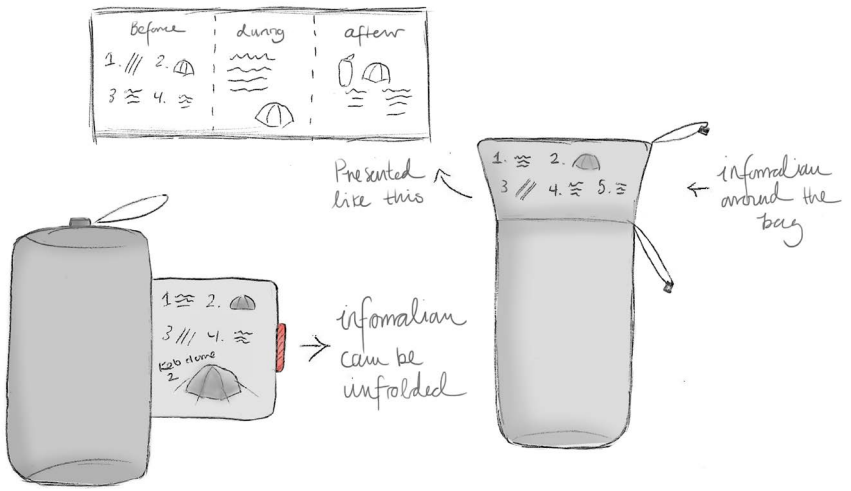

Figure 8.9
The concept Instructions on the tent bag

Instructions along the way

In this concept, the instructions are presented where the interaction between the tent and the user takes place, see figure 8.10. The instructions should be placed in the order the user interact with the tent during both the pitch, use and also when it is taken down. One example is that information about repairment are placed together with the repair kit and instructions about sleeping in the tent are placed inside the inner tent. This result in that the user doesn´t need to process too much information at the same time instead gets the right information when needed. As in the other concepts, the instructions are presented shortly with a describing text that is supported by illustrations.

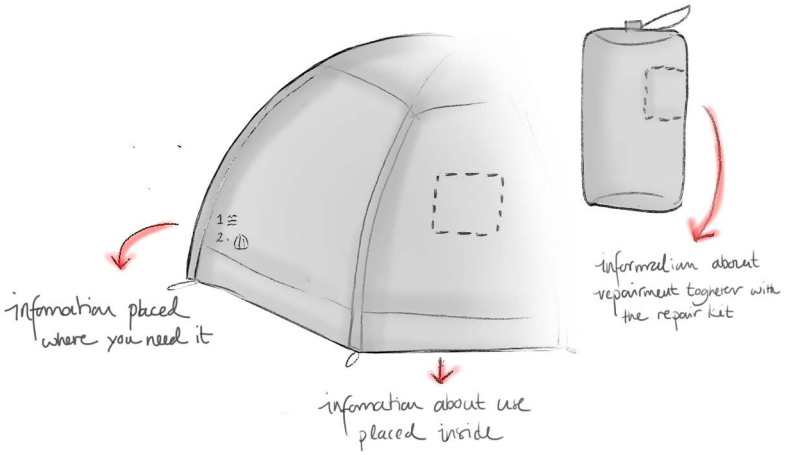

Figure 8.10
The concept Instructions along the way

8.2.3 Product ideas

Suggestions of changes of parts of the tent were made to make it easier to pitch the tent and to ensure that the product is complete, which originates from guideline 3 and 4 (chapter 7.3). The general construction of the tent has remained, otherwise the type of tent would be changed. Although suggestions for changes of the pegs and pole holder were made to make it easier to pitch the tent. Too keep a better order of all parts of the tent and not lose anything, especially the tent pegs, some suggestions of changes to the tent bag and to the case for the tent pegs were made.

Guide on pegs

To make it possible for the user to understand how the pegs should be inserted into the ground a marked line are added to the pegs. The marked line should work as a hint and are located on the top of the pegs as in the figure 8.11. When the peg is placed in the ground in the correct angle the slanting line on the peg points towards the tent and indicates where the guyline should be placed. This solution reduces the user's insecurity on how the pegs should be placed and could also reduce the amount of instructions needed before the pitch.

Adjust the holder

To make it easier to put the pole into the pole holder one solution is to make the webbing longer between lower anchor point on the tent and the pole holder as in figure 8.11. This distance on the webbing gets longer due to changed position and direction of the buckle. The buckle is instead placed on the top of the webbing close to the higher anchor point on the tent and is tightened by pulling down the strap. Changing the position of the buckle will still make it possible to tighten the tent in all different environments that affect the expansion of the flysheet. This solution will make it easier for the user to fasten the pole in the holder when the webbing is fully expanded.

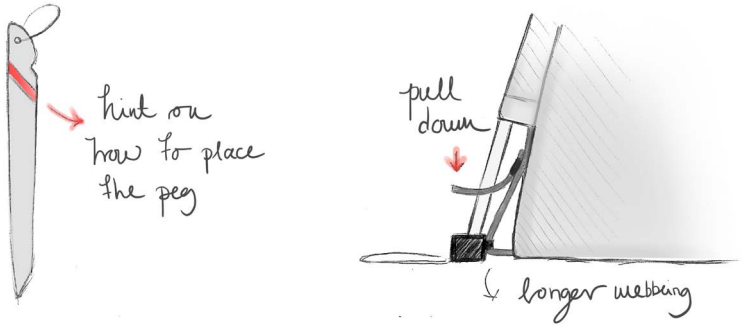

Figure 8.11
The concepts Guide on pegs (to the left) and Adjust the holder (to the right).

Number on peg bag

A small but effective change to the existing product is to label the bags with its content and the amount. On the bag to the tent pegs, the number 18 would show so it is possible to know how many pegs it should be, see figure 8.12.

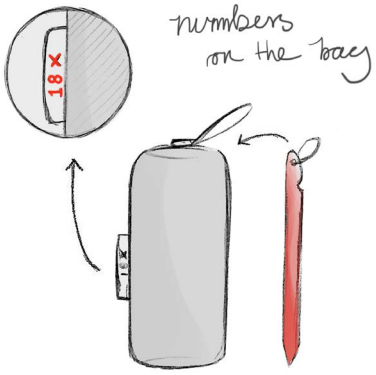

Figure 8.12
The concept Number on peg bag

Visual peg case

In this concept, the pegs are placed on the outside of the tent bag in a folded pocket as seen in figure 8.13. The pocket is divided into four smaller sections where four pegs fit perfectly. When four pegs are placed in one section the top part can easily be folded over to cover the pegs. After the user has placed all the pegs into the pocket it can be fastened on the outside of the tent bag. This solution makes

it possible for the user to see without opening the pocket that every peg is packed when going home from the hike. Placing four pegs together makes it possible to evaluate if some are missing without counting one by one. This solution also makes it easier for the user or a provider to evaluate with low effort if the number of pegs is correct before renting the tent or going out on a hike.

Rolled peg case

This concept is a version of the one above with a folded pocket but is rolled together and placed inside the bag instead of fastened on the outside as seen in the figure 8.13. The pegs are placed two by two to make it easy to check that no pegs are missing. There is an extra hidden pocket with two extra pegs that can be used if any of the other pegs would be lost or broken.

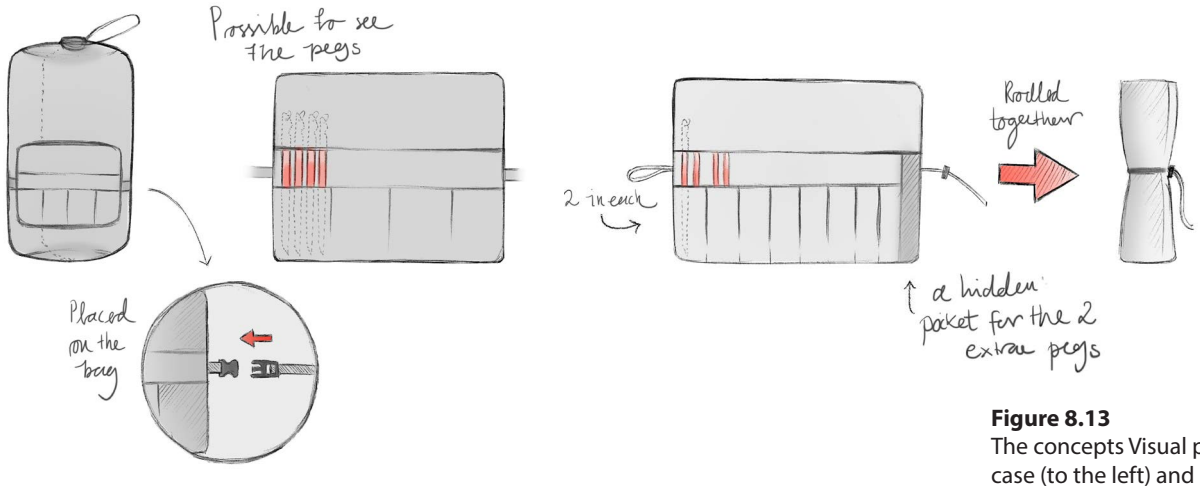

Figure 8.13
The concepts Visual peg case (to the left) and Rolled peg case (to the right)

Tent bag with pockets

One suggestion is to have several pockets on the tent bag where everything has its own place to keep a better order of the different parts (figure 8.14). There is also an extra pocket for external products that can be useful when camping, like a cloth for cleaning or tape and pliers to fix a broken pole.

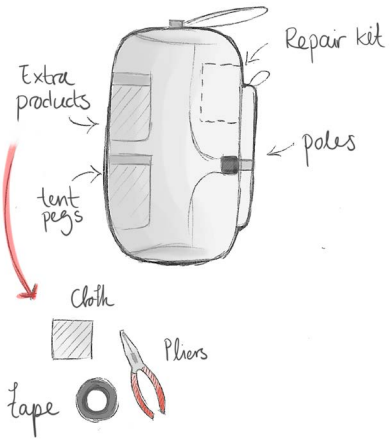

Figure 8.14
The concepts Tent bag with pockets

8.3 Results from concept selection

8.3.1 Evaluation of the ideas

The concepts were evaluated against the criteria presented in chapter 7.4 together with input from Fjällräven and Use2Use. The evaluation is divided into three parts; service, instruction and product solutions.

Evaluation of service solutions

The result of the evaluation with the criteria of the service solutions is presented in matrix 8.1. The evaluation resulted in different points for the solutions and the result is further discussed below.

CONCEPT / CRITERIAS	TRY BEFORE YOU BUY	A HELPING HAND	ENVIRONMENTALLY FRIENDLY	DIFFERENT PROVIDERS	CHECK THE QUALITY
CUSTOMER	Preferable for one persona 2/3	Preferable for both personas 3/3	Preferable for one persona 2/3	Preferable for both personas 3/3	Gives value for the users 2/3
PROVIDER	The provider needs a lot of different models 2/3	Possible to implement and gives value 3/3	The service requires specific tents 2/3	Value for more providers, lower quality 3/3	Can require a lot resources from the provider 2/3
ENVIRONMENT	Can contribute to consumption 0/2	Low environmental impact 2/2	Low environmental impact 2/2	Support exchange 2/2	Support exchange 1/2
PRODUCT	Not applicable 0/2	Not applicable 0/2	Not applicable 0/2	Not applicable 0/2	Possible to implement on other tents 2/2
TOTAL	4/10	8/10	6/10	8/10	7/10

Matrix 8.1
Evaluation of service solutions

The concept *Try before you buy* was given the lowest points in the evaluation because it supports exchange of products less than the other concepts. To promote the customer to try new products can encourage consumption of new products, which is the opposite to support exchange. The positive aspects of this concept are that it attracts users that is less interested in alternative consumption and would like experience to try a product instead of renting.

A helping hand was given high points in the evaluation because it is preferable for the first time user but also easy to use regardless of the user's experience. This solution is preferable for users with different views on alternative consumption.

The concept *Environmentally friendly* was given the second lowest points because it can be considered unattractive for users not engaged in alternative consumption. The positive aspect of the

concept is that it clearly communicates the good aspects of a renting service and this could be experienced positively by many users.

The last concept *Different providers* was also given the highest point in the evaluation because if it was possible to implement today it would have given value to more providers than the other concepts. The reason why this concept may be difficult to work further with is that it requires a lot of resources and is more a vision for the future. Today it is also possible as an individual to rent your own products through existing services, like Hygglo.

Check the quality is not comparable to the other solutions because it focuses on how the products should remain in a good condition between rents. This solution supports the exchange of products because it reduces the fear of renting a product in a bad condition or with low quality. The negative aspect of this solution is that it requires a lot of resources from the providers, for example a storage to be able to dry the tents.

Evaluation of instruction solutions

The result of the evaluation with the criteria of the instruction solutions is presented in matrix 8.2. The evaluation resulted in different points for the solutions and the result is further discussed below.

CONCEPT / CRITERIAS	DIGITAL INSTRUCTIONS	INSTRUCTIONS INSPIRED BY IKEA	INSTRUCTIONS ON BAG	INSTRUCTIONS ALONG THE WAY	INSTRUCTIONS WITH COLORS
CUSTOMER	Preferable for both personas, give different insuctions 3/3	Less preferable for the personas 2/3	Preferable for both personas, accessible 3/3	Need to know where the instructions are 2/3	Stressfull with Instructions both on the bag and the tent 3/3
PROVIDER	Also need to develop physical instructions 3/3	Don't give more value than the existing solution 2/3	Possible to implement and also gives value 3/3	Can be difficult to implement, put instructions on the tent 2/3	Can be difficult to code the tent with colors 1/3
ENVIRONMENT	Support exchange, but the user needs a smartphone 1/2	Support exchange less than the others 0/2	Support exchange 1/2	Support exchange 1/2	Support exchange 1/2
PRODUCT	Possible to implement on other tents 1/2	Possible to implement on other tents 1/2	Possible to implement on other tents 1/2	Possible to implement on other tents 1/2	Possible to implement on other tents 1/2
TOTAL	8/10	5/10	8/10	6/10	6/10

Matrix 8.2
Evaluation of instruction solutions

The concept *Digital solutions* were given high points because the app makes it possible to adjust the information to different users. The negative aspect of this solution is that the tent still needs physical instructions. It is not possible to anticipate that every user brings or wants to use a smartphone when camping.

The *Instructions inspired by IKEA* was given the lowest points in the evaluation mainly because the functionality is similar to the existing solution. These instructions are not attached to the tent or the bag and they could easily be lost. Therefore, this solution supports exchange less than the other solutions. The positive aspect of this concept is that the amount of text is reduced and it will possibly lead to less stress for the user.

Instructions on the bag was given high points in the evaluation as the concept support exchange by having permanent instructions on the product. The concept is also preferable for the first time user because the instructions are easy to access. Different types of tents need to have specific instructions and this could be expensive to manufacture.

The concept *Instructions along the way* was given points for supporting exchange by having permanent instructions on the tent. The negative aspects are the low guessability that occur when the instructions are positioned on the different places and also that the instructions on the tent can be worn over time.

The *Instructions with colors* was also given high points for supporting exchange by having permanent instructions. The color coding can be difficult to implement because the tent parts are manufactured by different producers and the different colors can affect the aesthetic of the tent.

Evaluation of product solutions

The result of the evaluation with the criteria of the product solutions is presented in matrix 8.3. The evaluation resulted in different points for the solutions and the result is further discussed below.

The *Guide on pegs* concept was given points for its high guessability and also because it is possible to implement on other tents. The difficult part of the concept is that another company produces the pegs and could therefore be difficult to implement.

The concept *Adjust the pole holder* makes it easier for the user to pitch the tent and therefore was given high scores for the criteria of customer and provider. The concept can result in difficulties to adjust the webbing because the user needs to pull down instead of up which may experience to be less natural.

The concept with *Number on peg bag* makes it easier to use and control the tent between usages and therefore was given high scores for the criteria of customer and provider. It is also possible to implement on other tents but the solution doesn't make it easier than the existing solution to control the number of pegs.

The concept *Visual peg case* was given the highest points compared to the other peg case solutions. This concept makes it easier to control the number of pegs which is both beneficial for the use and the provider. The problematic aspect will be that the tent bag needs to be redesigned in order to be able to place the peg case on the bag.

The concept *Rolled peg case* was given the same points as Visual peg case and therefore also the highest points compared to the other peg case solutions. This concept is easier to implement because it doesn't require any changes of the tent bag. The negative aspect is that it is not possible to visually count the pegs without opening the case.

The concept *Tent bag with pockets* can in some way be compared to the other peg case solutions but add more value for the inexperienced user. The tent pegs should be placed on the outside of the tent bag but are less visual for the user compared to the other concepts. It is not possible to count the pegs easily and therefore get low points for the criteria of customer and provider. To be able to implement the concept the provider needs to have additional tools that the customer rent together with the tent.

CONCEPT / CRITERIAS	GUIDE ON PEGS	ADJUST THE POLE HOLDER	NUMBER ON PEG BAG	VISUAL PEG CASE	ROLLED PEG CASE	TENT BAG WITH POCKETS
CUSTOMER	High guessability 2/3	Value for the user 1/3	Preferable for both persona 2/3	Preferable for both personas and easy to access 3/3	Preferable for both personas and easy to access 3/3	Value for the user, lower guessabillity 2/3
PROVIDER	Can be difficult to implement 2/3	Possible to implement and gives value 3/3	Easy to implement 3/3	Value for providers during rents 3/3	Value for providers and easy to implement 3/3	Value for providers but need extra tools during rents 3/3
ENVIRONMENT	Not relevant 0/2	Not relevant 0/2	Not relevant 0/2	Support exchange 1/2	Support exchange 1/2	Support exchange less 0/2
PRODUCT	Possible to implement on other tents 2/2	High funtionallity remains 1/2	Possible to implement on other tents 1/2	Possible to implement on other tents 2/2	Possible to implement on other tents 2/2	Possible to implement on other tents 1/2
TOTAL	6/10	5/10	6/10	9/10	9/10	6/10

Matrix 8.3
Evaluation of product solutions

8.3.2 Concept selection

According to the results of the evaluation, the best concepts were chosen to be included in the final concept. Below are the selected concepts presented as solutions for the service, instructions and product.

Service solutions

The concept *Helping hand* was selected as it was given the highest score in the evaluation and was seen as an easy way to find and select a tent for the user, regardless previous tent experience. Some features of the concepts *Try before you buy* and *Environmentally friendly* was also chosen as they could complement *Helping hand* well. The features were that the service should communicate the quality control, as in *Try before you buy*, and the positive environmental aspect of renting, as in *Environmentally friendly*. The concept *Different providers* was not chosen as it was seen as a more future vision for the service and not implementable right away.

The concept *Check the quality* could create value for both the provider and the user as well as it was seen to support exchange. For that reason, the concept was chosen for further refinement.

Instruction solutions

The *Instructions on the bag* was seen as the best option as all instructions are gathered in a specific place that is easy to access and difficult to lose, and the concept was therefore selected. *Instructions with colors* were considered as a complement to the *Instructions on the bag* to increase the guessability and make pitching of the tent more intuitive and was also selected.

Product solutions

The suggested changes of adding a line to the tent peg and new position of the buckle to the adjustment strap of the pole holder were both seen as an improvement of the tent and therefore selected to the final concept.

The concept *Visual peg case* with four pockets that are placed on the outside of the bag was selected as it was seen as the best option to be sure that all pegs are included. The concept makes it possible to see the pegs without opening the bag and it is easy for both the provider and the user to control the number of pegs.

8.4 Results from concept refinement

8.4.1 Concept refinement

The selected concepts were further refined to become a unified final concept. Results from the refinement phase are presented for the different parts of the concepts; service, check the quality, instructions and product.

Service

A prototype of a webpage interface for the renting service was made in Sketch. While the prototype was made the service was further refined by defining which functions and what information that should be available for the customer. For example, how much usage history that should be visual and how the quality control should be presented. A page that describes the renting process was added to provide information about the whole service to the customer.

Check the quality

After presenting the concept *Check the quality* to Fjällräven a discussion was held about how much the provider should do with the tents. The concept would require a lot of resources from the providers as they would need to pitch the tent to be able to thoroughly check the condition. Accaording to the contact person at Fjällräven, existing tent renting services at Naturkompaniet stores in Sundsvall and Gävle did not use to control the condition of the tents between usages, they only let the tents hang to dry, and they had not yet experienced any problems. With this in mind, the concept was changed to reduce the workload for the provider. Instead of controlling the condition between every usage the provider needs to trust what the customer tells about the condition of the tent when it is being returned. The provider will still need to make sure that the tent dries but will only make thoroughly controls after a certain amount of usages, that the system should remind the provider about, or if a customer reports a problem.

The code that makes it possible for the provider to track usage should be placed on the tent bag instead of the tent as it is easier to access the code on the bag than on the tent. The feature to make it possible for the customer to scan the code was added. By scanning the code the customer could read about when the tent latest was controlled and find information about the tent.

Instructions

When developing the instructions on the bag the goal was to create instructions that could be applicable for all four of Fjällräven's dome tents, as it would be expensive to produce different instructions for each tent. Information about the tents was gathered as well as instructions on how to use the tents to find the essential information that a first-time user needs in order to use the tent correctly. The existing instructions of how to pitch the tent was developed to match the user group better with new images and a new way to present the instructions. The instructions were visualized in Illustrator and printed out in full scale to evaluate if the text was easy to read and some changes were made to improve the instructions even further.

The concept *Instructions with color* were changed from having different colors for the different steps of the pitching process into having the same color for all parts of the tent that the user interacts with when pitching. By having many different colors on the tent the user could be confused instead of guided and many colors were considered to not be visually pleasing. The color coding was tested on the tent with colored tape attached to the tent poles, pole holders and the opening of the pole sleeves.

Product

To be able to try and evaluate the peg case, two versions of prototypes was sewn as can be seen in the picture (figure 8.15). After testing the first prototype, which looked like the concept *Visual peg case*, the design was changed to look more like the concept *Rolled peg case.* The open peg case was difficult to fasten on the outside of the tent bag and there was a high risk that the pegs would unintentionally fall out from the case . By rolling the peg case together these problems could be avoided. After the first prototype, it was easier to decide the correct measurements of the case and a prototype of the improved peg case was made.

A small change was made to the line on the peg. Instead of indicating where the guyline should be placed the line should be placed horizontal to the ground, as this was seen as more intuitive.

Figure 8.14
Prototype of the peg case

8.4.2 Final concept evaluation

In general the final concept was successful as the solutions guided the users without previous experience to find a suitable tent on the website and then pitch the tent correctly.

When the four test participants tested the service they thought that the overall sequence was experienced to be logical and easy to understand and that it provided the user with sufficient information. The participants had low tent experience but didn't have problems to understand the different information that the user needs to fill in to find a suitable tent. One participant mentioned that maybe an experienced user wants to fill in less information in the beginning and instead choose their own tent by reading the extensive product information.

The participant experienced that the "quality control" could be communicated more clearly and mentioned that this was something that they really liked. They commented that it could be positive to see more information about the quality control and be able to read when and by whom the tent was controlled the last time. The fact that it was possible to see that the tents have been controlled made the test participants trust the service more.

The information about the environmental impact was experienced both negative and positive by the test participants. Users that cared a lot about the environment and didn't care that the tent had been used a lot had a positive experience and mentioned that they liked the transparency of the service. One test participant did not want the information on how many nights the tent had been used and thought it made the service less appealing.

Different test participants evaluated the tent solutions and were asked to pitch the tent when using the new instructions. All of the four test participants did understand the instructions very well but some followed them more carefully. One of the test participants started to read the first sentence and looked at the picture but then started to pitch the tent before the person had all the information. This behavior of not wanting to read instructions did affect how correct the tent was pitched. Most of the participants experienced the instructions to be presented in a logical order and the illustrations easy to understand. All of the participants were quite confident that they pitched and took down the tent correctly. They were sure that they pitched it in the correct order thanks to the instructions.

Not all of the test participants noticed the color coding on the tent. For the people that did notice the coding experienced it to be very natural to follow. The participant that didn't notice the coding was informed about it after the test and commented that it maybe would be wise to mention the color coding in the instructions. It is difficult to evaluate if the coding did help the participants or not since it is possible that it helped without the participants' awareness. None of the participants did notice the adjustment strap at the pole holder, even if it was marked red, and the participants were not that sure they adjusted the tension of the fly sheet and guylines correctly.

The prototype of the peg case was also evaluated during the user test and the participants did use it during the pitch and also when taking down the tent. When using it during the pitch some of the participants commented that they wanted to use all of the pegs that were visual in the case. They also commented that the two pegs that were hidden should only be used if the other ones were missing. When taking down the tent one participant reflected over how many pegs it should be in each pocket and quickly decided that it should be four in each. After putting the pegs in the right pockets the participant commented that this solution would make it easy to evaluate if the number of pegs was correct. The participants were sure that all parts were packed and nothing was missing after taking down the tent.

The guiding line on the pegs was also evaluated during the test but with a varied result. All the test participants agreed on that the line indicated that the peg should be placed with an angle into the ground so the line gets horizontal with the ground, but they inserted the pegs in different directions. The line was designed to indicate that the pegs should be placed pointing away from the tent but some of the participants placed them in the opposite direction. One of the participants even looked at the instructions to get information on how the pegs should be inserted in the ground but ended up placing it in the wrong direction anyway. The problem with the original design of the peg, which was noticed during the first user test with the tent (chapter 6.2.2), confuses the user about which part of the peg that should face the tent. An improvement was made as the users placed the peg in the right angle but still not always in the right direction. Only one of the participants was confident over placing the pegs correctly, even if they were placed in the wrong direction. The other participants, who placed the pegs correctly, were more uncertain if it was correct.

9. FINAL CONCEPT

In this chapter the final concept is presented.

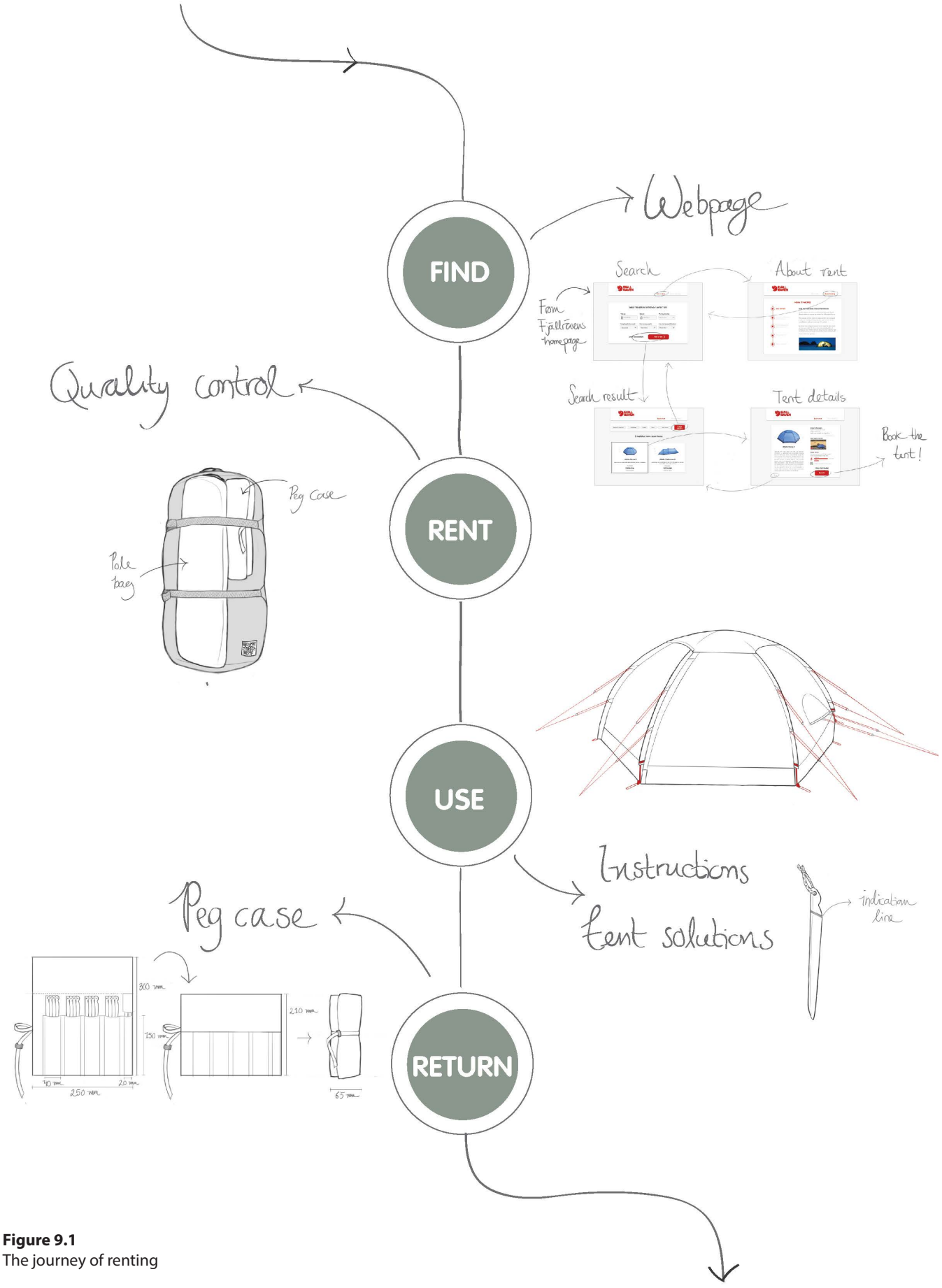

Figure 9.1
The journey of renting

9.1 The journey of renting a tent

The final concept involves solutions for the whole journey of renting a tent and are therefore presented in the categories; Find, Rent, Use and Return. In figure 9.1 an overview of the final concept is presented, which consist of both service and product solutions to make it possible to exchange tents in a preferable way. The final concept will support the specific exchange path, rent, but also support exchange of tents in general. The solutions presented are designed specifically for the tent Keb Dome 2 but can be applicable for all types of tents.

9.1.1 Find the product

To rent a tent should be seen as equally easy as buying a new one and therefore it is important that it is possible to find when the user is in need of a tent. The service where it is easy to rent a tent is therefore accessible through the company's e-commerce and promoted on the same level as buying a new. When clicking on "rent" at the company's webpage the customer gets transported to a new platform where the rent takes place. An overview of the renting process is visualized in figure 9.2.

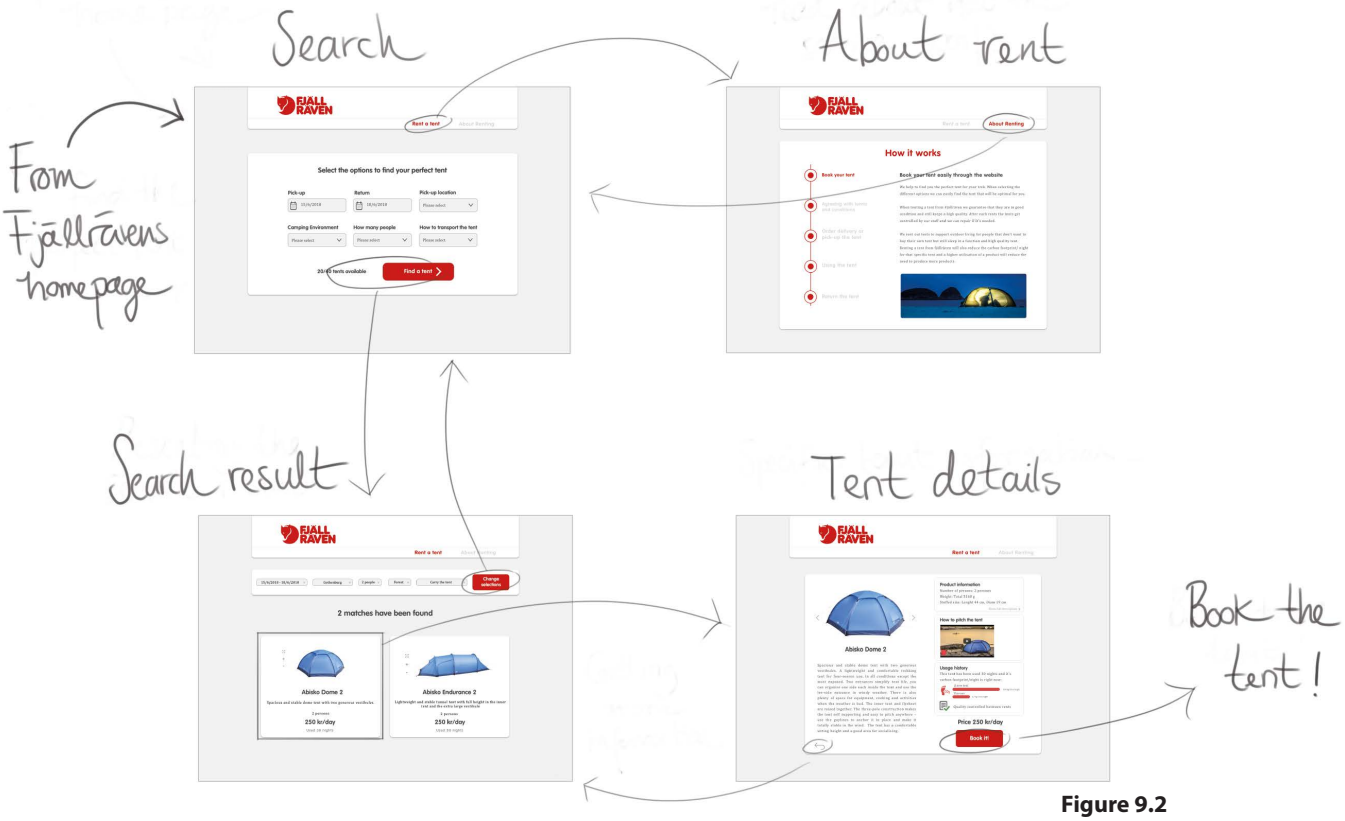

Figure 9.2
Overview of the renting process

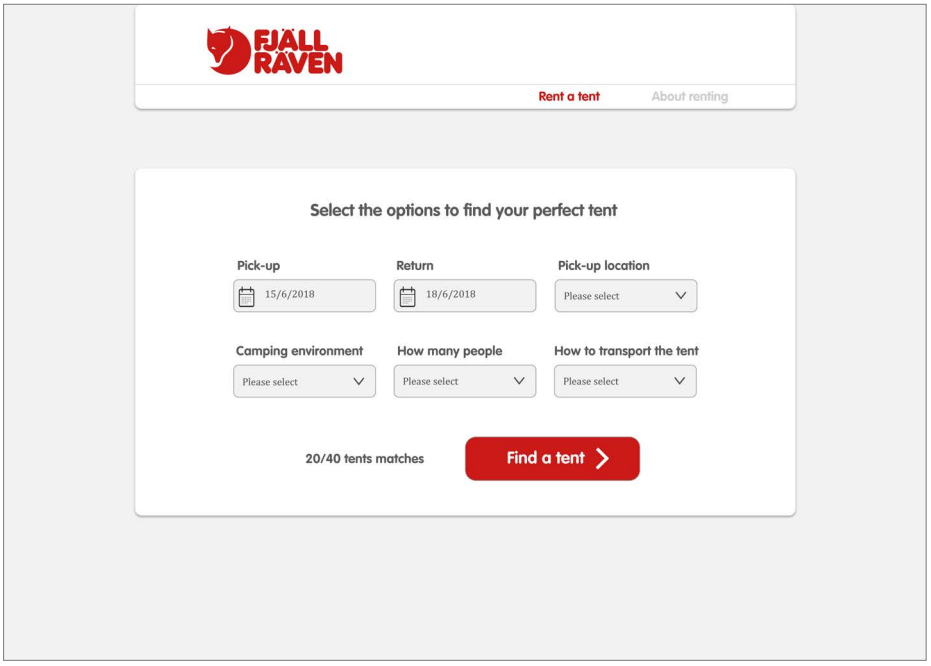

Figure 9.3
The search page

The customer first gets presented with the search page, figure 9.3, and here it is possible to specify what tent the customer needs. On the page, the customer can fill in what date the rent will take place and where the pickup of the tent will take place. This information is mandatory and needs to be specified to be able to find a tent for the customer. It is also possible to fill in additional information, like how many people that will use the tent, in what environment it will be used in and how it will be transported. All information that the customer needs to fill in requires no prior experience of camping and if information is specified it will guide the customer to choose the perfect tent. If the customer has a lot of camping experience it is possible to only specify the mandatory information and choosing tent after the customer's own preferences. Information on how many tents that matches the specified information is also presented and the number updates when the customer adds information. To be able to move to the next page the customer clicks on "Find a tent" and gets directed to the page presented in figure 9.4.

The page with the search result is an example on how it could look like and in this case the customer gets presented with two alternatives that matches the given specifications. It is still possible to see on the top of the page what information the customer defined at the previous sequence. The two tents are both presented with a picture, short description, price and number of used nights. The information that the customer gets in this sequence are short but it is still possible to quickly compare them between each other. When clicking on one of the tents the user gets more information as shown in figure 9.5

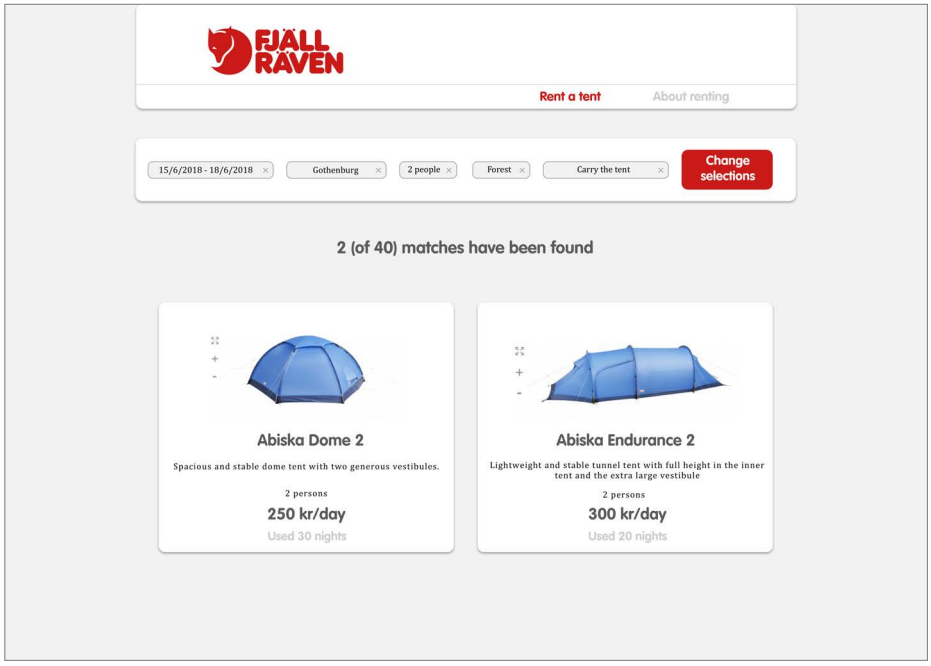

Figure 9.4
The page with the search result

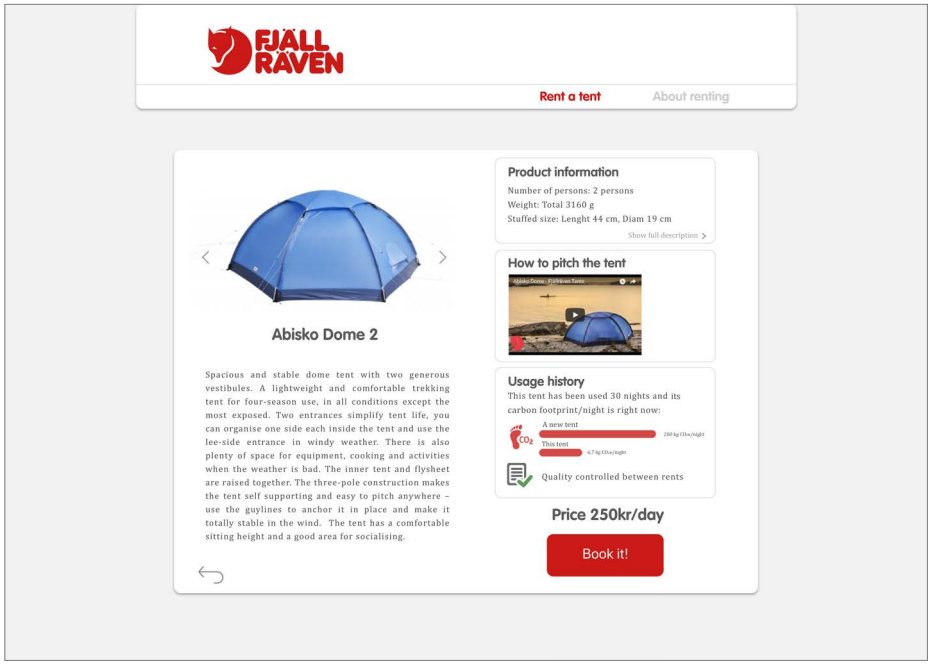

Figure 9.5
The page with tent details

The page with the tent details is designed to make it possible for the customer to find out more about the different tents. To the left it is possible to find more pictures on the tent and also a longer description about the product. On the top right side there is product information with some of the technical data about the tent. If the customer wants to read the full description of the product it is possible to click on the link and get directed to Fjällrärven's product page. To the right, the customer can also watch a video on how the tent should be pitched and also read about the specific impact

this tent has on the environment. The footprint communicate the decreased environmental impact the rented tent has compared to a new tent and is measured in carbon footprint per night. Above the symbol the customer can read how many nights this tent has been used and it is designed for the user that cares about the environment. That text is less visual than the carbon footprint and quality control symbols and therefore will not cause a negative experience for the customer that don't want to be reminded about the previous users of the tent. It is also possible to get information about the tents current condition and this is communicated with the symbol of a checklist with a green mark. If the customer places the cursor over the symbol, additional information about the condition are presented. The customer can read about when and by who it was controlled and also a description of what's included in the control process. At the bottom of the page the customer can see the price for renting the tent and the price will be different depending on how much the tent has been used. A tent that has been used five nights will be more expensive to rent than a tent that has been used for sixty nights. If the customer wants to book this tent it possible to do this by clicking on the "Book it"-button. If not, it is easy to go back and further investigate other tent options.

The last step is to book the tent and after clicking on the "Book it"-button the user needs to fill in personal information and payment specifications. Here the customer also get information about the pick-up of the tent and in what store it will take place.

On top of every page it is possible to click on "About renting" and the customer gets presented with the page shown in figure 9.6. This page describes the whole processes of renting a tent, everything from booking to return. To the left there is a timeline that divides the information into smaller categories presented in chronological order. The timeline gives a good overview of the information and makes it easier for the customer to find a specific topic. When the customer clicks on one dot on the timeline the title changes the color from grey to red to communicate where on the timeline the customer is. The text that are presented for each step on the timeline are as short as possible but still detailed enough to not be experienced as long and demanding for the customer.

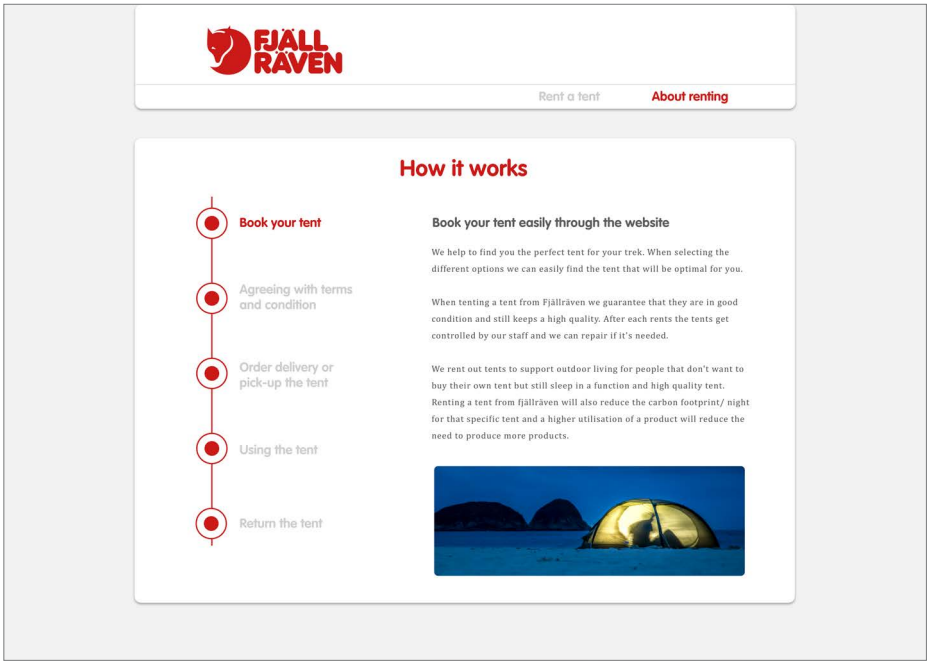

Figure 9.6
The About renting page

9.1.2 Rent the product

When the customer has booked the tent it is important that the provider can ensure that the tent is in a good condition. Good condition implies that the tent has high quality and is clean. It is important that the inner tent where the user sleeps is clean but less important on the outside of the tent. To ensure the customer that the tent will be in a high condition, the provider uses a specific control system.

The key feature of the control system is that every tent has its own code and the provider can log the current condition. All tents are provided with a unique code on the tent bag that is possible to scan by the provider. When a tent has been used and the customer returns it, the provider has the responsibility to get information about the condition from the user. The provider asks the customer if something broke or happened during the camping and this information is documented in a logbook for the specific tent. After the rent, the provider needs to ensure that the tent is dry and that no parts are missing. If the tent is not totally dry the provider needs to dry it by letting it hang. At the same time that the provider controls the dryness, it is also possible to control the damages if the user reported any. When the provider has made sure that the tent is in good condition it needs to be documented in the system.

When a new customer wants to book the same tent as above the provider can easily check the condition of it by looking at the logbook. By documenting what condition the tents are in makes it possible for different employees to ensure the condition. When the provider hands over the tent to the new customer the condition of it can easily be communicated. If some parts need to be handled more careful to avoid damages the provider can communicate this to the customer as well.

The system logs the number of nights that the specific tent has been used for and this information is useful to be able to keep them in good condition. After the tents have been used for forty nights, as a suggestion, the system alerts the provider that a more extensive control needs to be made. Then the provider can find parts of the tent that are starting to break and repair them before any damage occur. The extra control results in that the tent will be in a better condition for a longer period of time and with higher utilization rate.

9.1.3 Use the product

The new improved tent and instructions along with the control system makes it possible for a first time user to use the tent in the correct way without having to practice in advance or read long and complicated instructions. This makes it possible for the customer to pick up the tent on the way to the hike and the usage can be more spontaneous.

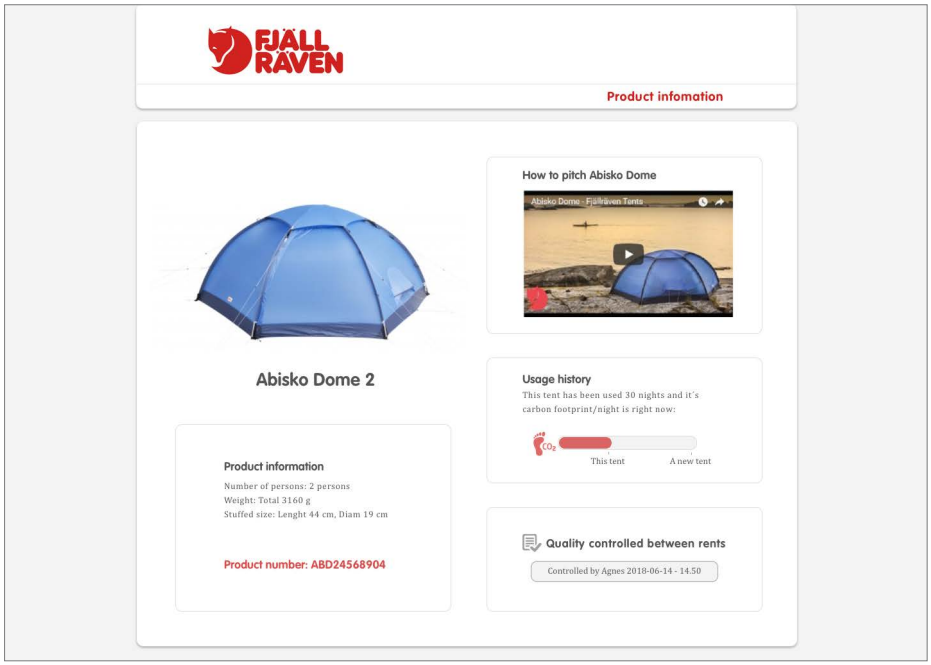

Figure 9.7
Information about the tent, access from QR-code.

On the outside of the tent bag, the case to the tent pegs is placed beside the bag to the tent poles. The placement of the pegs and poles make them easy to access and the user has a good overview that all parts are along. The tent bag also has a QR code that is possible to scan with a mobile device. The code leads to a webpage for the specific tent, see figure 9.7, where it is possible to read information about the tent, see when it latest was checked and watch a video of how to pitch it. The QR code is a possibility for the inexperienced hiker that want to have more information about the tent in order to feel more confident when using it. This can be seen as an additional feature that is not necessary but complementary for those who wants extra support.

When the user opens the tent bag, the instructions of how to use the tent correctly appears, see figure 9.8. See appendix IV for bigger size of the instructions. The instructions are printed on the inner opening of the bag which makes them hard to lose. The instructions, figure 9.9 and 9.10, gather the basic knowledge the user needs in order to use the tent correctly on the same place and are divided under the headlines; *Fjällräven Dome tent, Find the right camping site, Pitch the tent, Sleep in the tent* and *Take down the tent*. The different segments are divided with lines to clearly communicate and separate the different steps of the usage. On the left side of the instructions, *Fjällräven Dome tent* and *Find the right camping* site

Figure 9.8
Placement of the instructions on the bag.

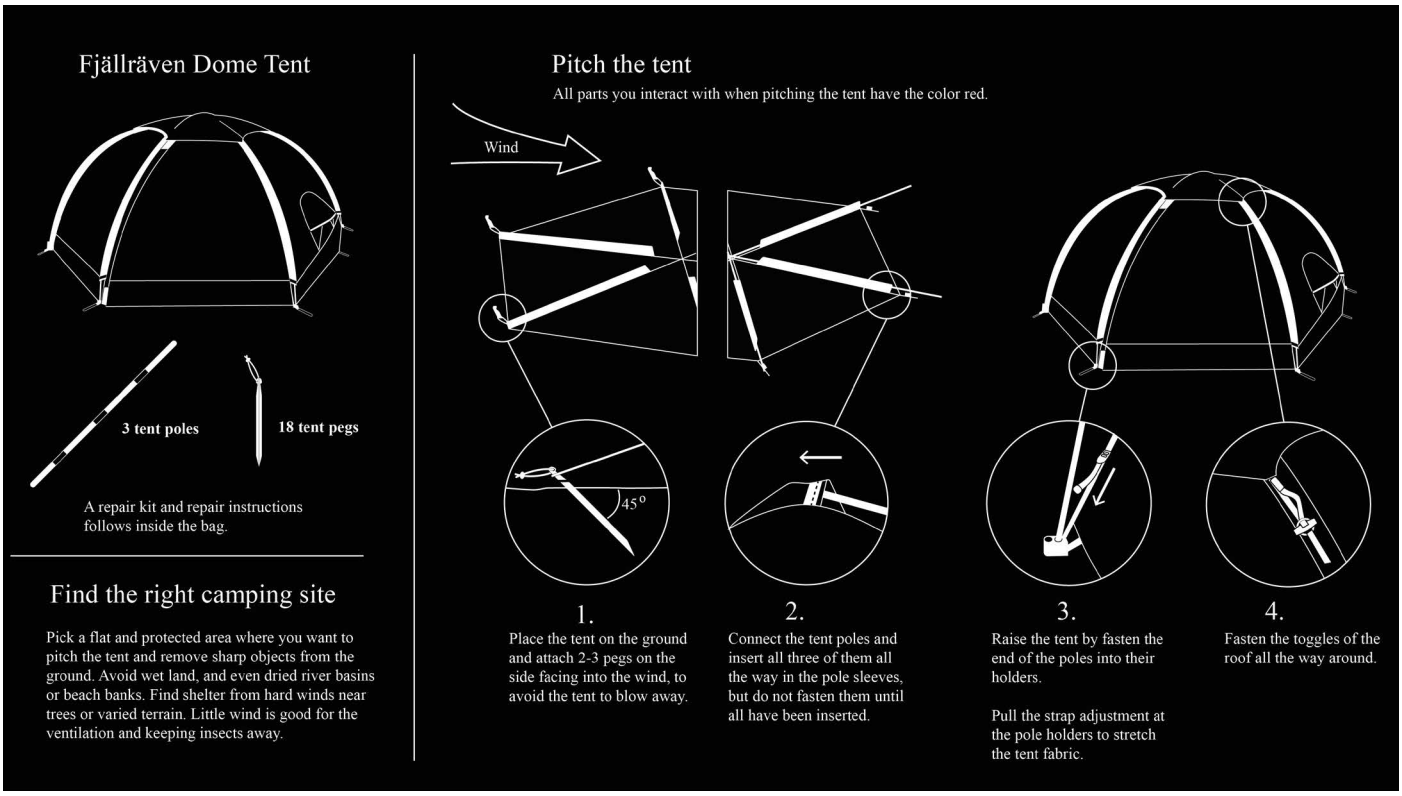

Figure 9.9
The left side of the instructions

can be found as this is information needed before pitching the tent. *Pitch the tent* is placed in the middle and takes up the biggest area as these instructions are the most important to follow correctly to not damage the tent and to give the user a positive experience. On the right side of the instructions, *Sleep in the tent* and *Take down* the tent are found, and present activities that need to be done after the tent has been pitched.

The instructions are general for all Fjällräven's dome tents as the construction and number of parts are the same for the four different dome tents. Under *Fjällräven Dome tent*, illustrations and information are presented of how the tent looks like and how many poles and pegs there are, figure 9.9. This makes it possible for the user to get an overview of the parts of the tent before pitching it. This part of the instructions also explains that additional instructions about repairing the tent are placed in the pocket inside the bag next to the repair kit. The repair instructions are needed only when a damage has occurred and not every time the tent is being used. For that reason, the repair instructions are more hidden. Under *Find the right camping site*, tips on what to consider when selecting a good spot to pitch the tent are presented.

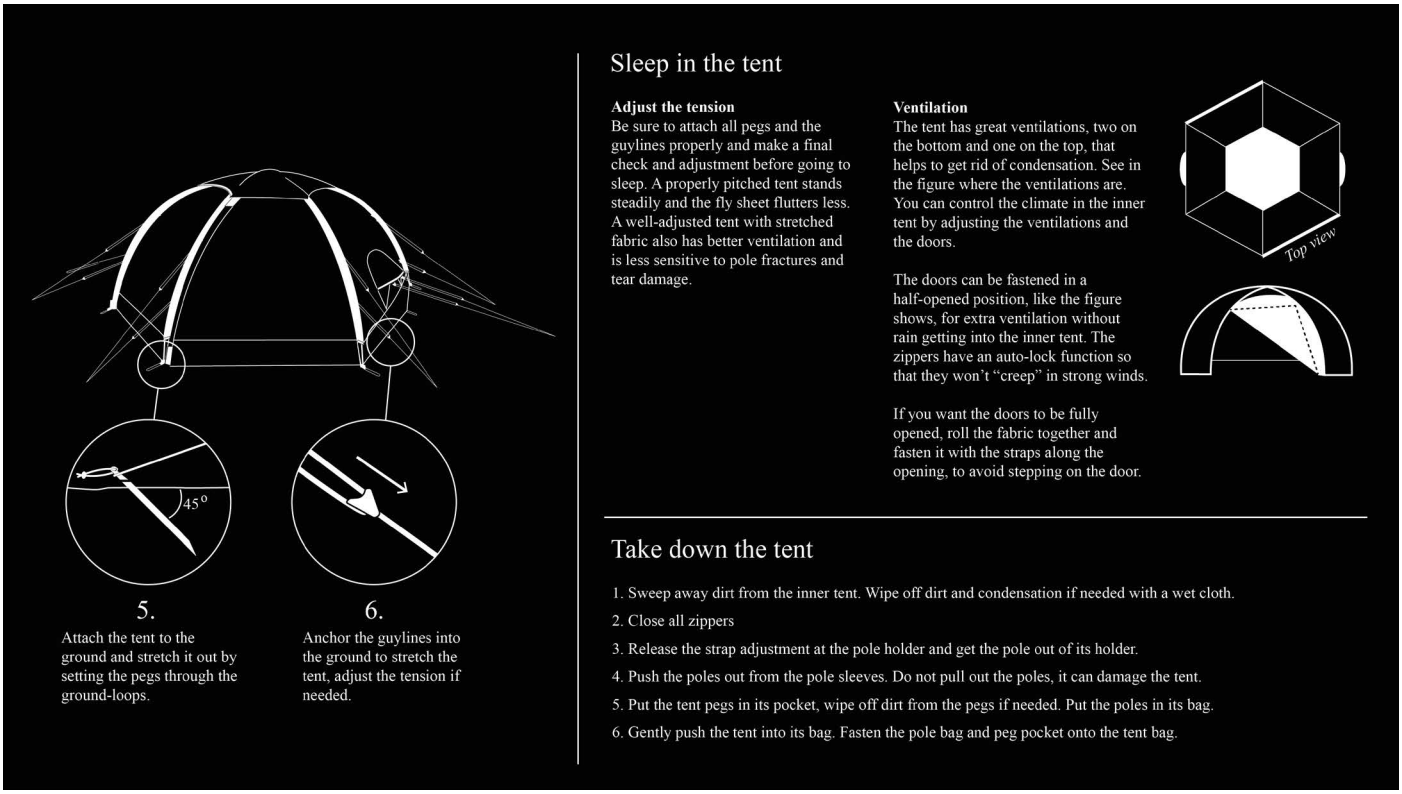

Figure 9.10
The right side of the instructions

Under *Pitch the tent*, guiding instructions of how to pitch the tent correctly can be found, figure 9.9 and 9.10. These instructions are presented step by step with illustrations and a short describing text, in total six steps. The different steps are presented from left to right to make it logical to follow. The pitching instructions take up about half of the space of all the instructions to be clearly visual and readable for the user. This makes it possible to see all the pitching instructions at the same time when stretching out the bag.

Information about the adjustment of the tent and ventilation is presented under *Sleep in the tent* as it is information needed in order to sleep comfortably in the tent, figure 9.10. Two illustrations show where the ventilation is positioned in the tent and how the tent looks like with the door is fastened in a half-opened position. Underneath are instructions on how to *Take down the tent*. As the procedure of taking down the tent basically is pitching the tent but in an opposite order, only text is used for the instructions. The instructions tell that the user should clean the inner tent before taking it down which makes the tent more pleasant for the next user.

When pitching the tent, all parts of the tent that the user interacts with have the color red, which is also explained in the instructions. The red parts, see figure 9.11, are the poles, the opening of the pole sleeves, the pole holder, the pegs, the guylines, the ground loops and the small ropes attached to the zippers and toggles. The color coding guides the user's attention and works as a helping cue when pitching the tent, figure 9.12. The color red was chosen as is it should go together with the different fabric colors of Fjällräven's tents, which are pine green, blue and sand. The poles, pegs and ropes are not manufactured by Fjällräven but can be ordered in the color red. The pole holder is made by Fjällräven and needs to be manufactured in red plastic instead of black.

Figure 9.11
The red colored parts of the tent

Figure 9.12
The red parts indicate the interaction points

Figure 9.13
The colored parts on the opening of the pole sleeve on top of the tent

The ropes underneath the tent, that holds the construction together, are colored black to clearly separate them from the guylines. The user should not interact with these ropes and they should therefore be more hidden and not mistaken to be the guylines. The openings of the pole sleeves on top of the tent, that indicates where the poles should continue across the tent, are not colored red, figure 9.13. They have the colors yellow, blue and silver instead to distinct them from the openings of the pole sleeves at the bottom of the tent. The red color at the bottom indicates where the pole should be inserted in the pole sleeve and the other colors on the top indicate where the pole should continue to the other side of the tent.

The buckle to the adjustment strap of the pole holder has a new position and changed direction, figure 9.14. The buckle is placed on the top of the webbing where it is attached to the tent and it is tightened by pulling down the strap. This makes it possible to fasten the pole to the pole holder without using great force as the webbing can be made longer. When the webbing is longer it is more important that the user tightens the strap to expand the flysheet properly. To communicate the importance of tightening the strap it s explained in the instructions as well as the end of the strap is colored red to indicate an interaction point. The changed position of the buckle is a cheap solution that does not need any major changes in the manufacturing process and does not change the function of the tent.

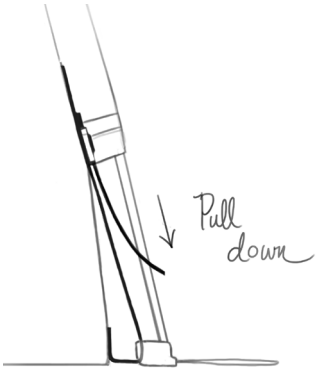

Figure 9.14
New position of the buckle to the adjustment strap of the pole holder.

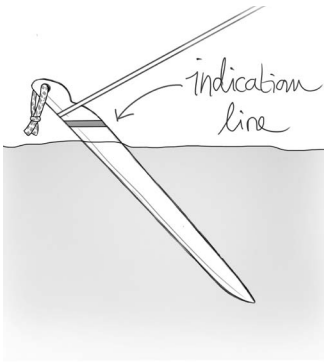

Figure 9.15
Indication line on the peg

To make it easier for the user to understand how the pegs should be placed in the ground they are marked with a line that is punched into the material, figure 9.15. The line is placed on top of the pegs and work as a hint of how the peg should be angled towards the ground. When the peg is placed in the correct angle the line is horizontal with the ground with the top of the peg pointing away from the tent. This is also communicated in the instructions with an illustration to make it more evident. This solution makes the user more confident of how to place the pegs.

9.1.4 Return the product

When returning the product the user needs to be sure that no parts have been lost during the hike. A new design of the case to the tent pegs makes it easier to know and ensure that all pegs are included, figure 9.16. The case has four bigger pockets, room for four pegs each, and a smaller more hidden pocket with room for two extra pegs. The top part of the case can be folded to cover the pegs and prevent them from falling out. The case is rolled together and closed with a cord and a movable plastic part to tighten the case. The case is placed, as mentioned before, on the outside of the tent bag and fastened with a buckle for easy access, as can be seen in figure 9.17. The case is made out of the same fabric as the tent pole bag and measures 250 millimeters wide and 300 millimeters high when unfolded, all measurements of the peg case can be seen in figure 9.18

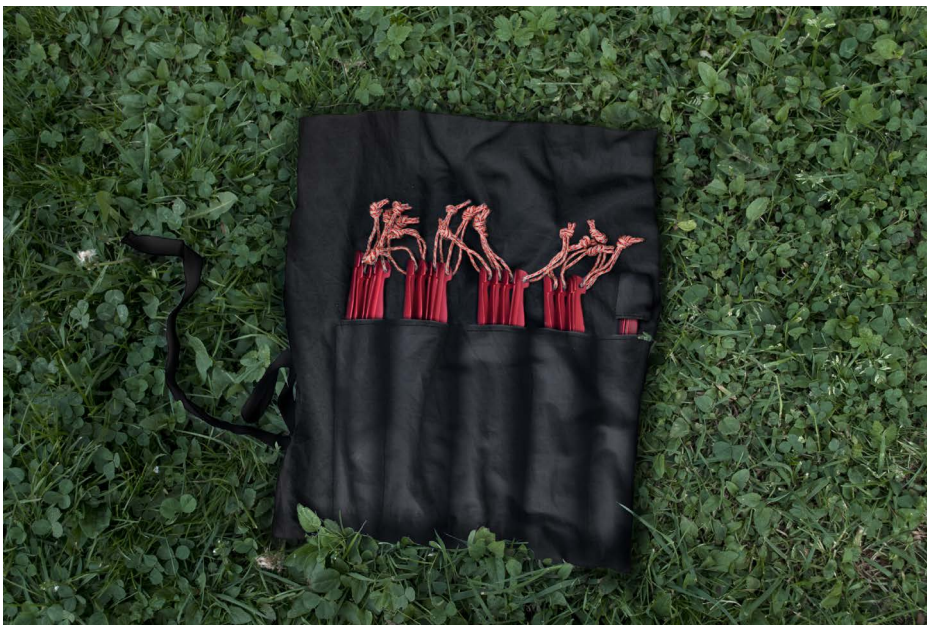

Figure 9.16
The peg case

Figure 9.17
Placement of the peg case outside of the tent bag.

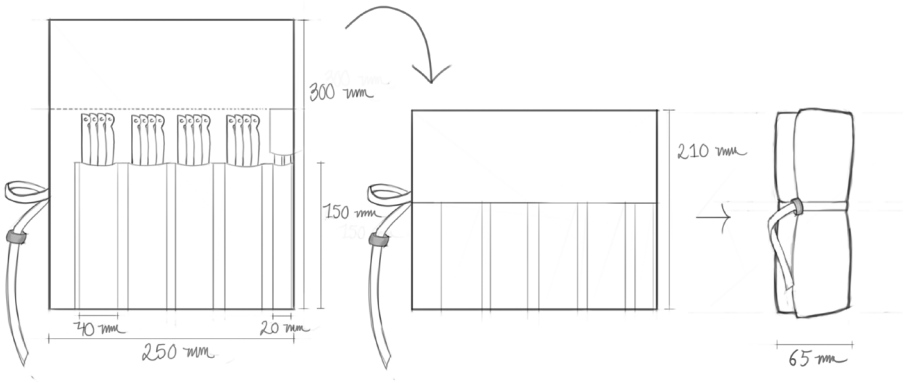

Figure 9.18
Measurements and closing sequence of the peg case.

The case makes it possible to ensure the number of pegs without counting them one by one, as it is easy to see if the pockets are full or if a peg is missing. This facilitates for both the provider and the user when controlling that no peg is missing, which is crucial both when renting and returning the tent. The peg case also makes it easier for the user to be sure that the right amount of pegs are being used when pitching the tent, which is all of them except the two extra in the hidden pocket.

Besides checking that no parts have been lost when returning, the user also needs to communicate the condition of the tent to the provider. If a damage or something else happened with the tent during use the provider needs to know that to be able to repair the tent before the next customer. The purpose of this is not to blame the customer for damaging the tent but to make sure the tent keeps its high quality for the next time it is being used. This open dialogue between the customer and provider is an important part of the control system, as mentioned above under Rent. This is also communicated on the website under “About renting” to make sure that the customer is honest about the condition of the tent.

PART

3

Evaluation of case study

This part of the report contains the evaluation of the case study. The aim of part 3 was to discuss the development of the design guidelines and evaluate if the guidelines support product development. At the end of the part, a final list of design guidelines for exchange is presented.

10. EVALUATION OF CASE STUDY

In this chapter the design guidelines are evaluated and verified with the case study and the final design guidelines for exchange are presented.

10.1 Discussion about the guidelines

In this chapter the design guidelines are evaluated and verified with the case study. The specific design guidelines for renting a tent are verified with the final concept and insights are given to the general design guidelines. The final concept was developed with the support from the design guidelines for renting tents (see chapter 7.3). All guidelines contributed to the different ideas during the ideation but only some of the guidelines led to the final concept. Further it is discussed how the general guidelines can contribute to product development that supports exchange of products.

Guideline one, *The service should be a preferable and trustful option to get access to tents*, contributes to the different service solutions. The sub guidelines about *communicating the advantages of the service* resulted in the idea where the tents are promoted with the information about their specific carbon footprint per night. This way of promoting a product through a renting service is something new and there's no service available that communicates this today. Another sub guideline that supported the ideation was to *gain access to the product with low effort* and it can be connected to the solution where the customer filter the information to find the best tent option. This solution does not require specific knowledge about tents from the user and the booking sequence is easy and require in general low effort. The final concept also follows the sub guideline that focus on *communicating responsibility* through the design of the page where the user can read about how the service works. The page is divided into smaller categories of information to avoid long and boring formalities which also follows the guideline that the user should be able to access the product with low effort. The quality control system in the final concept originated from the different sub guidelines about high quality; *Keep the product in a high quality over time* and *Make the user perceive the product as high quality*. The quality process is designed to keep the products in a high quality between users and it is communicated to the customer through the rent platform and when the customer pick up the product. This system also *makes the user perceive high control over the situation* and *trust to the service* which also are two sub guidelines to the first guideline.

The second guideline, *The service should provide information and knowledge about outdoor life and how to use a tent in the best way,* did contribute less to the final concept than the other guidelines.

Both the sub guidelines *offer other equipments* and *communicate information about outdoor life* was used during the ideation but the concepts were seen as less valuable than the other ones during the evaluation. The sub guidelines that focus on *give advice to improve the user's experience of the product* helped develop the solution where the user can scan the QR-code on the tent. This code can help the users experience an easier pitch of the tent through the pitching video available at the page connected to the code.

The third guideline, *The product should be easy to use in the intended way so it is possible for a first time user to use it without hesitation,* was useful in the ideation of the product and instruction solutions. The sub guideline that focused on that *the product should be easy to use by a first-time user* contributed to many concepts, for example the line on the pegs and the color coding. This sub guidelines ended up to be one of the most important one when developing product and instruction solutions. *To give right information when the user needs it* contributed to several instruction concepts and the final instructions solutions is an good example. The information in this concept is divided and presented in a logical order that follows the user journey when camping. Another sub guideline focus on that *the user should feel confident during the use* and in the ideation this have resulted in concepts where it should be more difficult to do wrong. This includes the different instruction concepts where the information that the user need are communicated very clear and also the color coding that should help the user to know where to interact with the tent.

The last guideline, number four, I*t should be possible to ensure and check the quality and status of the tent for both the user and the provider,* contributed to both product and service concepts, such as the peg case as well as the quality control system. The sub guideline that focused on to *ensure that the product is complete* contributed to the different peg case concepts. The final peg case solution makes it possible to see if some of the pegs are missing by the design of the pockets. This solution makes it easy for the user but also for the provider to control the number of pegs with less effort than before. Also to *ensure that no parts are missing and that the tent won't be damaged* was also used as a guideline when generating ideas about the instructions. If the users are informed with correct information the risk of damaging the tent is lower. The sub guideline that communicated that *it should be possible to reset the product between users* helped in the generating of ideas connected to both

instructions and the service. The service concept communicated clearly at the “about rent” page the responsibility that the user has connected to cleaning and reset the product to its original condition. Together with the service the final instruction concept also communicate clearly what responsibility the user has during the camping.

To summarize the insight from the design guidelines about renting tents and the case study there were especially some guidelines that contributed to more unique and successful ideas. Guidelines one, three and four were essential for the development of the final concept. These three guidelines are important for exchange of products but especially important for renting of products and could be implementable for other kinds of products. In renting the user loops are quite short, many of the customers are first time users and a product can have many different users during its lifetime. This puts high demands on the service and product. The service needs to feel trustful and preferable for the customers to choose renting over purchase and the service need to have a well functioning control system to be able to ensure products of high quality over time. The many different users make it important that the product is easy to use from the first time and that no parts will go missing. The second guideline did not contribute to the final concept as much as the others, as mentioned above. This guideline is very specific just for tents and for Fjällräven and is therefore not seen as specific for renting and not seen as implementable for general products.

When instead looking at the general guidelines that should support Design for Exchange of products, independent of the exchange path, the guidelines are a bit different. After executing and evaluating the design case the list of general guidelines (previously presented in chapter 4.3) was updated. See the updated list of guidelines in chapter 10.2. Some of the guidelines in the list have been reformulated, reorganized or added to make the list more comprehensible and supportive during product development. A new heading was added, *Provide a product that is easy to use*, to emphasize the importance of it. A product that is easy to use, preferable without the need of instructions, is easier to be used by many different users and thereby also easier to be exchanged. A complicated product needs special knowledge by the user or thorough instructions. Knowledge in the head can’t be passed along with the product to the next user and instructions are easily put in a box or drawer somewhere and hard to find again when it is time to get rid of the product. It is therefore better if the product itself is easy to understand.

Some of the guidelines can be more important than others, depending on the product and the exchange path. For a chair it might be important that it *age aesthetically* but not for a blender, while it is really important that the blender is hygienically *cleaned between users* but not as important for the chair. When it comes to exchange path it is of great importance that a leasing service *communicates the customer's responsibility* while it can be more important that a second hand shop *provides long lasting products*. For this reason it is hard to tell that all guidelines are applicable or equally good for all exchange paths and products but some of the guidelines can be seen as more crucial to consider when designing for exchange. For example it is very important that *the product is intact between the user loops*, a broken product quickly loses its value and functions. For that reason it is also important to *be able to control and ensure the condition of the product between the users.* Another important guideline is that *the product is designed to be long lasting* in combination that it is *easy to use* or that it *communicates how it should be used correctly*. This is to ensure that the product can be used in the intended way over a long period of time.

10.2 Final design guidelines for exchange

The guidelines are applicable for all types of products that have potential to be exchanged and all different exchange paths. The list consists of six main guidelines that each has several sub guidelines. They should be used in the ideation phase of a project and help the designer to design for exchange. It is possible to generate ideas from each one of the sub guidelines or only use the main guidelines as inspiration.

Design guidelines for exchange

Provide an intact product during the exchange

- Make it easy to ensure that the product is complete between users
- Make it easy to ensure that the product is in good condition between users
- Design to avoid parts disappearing or being forgotten during use and between users
- Design the product to avoid unintentional damage during use
- Create perceived belonging of the product to make the user take better care of it

Provide a clean product during the exchange

- Enable and facilitate cleaning of the product between users
- Make it easy to control if the product is clean between users
- Communicate how the product should be cleaned correctly

Provide a long lasting product

- Design with durable materials
- Use aesthetically aging materials
- Use classic form and colors that last over time
- Enable upgrades of product functions
- Use exchangeable and standard components

Provide a product that is easy to use

- Make the product easy to use
- Communicate how the product should be used correctly
- Give right information when the user needs it

Provide a preferable exchange system

- Minimize the effort and time needed to obtain or get rid of a product
- Communicate the advantages of the system

Provide a reliable exchange system

- Communicate terms and conditions easy and effortlessly
- Communicate the user's responsibility
- Make the user perceive high control over the situation
- Make the user trust the system

11. DISCUSSION

The project result is analyzed and the discussion is divided into two parts. First the discussion of the project process with the focus on developing design guidelines and later the discussion of the design case.

Development of guidelines

The aim of the thesis was to gain a better understanding of product design regarding exchange and the final outcome, the design guidelines, fulfills the aim by supporting a designer in the creative process. The design guidelines should be used in the ideation phase of a project to be able to develop solutions with a great exchange potential. The project process and the methods chosen have affected the outcome of the guidelines and the chosen design case has especially made a big impact on the result. The first version of the guidelines resulted from the general data collection but the final version was mainly developed from the insights of the design case. If the case focused on another product and exchange path the data collection may have given other insights that would have affected the guidelines. To be able to verify the final result the guidelines needs to be used in other design cases with a focus on other products and exchange paths and that would probably result in changes and refinement of the guidelines. The design guidelines were also only used during ideation by the authors of this thesis and for further verification, other designers need to use them during the ideation phase. Even if improvements and further work are suggested the final design guidelines are seen to be useful to support product design that will support exchange.

When comparing the developed design guidelines for exchange with design guidelines found in literature, presented in chapter 2.3, it is possible to find both similarities and differences. The developed guidelines include the focus on providing a long lasting product which is similar to the existing guidelines. They address this by communicating the importance of maintenance, repair, adaptability, standardization, and disassembly. The design strategies found in literature have the main focus to extend the product lifetime and improve how the loops are closed but don't address the issue of how to extend the product life by creating tighter user loops. The developed design guidelines address this by communicating the importance of ensuring that the product is complete, in good condition and clean between user loops. They also differ from the existing ones by communicating the importance of that the product is easy to use and easy to obtain. How the user

obtains the product and how the exchange system is designed will affect how likely the user will experience it to be preferable which is not discussed in the existing design guidelines for product circularity.

The design case

The aim of the design case was to test and improve the guidelines and the structure of the project affected the detail level of the final concept. The project process was divided into three different phases with different focuses and this resulted in a limited time for each phase. The phase with the design case required new data collection and might be considered as insufficient for an entire product development project but was useful enough to give insight for the case study. As an example, it would have been beneficial if it was possible to pitch the tent outdoors instead of indoors and that more users participated in the test. The concepts from the first ideation phase were very conceptual and only visualized on sketches and were evaluated after criteria and this could have affected the result. If the concepts were further developed, prototyped and tested a more valid evaluation could have been conducted.

For further development of the final concept, a more extensive evaluation needs to be conducted in order to confirm that the re-design supports exchange. The concept evaluation that was made only indicated that the solutions will affect the intended user in a positive way, but for further development, an evaluation to compare the re-designed and the original tent would be beneficial. Next step could also include implementing and adapting the design solutions to the other tents in Fjällrävens product assortment. A pilot test should be made in order to evaluate the service and identify what needs to be done in order to implement the service on a bigger scale.

The final concept would be seen preferable for users that want to gain access to a tent instead of owning it or the ones that seldom will use a tent. This user group will get access to a product with high quality and functionality and at the same time affect the environment less than buying a new one. By renting a tent instead of buying a low-quality tent that only will be used one time will save unnecessary wasted resources. The final concept will probably not be as preferable for the experienced tent users where owning is seen as the only option. If the experienced users use the tent designed for renting they will probably experience it to be pleasant because it will make the usage easier for all users. Finally, the solution is a step towards a more circular consumption as it contributes to higher utilization of the products, but further improvement can, of course, be made on the whole tent's lifecycle.

12. CONCLUSION

During the project a better understanding of how to design products for exchange was gained with user research that resulted in development of design guidelines. The guidelines were applied to and evaluated with a design case.

The pre-study showed that the majority of the people today choose to buy new products instead of choosing an alternative consumption path, due to convenience and lack of knowledge of how to obtain products in other ways than buying. Both the service of obtaining products and the product itself have potential to be designed to facilitate exchange of products. Common characteristics of products that have potential to be exchanged are for instance that the product is expensive to buy new, has high quality, seldom used and not considered to be too personal. An example of a product like this is a tent.

During the design case, the tent Keb Dome 2 from Fjällräven was investigated and renting was considered to be a suitable consumption path of the tent. Both problems with the tent, like misleading instructions, and the service, in the shape of unwanted activities, were found. An example of unwanted activity was that the user might lack knowledge of how to use the product but don't want to be forced to read long and boring instructions. The final concept involved improvements for the whole customer journey of renting a tent to make it possible for a first time user to find a suitable tent, rent it, use it and return it with a confident feeling. The concept included a webpage that made it easy to find the tent, a control system to retain high quality of the products over time, instructions of how to use the tent correctly, color codes on the tent to guide the user, a peg case that makes it easy to ensure that no part is missing, an indication line on the tent pegs and a new design of the pole holder.

The design guidelines, which were developed in the project, were used during the ideation and contributed to the final concept. The guidelines includes important aspects of both the product and the service to consider when designing for exchange of products with a user perspective. Especially important aspects are that the product is intact between user loops, the condition of the product is easy to control and the product is easy to use. In the final version, six main guidelines with several sub guidelines were proposed that should be used in the ideation phase of product development and help designers to design for exchange.

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APPENDIX

I. Guidelines from workshop material, Use2Use

DESIGNGUIDELINES
- STÖD FÖR ATT UTVECKLA MOT KUNDBEHOV
DESIGNA PRODUKTEN FÖR ATT BIBEHÅLLA SIN FUNKTION & ATTRAKTIVITET FÖR FLERA KUNDER ÖVER TID

DESIGNA FÖR BIBEHÅLLEN TEKNISK FUNKTION:

1
"Jag är säker att produkten kommer att hålla när jag använder den"

- Minimera antalet komponenter
- Säkerställ en robust konstruktion
- Minska komplexitet

2
"Jag vet att produktens prestanda kommer att vara god när jag använder den"

- Möjliggör underhåll och reparation
- Möjliggör uppgradering
- Möjliggör utbyte av komponenter vars prestanda försämras över tid

3
"Jag litar på att produkten är kompatibel med andra produkter och system när jag använder den"

- Använd standardkomponenter och kopplingar
- Gör komponenter där det sker snabb teknikutveckling enkelt utbytbara

4
"Jag är förvissad om att produkten kommer att vara komplett när jag använder den"

- Minimera antalet komponenter
- Minimera antalet lösa komponenter
- Gör det lätt att ersätta komponenter

DESIGNA FÖR BIBEHÅLLEN ATTRAKTIVITET:

5
"Jag vet att produktens estetiska skick kommer att vara bra när jag använder den"

- Använd främst material som inte behöver ytbehandlas
- Använd ytbehandlingar som inte ger ett slitet utseende snabbt
- Trigga användarens vilja att ta hand om produkten genom att skapa känslomässigt band
- Använd material som blir attraktivare med ålder
- Designa för slitning och låt slitningen skapa ny estetisk upplevelse
- Använd material som slits långsamt
- Lägg till extra material på ställen eller delar som slits mycket
- Gör delar som slits snabbt lätta att byta ut

6
"Jag är säker att produktens estetik är tillfredsställande (trendmässigt) när jag använder den"

- Sträva efter tidlös design, använd klassiska material, linjer och proportioner
- Tillåt personifiering

7
"Jag är förvissad om att produkten är hygienisk när jag använder den"

- Använd material som inte absorberar smuts eller vätska
- Undvik springor och hål för att förhindra smutsansamlingar
- Underlätta rengöring

8
"Jag upplever påfyllning eller utbyte av förbrukningsmaterial som tydligt och enkelt"

- Gör det tydligt och enkelt att fylla på förbrukningsmaterial, och lätt att inse när det är nödvändigt

DESIGNA FÖR ATT FLERA KUNDER SKA KUNNA NYTTJA PRODUKTEN:

9
"Jag är förvissad om att produkten kan anpassas efter mina eller andras behov"

- Gör produkten anpassningsbar så den kan användas av flera människor
- Gör produkten enkel att komma igång med
- Sträva efter en neutral design

10
"Jag är inte orolig över att produkten bär oönskade spår från tidigare användare, eller att jag lämnar sådana efter mig"

- Tillhandahåll möjligheten att enkelt och permanent radera personlig information
- Möjliggör att produkten kan bära med sig viss historik från tidigare användare/ användning
- Möjliggör att värde adderas genom varje användare

11
"Jag upplever att det både är lätt att få tillgång till produkten, och att avyttra den så att någon annan kan nyttja den efter mig"

- Minimera storlek på produkt och förpackning
- Gör produkten enkel att frakta och/eller bära med sig
- Gör förpackningen återanvändningsbar och "sparbar"
- Trigga användarens vilja att andra nyttjar produkten när hens behov upphört

II. Survey questions

Köpa, byta, låna, ge, få eller dela?

Kollaborativ ekonomi handlar om samarbete och förespråkar tillgång av produkter framför ägande och syftar till att byta, låna, ge, få och dela. Vi vill ta del av dina tankar och åsikter kring kollaborativ ekonomi och skulle vara tacksamma om du vill svara på denna enkät.

Vi studerar Teknisk Design på Chalmers och denna enkät är en del av vårt exjobb som handlar om att anpassa en produkt för att främja delat ägande.

Tack!
/Elin och Lisa

Kön?
Kvinna
Man
Annat

Ålder?
< 25 år
25 - 35 år
36 - 45 år
> 45 år

Införskaffa/få tillgång till nya produkter

Nedanstående frågor syftar till produkter/prylar du äger och/eller använder idag. Exempel är hushållsprodukter (ej förbrukningsvaror), transportmedel och teknikprodukter.

1. Hur får du vanligtvis tillgång till nya produkter? Ranka de tre vanligaste sätten, där 1 är allra vanligast.

- Köpa nytt
- Köpa begagnat
- Få av andra
- Hyra av andra/företag
- Låna av andra
- Byta
- Dela ägande med någon

2. Skulle du vilja ändra hur du konsumerar? Vilken av de nedanstående sätten skulle du vilja göra mer av?

- Köpa nytt
- Köpa begagnat
- Få av andra
- Hyra av andra/företag
- Låna av andra
- Byta
- Dela ägande med någon
- Inget av alternativen

3. Vad är anledningen till att du inte gör detta idag? Utgå ifrån ditt svar på fråga 2.

Att äga produkter

4. Äger du produkter där du anser att själva ägandet är problematiskt? Flera alternativ är möjligt.

- Skor/kläder
- Sport-/fritidsutrustning
- Hem och hushållsprodukter
- Verktyg/trädgårdsredskap
- Transportmedel, bil/cykel/båt
- Teknikprodukter
- Heminredning
- Jag anser inte att det är problematiskt att äga produkter
- Annat…

5. Varför upplever du detta? Flera val är möjliga

- Svår att förvara
- Krävande skötsel/underhåll
- Dyr i drift
- Använder produkten aldrig/sällan
- Ömtålig/rädd att den går sönder
- Jag anser inte att det är problematiskt att äga produkter
- Annat…

6. Specificera gärna vilken/vilka produkter du tänker på.

7. Finns det produkter du skulle vilja ha tillgång till som du inte äger idag och inte vill äga, i så fall vad?

8. Anser du att du äger för många produkter?
- Ja
- Nej

9. Kan du tänka dig att dela/hyra ut/låna ut de produkter du äger med/till någon annan?
- Ja
- Nej
- Kanske

10. Motivera ditt svar på fråga 9

Göra sig av med produkter

11. Vad gör du med produkter du inte längre vill äga? Ranka de tre vanligaste sätten där 1 är vanligast.
- Återvinner
- Slänger
- Förvarar hemma
- Ge bort till familj/vänner
- Skänker bort
- Säljer via en tjänst
- Säljer privat

12. Vad prioriterar du främst när du ska göra dig av med en produkt?
- Det ska gå snabbt och effektivt
- Det ska vara miljövänligt
- Jag vill tjäna pengar
- Att någon annan ska kunna använda den
- Bidra till välgörenhet
- Jag vill inte göra något jobb själv
- Annat…

Tack för din medverkan!

Om du har några ytterligare tankar eller idéer om att köpa, byta, låna, få eller dela produkter får du gärna skriva dessa här:

III. Interview template

Intro
Denna intervju är till vårt examensarbete som är en del av ett forskningsprojekt som kolla på hur produktdesign kan bidra till hållbar konsumtion.

Vi kommer ställa ett antal frågor som handlar om användandet av tält och du får svara på dem så gott du kan. Är det en fråga du inte vill svara på så måste du inte det och det är tillåtet att avsluta intervjun när du vill. Dina svar kommer vara anonyma.

Om det är okej för dig kommer intervjun att spelas in och det är bara vi som kommer att lyssna på det. Är det okej?

Allmänna frågor
- Namn? Ålder?
- Sysselsättning?
- Hur bor du? Hur många som bor i hemmet?

Allmänna frågor om tältande
- Brukar du tälta? Hur ofta? Var? Hur länge?
- Skulle du vilja tälta oftare? Varför gör du inte det?
- Positivt/negativt med att tälta?
- Några moment som är ansträngande/jobbiga med att tälta? Varför?

Ägande av tält
- Äger du ett tält?
- Märke, modell, storlek? när det köptes och varför just detta valdes?
- Är du nöjd med valet av tält, något du tycker fattas?
- Hur ofta använder du det? Till vilka ändamål?
- Är det någon del i själv användningen som är jobbig/svår? Vad? Varför?
- Underhåller du ditt tält, i så fall vad gör du? Hur ofta?
- Hur viktigt är det att tältet blir rent mellan användningarna?
- Hur vet du om tältet är helt och komplett (inga delar saknas)? Vad gör du om något är sönder/saknas?
- Hur förvarar du ditt tält?
- Skulle du kunna tänka dig att låna eller hyra ut ditt eget tält när du själv inte använder det? Varför/varför inte? Till vem kan du tänka dig att hyra/låna ut till?

Ägt tält tidigare

- Har du ägt ett tält tidigare som du gjort dig av med? Vad var det för tält?
- Varför gjorde du dig av med det? På vilket sätt gjorde du dig av med det? Varför det sättet?

Äger inte tält, brukar tälta?

- Skulle du vilja äga ett tält? Varför?
- Hur har du fått tillgång till tält? Hur har det fungerat? Kan du tänka dig att göra det igen?
- Upplevde du något begränsningar att använda ett tält som du inte ägde? Varför?
- Kontrollerar du att tältet är helt och rent innan och efter användning? Hur?

Äger inte tält, brukar inte tälta?

- Skulle du vilja äga ett tält?
- Om nej, hur tänker du att du skulle få tillgång till tält?
- Tror du att du hade upplevt några begränsningar om du hade lånat tält?

Inställning till att dela/låna/hyra

- Skulle du kunna tänka dig att hyra/låna/dela ett tält istället för att äga? Varför/varför inte? har du gjort detta?
- Vad skulle du inspektera om du skulle använda ett tält du vet att någon annan använt tidigare? Varför?
- Vad ser du för möjligheter med att hyra/låna/dela tält?
- Var ser du för hinder med att hyra/låna/dela tält?
- Ser du ett specifikt sätt som känns mer fördelaktigt än de andra? varför?

Äger för mycket?

- Anser du att du äger för mycket saker generellt som du sällan eller aldrig använder? Ge exempel på en sådan produkt.
- Tycker du det är viktigt att äga produkter? Varför?

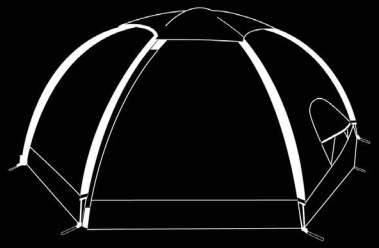
Önsketält

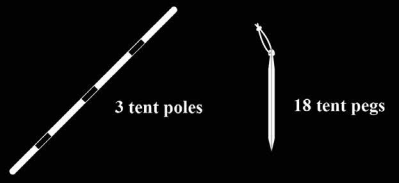
- Om du får fantisera helt fritt, hur skulle ditt drömtält se ut? Varför?

Det var alla våra frågor, skulle du vilja tillägga något som du tycker att vi missat att ta upp?

IV. New instructions

Fjällräven Dome Tent





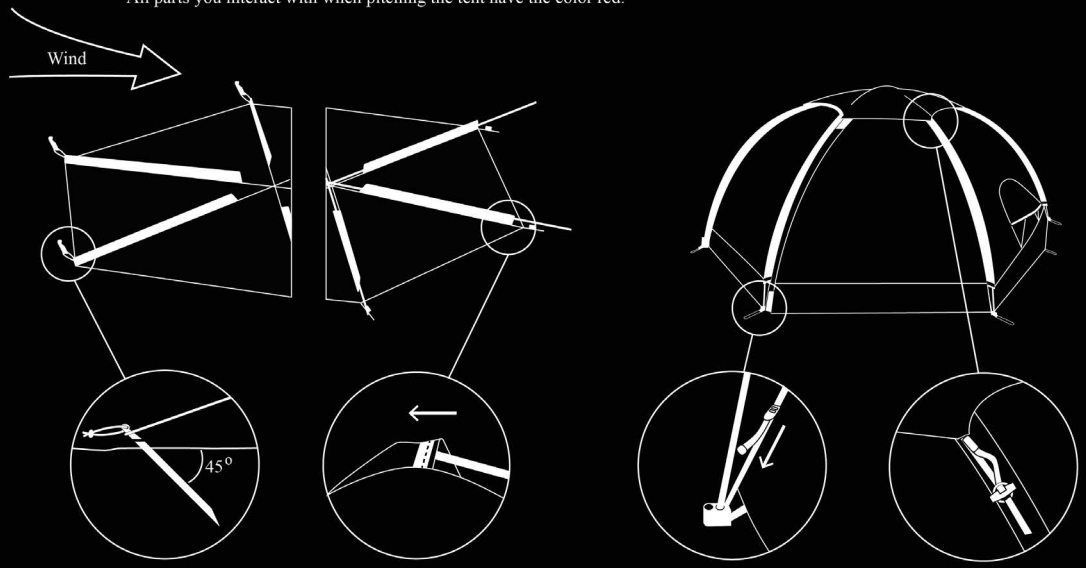
A repair kit and repair instructions follows inside the bag.

Find the right camping site

Pick a flat and protected area where you want to pitch the tent and remove sharp objects from the ground. Avoid wet land, and even dried river basins or beach banks. Find shelter from hard winds near trees or varied terrain. Little wind is good for the ventilation and keeping insects away.

Pitch the tent

All parts you interact with when pitching the tent have the color red.



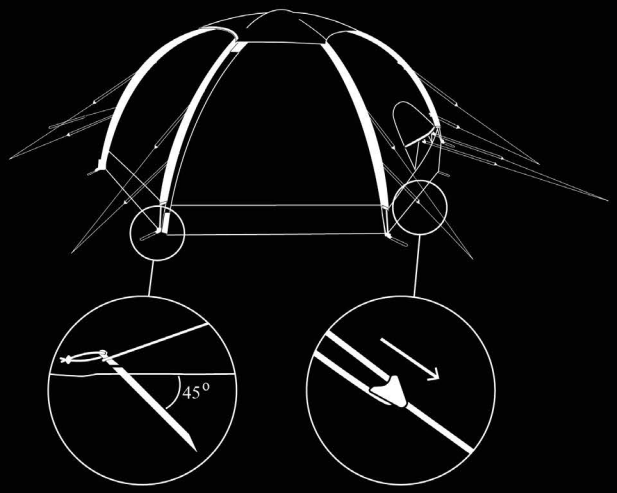
1. Place the tent on the ground and attach 2-3 pegs on the side facing into the wind, to avoid the tent to blow away.

2. Connect the tent poles and insert all three of them all the way in the pole sleeves, but do not fasten them until all have been inserted.

3. Raise the tent by fasten the end of the poles into their holders.

   Pull the strap adjustment at the pole holders to stretch the tent fabric.

4. Fasten the toggles of the roof all the way around.



5.

Attach the tent to the ground and stretch it out by setting the pegs through the ground-loops.

6.

Anchor the guylines into the ground to stretch the tent, adjust the tension if needed.

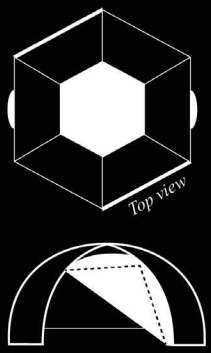
Sleep in the tent

Adjust the tension
Be sure to attach all pegs and the guylines properly and make a final check and adjustment before going to sleep. A properly pitched tent stands steadily and the fly sheet flutters less. A well-adjusted tent with stretched fabric also has better ventilation and is less sensitive to pole fractures and tear damage.

Ventilation
The tent has great ventilations, two on the bottom and one on the top, that helps to get rid of condensation. See in the figure where the ventilations are. You can control the climate in the inner tent by adjusting the ventilations and the doors.

The doors can be fastened in a half-opened position, like the figure shows, for extra ventilation without rain getting into the inner tent. The zippers have an auto-lock function so that they won't "creep" in strong winds.

If you want the doors to be fully opened, roll the fabric together and fasten it with the straps along the opening, to avoid stepping on the door.



Take down the tent

1. Sweep away dirt from the inner tent. Wipe off dirt and condensation if needed with a wet cloth.
2. Close all zippers
3. Release the strap adjustment at the pole holder and get the pole out of its holder.
4. Push the poles out from the pole sleeves. Do not pull out the poles, it can damage the tent.
5. Put the tent pegs in its pocket, wipe off dirt from the pegs if needed. Put the poles in its bag.
6. Gently push the tent into its bag. Fasten the pole bag and peg pocket onto the tent bag.