Aalto University
School of Science
Degree Programme in Computer Science and Engineering

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Describing shopping experience with customer journey maps for digital service design

Master's Thesis
Espoo, September 12, 2013

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ABSTRACT OF
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Background: With increasing competition in retail environment, customer retailer loyalty becomes a critical objective for retailers. Results of former study show that a satisfactory shopping experience could enhance customers' cumulative or overall satisfaction and ultimately customer retailer loyalty. As more and more people use smartphone, shopping experience could possibly be improved with different forms of innovative retail mobility solutions that put a wealth of information at customers' fingertips. To support creating innovative mobility solutions for improving shopping experience, this thesis starts from studying customers' current shopping experience with retail services in Finland and China.

Methods and Data: The empirical part of this thesis used design probe, mobile probe, semi-structured interviews and photo-elicitation to collect data for answering research questions. 6 Finnish participants and 6 Chinese participants were studied in this research. In total, 12 filled probes were collected and 10 interviews were conducted.

Results: As a result, four customer journey maps were created to visually illustrate shopping experience of two personas. There are three types of important shopping related touch-points: physical, digital & intangible, and people-based. Interactions around important touch-points should be well designed to fit customers' needs. Customers' emotional states are relatively active while searching for and comparing products. Currently, customers use mobile more often to assist shopping rather than purchasing directly through mobile. The most common shopping activities with mobile are to compare price and search for product information. Nevertheless, several opportunities to improve current shopping experience with creative mobility solutions were identified, such as mobile inspiration of shopping and decision-making assistant. In future, the work could be continued with the focus on studying more customer groups and, eventually, contributing to create innovative mobility solutions.

Keywords:	customer journey map, shopping experience, service design, customer loyalty, design probe, interview
Language:	English

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Yi Wang

Abbreviations and Acronyms

ATM	Automatic Teller Machine
CRM	Customer Relationship Management
HCI	Human-computer Interaction
IHIP	Intangibility, Heterogeneity, Inseparability and Perishability
IMC	Integrated Marketing Communication
LAMP	Linux operating system, Apache HTTP server, MySQL, and PHP
MOFS-2	Mobile Financial Services - Second Phase
NFC	Near Field Communication
TEKES	Finnish Funding Agency for Technology and Innovation
QR Code	Quick Response Code
SME	Small and medium enterprises
SMS	Short Message Service
SOW	Share-of-Wallet
STRATUS	Strategic Usability Group of Aalto University
URL	Uniform Resource Locator
UX	User Experience

Contents

Chapter 1

Introduction

1.1 Background

Shopping is one of the most common activities in people's daily lives. It involves different forms of financial services, such as payment and banking. Nowadays, customers have more shopping options than ever before - from local department stores to supermarkets and 24/7 online market places. The increase in shopping options results in an increase in competition among retailers and customer expectations. To succeed in the increasingly competitive retail environment, customer retailer loyalty becomes a critical objective for retailers of all types (Wallace et al., 2004). Many researchers believe that loyalty programs really create loyalty and value. Some assert that loyalty program participants not only visit the retailer more often (Meyer-Waarden, 2008; Drèze and Hoch, 1998), but also purchase more than other types of participants (Drèze and Hoch, 1998). Echoing these two findings, subsequent researchers found out that loyal customers are more profitable to company (Reichheld and Teal, 2001).

Results of former study show that a satisfactory shopping experience could enhance customers' cumulative or overall satisfaction and ultimately customer retailer loyalty (Terblanche and Boshoff, 2006). With an increasingly wide adoption of smartphones, shopping experience could possibly be improved with different forms of innovative retail mobility solutions that put a wealth of information at customers' fingertips. The research done by Google Shopper Marketing Agency Council show that smartphone is changing the retail landscape in a way of assisting consumers to research, compare and purchase both online and in stores (Research Study, 2013).

Several previous studies have evaluated shopping experience in different test settings against separate attributes or variables. However, no or limited studies have focused shopping experience as a whole journey from customers' perspectives. In particular, overall shopping experience as a series of interactions, needs and emotional states was overlooked in previous research. Therefore, this study is designed to figure out customers' current shopping experience with retail services and reveal how each interaction impacts their emotional states. The customers focused in this study are young people from Finland and China.

This thesis is a part of the second phase Mobile Financial Services (MOFS) research and development project which studies the possibilities and opportunities of using mobile technology in dealing with different financial issues, such as payment, ticketing, banking, etc. The objective of this project is to promote a mobile "wallet" which replaces or complements traditional wallets. This project involves several industrial and academic collaborators: Nordea, Tieto, Nokia, Aalto University and VTT Technical Research Centre of Finland. The whole project is funded partly by participating companies or institutions and partly by TEKES.

Between 2008 and 2010, the first phase of MOFS project studied several issues, such as mobile banking, mobile ticketing, authentication and related regulation. The work of the second phase is based on previous knowledge and expertise. In total, there are one research task and four industry tasks involved in the MOFS-2. The research task is to integrate appropriate user-centred research methods into developing new services in mobile context. Special attention was planned to evaluate user experience (UX) from users' perspectives. This task is responsible by Aalto University School of Science and VTT Technical Research Centre of Finland. Besides, research and evaluation on services outside Finnish markets are also welcome in this study. The four industry tasks are related to easy mobile payments, easy access to the services, mobile finance ecosystems and notification on SME services, respectively. Each task is responsible by one participating company or institution.

1.2 Research Goals and Questions

The goal of this research is not to innovate new service concepts of shopping in mobile context. Instead, the primary goal of this research is to study what shopping experiences customers have with currently available retail services.

In further, it aims at discovering new opportunities to improve shopping experience by innovative mobility solutions. From the aspects of methodology, the secondary goal is to understand the usage of customer journey map in supporting service design. The scope of this study is strictly kept in shopping experience from customers' perspectives. Other factors, such as technology and legislation, are not considered in this study. Based on the research goals, the following research questions are generated to guide the study:

Rq1: What shopping experience do customers have with currently available retail services?

To help answer the first research question, customer journey map (Temkin et al., 2010; Flom, 2011) was chosen as the service design tool to map user experience of currently available retail services. This study focuses on three types of shopping: big purchase, shopping with loyalty card and online shopping. As a customer journey map includes different elements and parts, the following sub-questions are used to help generate answers for each part:

- What are the general phases of shopping?
- What activities do customers usually perform in each phase of shopping?
- Which touch-points are important in affecting customers' shopping experiences?
- What are customers' inner activities in shopping?
- How does customer's experience change in the whole shopping journey?

In order to properly provide answers to the questions, it is necessary to explain several definitions, such as shopping experience, customer journey map and touch-points. These definitions are explained in Chapter 2. Literature review.

Rq2: How could mobile be used to enhance customers' shopping experience?

The second question is closely related to the first one since the answer of the second question is based on the findings from the first one. The following sub-questions will assist answer the second high-level question:

- How do customers currently use mobile for shopping in the context of retail services?
- What are the opportunities to use mobile to improve shopping experience?

Rq3: What is the value of customer journey map in service design?

The third research question addresses the aspects of methodology. As a service design tool, customer journey map is the key part of this thesis. Thus, it is especially necessary to understand what role customer journey map plays in service design.

- In which phase of service design could customer journey maps be used?
- What information could customer journey maps contribute to service design?

1.3 Structure of the Thesis

This thesis broadly includes two parts, literature review and empirical research. The literature review in Chapter 2 presents the background knowledge for understanding user experience and related research of user experience in shopping. It also introduces definition, fields and characteristics of services and the way to design a service. At the end of this chapter, information about customer loyalty and loyalty programs are presented.

Chapter 3 introduces the research methodologies used in this study, namely design probe, mobile probe, semi-structured interview and photo-elicitation. The first two methods are used in the probing phase to collect raw data while the other ones are used in the interview phase to elaborate and complement

data collected in the first phase.

Chapter 4 starts the empirical part of this thesis. This chapter contains the process and context of collecting data by the research methodologies introduced in the previous chapter. The studied participants are 6 young Finnish living in the capital area of Finland and 6 young Chinese living in China.

Chapter 5 presents the results from design probes and interviews. These results contribute to create two personas and several customer journey maps. One of the personas represents the Finnish group while the other one represents the Chinese group. Besides, the possibilities for improving shopping experience by mobility solutions are also listed and described.

Chapter 6 presents the limit of this research and suggest the possible future research directions. Chapter 7 summarizes the results of this study and provides answers for the initial three research questions.

Chapter 2

Literature Review

This chapter presents the theoretical foundation for understanding concepts appeared in this study. This chapter includes four main topics: 1) user experience, 2) services, 3) service design, and 4) customer loyalty and loyalty programs. It begins with introducing the concept of user experience. Afterwards, it describes the definition, characteristics and related fields of services. The subsequent part introduces service design and related principles, processes, and tools. At last, customer loyalty and loyalty programs are presented.

2.1 User Experience

In the past decade, "user experience" (UX) became a buzzword in the domain of human-computer interaction (HCI). It appears from online publications to live presentations. It is mentioned not only by business practitioners, but also by designers and academic researchers. This term is created to describe the holistic user interaction with information technology products and services (Korhonen et al., 2010). Though UX has not been clearly defined, this term is related to various meanings (Forlizzi and Battarbee, 2004), ranging from traditional usability to emotion, human factors, ergonomics and other experiential aspects. Nowadays, there is a conceptual shift from task-oriented and cognitive usability to emotional and hedonistic aspects (Jumisko-Pyykkö, et al., 2008). Studying and understanding user experience will result in improving lives of people who use products and systems (Forlizzi and Battarbee, 2004). Consequently, user satisfaction can be positively impacted through improving the quality of system.

Affected by Hassenzahl and Tractinsky's (2006) definition of UX and Roto's

(2006) extensive model for UX in mobile browsing, Jumisko-Pyykkö et al. (2008) pointed out that there are three main factors of UX: user, system and context. User is the person who uses the system. He or she has expectation, motivation, needs, previous experience and other resources and mental activities (Roto, 2006). System is required for the product under discussion to work. For instance, mobile is the required system for mobile applications to work. Context is the circumstances under which various activities take place. It covers different factors, such as the apparent features of situation, the available time for a task, the influence from other people present, and the possible task interruptions (Roto, 2006).

2.1.1 Facets of User Experience

Based on their research, Hassenzahl and Tractinsky (2006) pointed out three facets of UX (see Figure 2.1). Firstly, UX is beyond the instrumental needs in a way that non-instrumental aspects must be paid more attention to create a more holistic HCI. In the early study of defining UX, Alben (1996) regarded aesthetics as an important factor of technology. Similarly, Gaver and Martin (2000) paid attention to some other non-instrumental needs addressed by technology, such as surprise, diversion and intimacy. Hassenzahl (2005) concerned the pragmatic and hedonic aspects of interactive products.

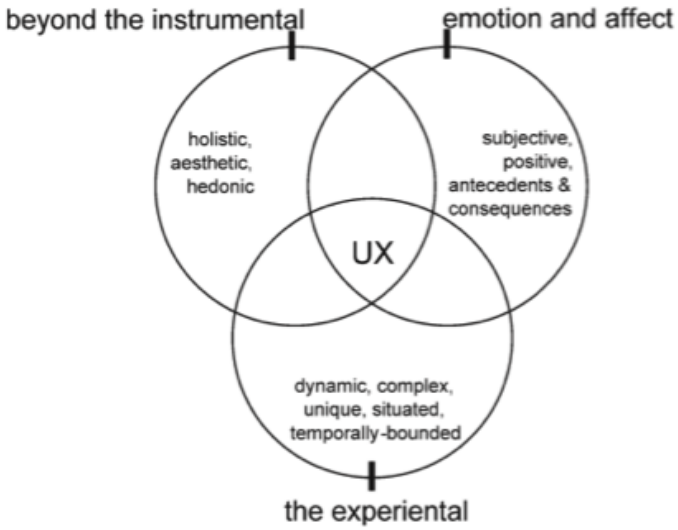


Figure 2.1: Facets of User Experience (Hassenzahl and Tractinsky, 2006)

Secondly, current research emphasizes the importance of affect and emotions. User experience researchers are interested in getting to know “the

role of affect as an antecedent, a consequence and a mediator of technology use" (Hassenzahl and Tractinsky, 2006). In addition, creating positive emotions to prevent frustration and dissatisfaction has become one of the driven perspectives of HCI (Hassenzahl and Tractinsky, 2006). Emotion affects our plan to interact with products, the actual interactions with products and our perceptions and outcome of these interactions. Besides, it is the resources for understanding, communicating and sharing our experiences. Furthermore, Experiences and emotions are not singular events as infinite amount of smaller experiences and emotions can contribute to larger experience over time. The term "scalability of experience" is used to describe this fact (Forlizzi and Battarbee, 2004).

Thirdly, the experiential facet of UX addresses the situatedness and temporality of technology use. In this view, an experience combines various elements, including product and user's mental activities and states. The experiential aspect assumes that the actual experience is the outcome of interrelating all these elements. According to the understanding of these three facets of UX, they defined UX as: "UX is about technology that fulfils more than just instrumental needs in a way that acknowledges its use as a subjective, situated, complex and dynamic encounter. UX is a consequence of a user's internal state –, characteristics of designed system – and the context – within the interaction occurs". (Hassenzahl and Tractinsky, 2006)

2.1.2 Shopping Experience

In this study, shopping experience refers to user experiences in different types of retail services. Several previous researches have studied shopping experiences from different aspects. One of the common researches is to examine shopping experiences against different attributes or variables. Yuksel (2004) has evaluated and compared shopping experience of tourists from several countries through different perception attributes, such as personal attention, service quality, respect, ease of communication, etc. It was found out domestic consumers are more negative in evaluating shopping services than international consumers. They also have different preference in purchasing shopping items. For instance, Dutch tourists purchased more imitated products while domestic tourists bought more carpets.

Similarly, McKinney (2004) studied Internet shopping experience through examining atmospheric variables that may lead to satisfying shopping experience for consumers with different orientations of shopping. In this study, five categories of atmospheric variables that affect shopping experience were

proposed, namely, external variables, internal variables, layout and design variables, point-of-purchase and customer services. Besides, the following five factors representing different shopping orientation were found out: economic/comparison orientation, confidence/convenient orientation, store/preferred shopping, opinion leader orientation, and internet-preferred planner/browser orientation. (McKinney, 2004)

Ofir and Simonson (2007) measured shopping experience from the aspects of expectations. As customers' expectations play a key role in affecting their satisfaction, shopping experience and loyalty, thus, it is necessary to pay attention to their expectations. Through four studies, they found out customers who stated expectations before shopping tended to give a lower evaluation of that shopping experience since they are more likely to compare the actual performance with their expectations after stating them. As a result, this process emphasized more on the negative aspects. Besides, they surprisingly found out, in some cases, stating expectations about future experience and evaluation of past experience may affect the subsequent shopping experience positively. Though the studies have limitation, they still show stating expectations have wide-ranging influences on customers' behaviours and judgement. (Ofir and Simonson, 2007)

2.2 Services

Recent decades have seen a huge change from product economy towards service economy. Both service demand and service employment have increased rapidly. Service revolution emerged with this booming service economy, the satisfying product market and the increased individual customer's needs (Moritz, 2005). Besides, technology offers new opportunities to create innovative services and to deliver services through new delivery channels. In order to study further, a basic understanding about services, their nature and related fields is necessary.

2.2.1 Definition of Services

There exist distinctions on the definition of services in academic literature. In service marketing, services are considered as activities and processes rather than objects (Solomon et al., 1985). Corresponding to this thinking, researchers have regards services as "deeds, processes and performances" (Wilson et al., 2012). To be more inclusive than the traditional definition, Vargo and Lusch (2004) defined services as "the application of specialized compe-

tences (knowledge and skills) through deeds, processes, and performances for the benefit of another entity or the entity itself". Both the two definitions focus on the process dimension of services.

Besides process dimension, Grönroos (2007) also paid attention to the interaction aspect of services. He defined services as "a process consisting a series of (...) intangible activities that (...) take place in interaction between the customer and service employees and/or physical resources of goods and/or systems of the service provider (...)" (Grönroos, 2007). From this definition, it can be seen that services happens at the present of resources from both customer and service provider.

Moreover, Fitzsimmons (2004) specially includes service characteristics into service definition by defining that "a service is a time-perishable, intangible experience performed for customer acting in the role of co-producer". This definition highlights three of the commonly referred service characteristics: perishability, intangibility and inseparability.

Based on these definitions of services, it can be summarized that services at least contain three aspects: 1) it is an on-going process of activities, 2) it includes interactions between resources from customer and service provider, and 3) it has several special characteristics.

2.2.2 Overview of Fields of Services

A number of academic researches have involved services, ranging from theoretical basis to practical work. Traditionally, marketing, economics and engineering are three fields paying most attention to services. In recent two decades, there is an emerging thinking on how to design services by service designers. Together, different fields show a more comprehensive view about services.

Within service marketing, the main focus is on characteristics of services. There is a considerable amount of literature mentioning characteristics of services (Kutvonen, 2012). The most commonly mentioned characteristics of services are the so-called IHIP characteristics, namely, intangibility, heterogeneity, inseparability and perishability (Fitzsimmons and Fitzsimmons, 2006; Edgett and Parkinson, 1993; Zeithaml et al., 1985). These four characteristics are described in details in section 2.2.3.

The service business economics literature focused on the aspects of selling

and buying services. As services are intangible, it is difficult to assign property right. It is also difficult to confirm the quality of service at the point of purchasing since service is results of processes to be carried out. Besides, service pricing is based not on the exchange of goods, but on service proofs, such as time, resource consumption, change of status, access to certain places. (Lillrank, 2009)

Within service engineering, the focus is on how to produce services. Compared with physical products, there are several crucial facts making service production different. Firstly, as services cannot be stored in inventory, it is difficult to manage demand variability. Secondly, services quality varies from customer to customer due to the variability of customer inputs. Thirdly, the outputs of services are co-produced by customers and service providers. Therefore, service providers alone cannot determine service outputs. Moreover, services are produced and delivered under time-location constraints as customers are involved. (Lillrank, 2009)

Service design literature mainly focus on service development. Service development projects are usually co-created by a multi-disciplinary team. Service design aims at improving perceived customer experience. Thus, customers are put at the center of the whole service development process. Besides, there are a number of service design tools for assisting service development. Service development process is always an iterative process.

2.2.3 Characteristics of Services

IHIP (Intangibility, Heterogeneity, Inseparability and Perishability) characteristics are the most famous characteristics of services. Though there exists controversy on the adequacy and effectiveness of these four characteristics, they are still the most widely cited ones among marketing scholars (Lovelock and Gummesson, 2004). Therefore, it is still necessary and valuable to take a look at them.

Intangibility
Services have been declared as intangible since long time ago. The majority of marketing scholars concurred with the interpretation that services are physically intangible as they cannot be touched, heard, smelt or seen (Edgett and Parkinson, 1993). This characteristic has even been described as the most important characteristic of services (Zeithaml et al., 1985). Conversely, the thinking of services as intangible has been criticized as services usually involve many tangible objects (Shostack, 1977). To respond to the criticisms,

researchers explained that resources for services are not necessarily intangible, but rather the transformation processes and the services offerings are intangible (Moeller, 2010).

Heterogeneity
The term "heterogeneity", used in service context, refers to the difficulty in standardizing services (Edgett and Parkinson, 1993). As considered, there exists high potential of variability in service outcomes and production performance considering the factors of human beings and time (Zeithaml et al., 1985). However, Lovelock and Gummesson (2004) have challenged this point of view as they think there are many possibilities to standardize services. For example, the services of a retail bank can be standardized through equipping ATM. On one hand, it is admitted that variability in services can be possibly reduced with the help of modern technology. On the other hand, Moeller (2010) explained it is the customer resources that are heterogeneous rather than the transformation process and service outcomes.

Inseparability
Another distinctive characteristic of services is inseparability. A number of scholars have referred to the fact that a service is inseparable from the sources that provide it (Edgett and Parkinson, 1993). In other words, the consumption and production of a service is inseparable. Criticizers have challenged this feature by saying that there are commonly many services performed with customer's absence (Lovelock and Gummesson, 2004). However, it is not always the customers, but their resources, such as their belongings, their rights or data, are inseparable from service production and consumption.

Perishability
The last feature of services, mentioned in IHIP characteristics, is perishability. Services are perishable in the sense that they cannot be stored in inventory since they need to be consumed while produced (Edgett and Parkinson, 1993). On the contrary, criticizers think services can be stored in systems, buildings, machines, knowledge and people (Moeller, 2010). However, perishability is associated with service provider's capacity rather than the outcome of service (Moeller, 2010). It is even a waste of capacity if a service is available without customers consuming it.

2.3 Service Design

2.3.1 What is Service Design?

The concept of service design arose around 20 years ago and gained significant momentum in recent years. As an evolving approach, service design has not been defined in a commonly accepted way (Stickdorn and Schneider, 2011). However, many service designers and agencies have explained their understandings towards this discipline.

Moritz (2005) thinks service design is an emerging field that helps to improve existing service or innovate new ones that deliver value for both customers and service providers. He also described service design as a "holistic, multi-disciplinary and integrative" discipline (Moritz, 2005). The expected outcome of service design is services that are useful, usable and desirable for clients, and effective and efficient for organizations (Moritz, 2005; Mager, 2009). Generally, service design is the design of overall customer/user experience that meets the anticipation of major customers/users as well as the design of service process and strategy. It is thought as helpful in improving usability of system and customer satisfaction. Fonteijn (2008) even used an interesting story to describe service design: when two coffee shops are right next to each other and sell the same product with the same price, service design is what makes customer choose one but not another.

As a multi-disciplinary field, service design integrates methodologies and knowledge from various disciplines, such as design, management, marketing, engineering, IT, architecture, psychology and a few others (Moritz, 2005; Stickdorn and Schneider, 2011). Within service design, margin of these related fields are rather blurred. Thus, experts from different disciplines are encouraged to contribute with various perspectives and to co-create service in practice. Service design is an on-going and iterative cycle of activities, including user research, idea generation, concept visualization and validation. Effectively, it acts as a mediator that helps to build up a bridge between customers' desires and service provider's desires (Moritz, 2005). As a discipline, service design should be viewed in the context of service development, management, operations and marketing (Edvardsson et al., 2005).

2.3.2 Digital Service Design

Digital service design comes into play when services being designed are based on digital technology and information, such as a web page, a mobile applica-

tion, a graphical user interface, an information system, etc. Though digital service is characterised as digital, the interactions involved in it are not always digital. For example, though eBay represents a digital service of online shopping, it provides offline delivery service of physical products.

Similar as service design, digital service design is a multi-disciplinary field as well. More specifically, it incorporates several disciplines, such as web or user interface design, information architecture, user experience, content strategy, etc. Besides developing a functional service, one of the fundamental ideas of digital service design is to consider how to deliver services in multiple channels. Among these channels, some may be digital. Besides, digital services are strongly tied with a physical product. For instance, a physical mobile provides access to mobile applications and eBook readers offer platform for storing eBooks. Thus, it is necessary to design the interface between the digital and physical experiences carefully. (Tinworth, 2012)

2.3.3 Key Principles of Service Design

Though there is no common definition of service design, there are principles and ways of thinking about designing services. The following parts outline service design thinking through four key principles.

Holistic
First of all, Service design is a holistic approach (Stickdorn and Schneider, 2011; Mager, 2009). As its nature, service is an on-going process involving different touch-points across interconnected system to deliver value for both customers and service provider (Kim, 2011). Thus, designing services needs to consider not only the relationships and interactions among systems and sub-systems (Mager, 2009), but also a broader context that a service process takes place (Stickdorn and Schneider, 2011). A holistic view of service system and context assists designers in considering individual touch-point and the flow of customer journey (Kim, 2011). More specifically, the design focus should be "the environment where the service takes place" at "the level of individual touchpoints and service moments". At the "level of service sequence", the design focus should be "alternative customer journeys", taking into account touch-points, approaches, as well as customers' mood and feelings. (Stickdorn and Schneider, 2011)

User-centred
Secondly, service design is user-centred as it puts customers at the centre of design process (Stickdorn and Schneider, 2011; Mager, 2009). To design

services in a user-centred way, a genuine understanding of customers' habits, culture, social context and motivation through statistical description and empirical analyses is pretty necessary (Stickdorn and Schneider, 2011). Customers should not only be paid enough attention to but also be involved in service design process since services cannot operate without customers' involvement and interaction. Furthermore, different user-centred design approaches, such as probes and workshops, provide customers opportunities to express their thinking and feelings (Mager, 2009) and to create a common language in an interdisciplinary team (Stickdorn and Schneider, 2011).

Co-creative

Thirdly, service design is a co-creative work (Stickdorn and Schneider, 2011; Mager, 2009). A service needs to involve a number of actors, such as different customer groups, various stakeholders as well as interfaces, in exploring and creating service provision (Stickdorn and Schneider, 2011). Traditionally, customers are at best involved in concept evaluation or usability testing in the development process (Sanders and William, 2001). However, involving customers in limited service development phases is not enough for a service with customers at the centre (Kim, 2011). Instead, a successful service design project involves customers already from early exploration towards the whole design process. Besides customers, service stakeholders and specialists from various areas are also necessary in co-creating service provision. Particularly, service designers need to provide appropriate tools and methods to encourage participants' creativities and insights. Through getting customers involved more in service design, a service provider especially expects to create "co-ownership" and thus increase customer loyalty (Stickdorn and Schneider, 2011).

Interdisciplinary

At last, service design is a new interdisciplinary approach involving specialists and experts from diverse fields (Stickdorn and Schneider, 2011; Mager, 2009; Moritz, 2005). These specialists and experts bring their different knowledge, experience, methods and tools into service design process (Stickdorn and Schneider, 2011). For instance, knowledge of design ethnography is necessary in understanding existing or future customers at the early phase of service design. Graphic designers are helpful in visualizing service concepts while technical experts are professional in developing high fidelity (hi-fi) prototypes. At the same time, marketing experts can provide information of target market.

2.3.4 Service Design Processes

Stickdorn & Schneider (2011) described four necessary stages of service design, namely, exploration, creation, reflection, and implementation. The stage of exploration is used to understand both service provider and, more important, the perspectives of existing and potential customers. Within this stage, it is important to keep an eye on the big picture and look for the true motivations and insights behind customers rather than simply gathering empirical data. In the next stage of creation, the task is to create ideas and concepts based on generated insights in the previous stage. It is especially important to work in an interdisciplinary team within this stage. In the following stage, reflection, ideas and concepts generated in the previous stage needs to be tested. As services are intangible, it is important to visualize service concepts by using different service design tools and approaches. Most iterations take place between these two middle stages. Based on the prototypes of service concepts, new services need to be implemented in the last stage - implementation. (Stickdorn and Schneider, 2011)

Similarly, British Design Council (2005) developed the "Double Diamond" design process model (see Figure 2.2) to describe service design process. This model includes four distinct phases: discover, define, develop and deliver. In the first phase of discover, user needs are generated from market research, user research and design research group. The define stage is where findings from previous stage are analyzed and refined as problems and concepts. As results, this stage generates a clear description of problem and a plan to address it. In the next stage, design-led solutions are developed, iterated and tested. In the last quarter of the diamond graph, the resulting services are finalized and launched in market. (Design Council, 2005)

Besides, some service design consultancies have also developed their own process or model for designing services. Livewell collaborative is an innovative organization specializing in product and service development for 50+ customers. Their process model includes 5 phases and is divided into 3 parts based on before, during and after project (see Figure 2.3). Before project, the identity phase aims at planning the project scope and identifying problem space. The part of during project includes three iterative phases: research, ideate, and refine. The focus of this part is on gaining knowledge through research, generating ideas and concepts, and refining the concepts to meet project objectives. In the last phase, the research team mainly discusses about the future opportunities with project results (live well collaborative, N.A.).

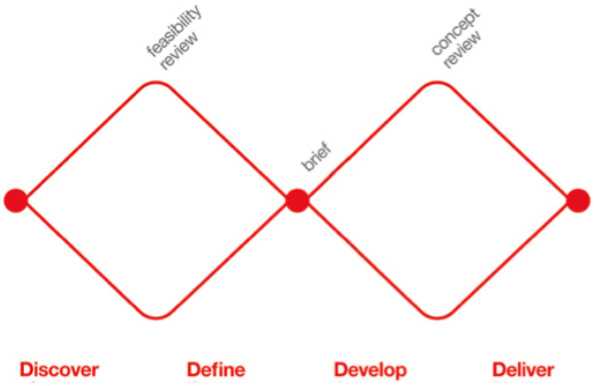


Figure 2.2: The "Double Diamond" design process model (Design Council, 2005)

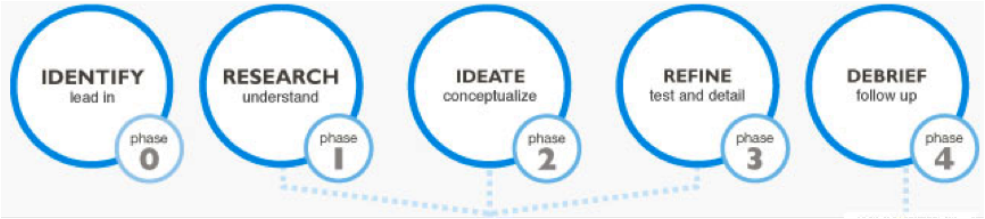


Figure 2.3: Livewell Collaborative Design Process Model (livewell collaborative, N.A.)

To sum up, even though these processes and models use different step names and each step contains different activities and focus, they share the same thinking. It is obvious that these theories provide guidelines for service design. However, they should never be used as linear guidelines. As its nature, a good design process is iterative and cumulative. This is also true for service design, as service designers need to move back and forward between steps. Each iteration provides opportunities for validating current design as well as inspiring new thinking. Besides, service design process differs from project to project so that these processes and models can only be used as references, but not absolute guidelines for designing services.

2.3.5 Service Design Tools

There exist a wide range of service design tools in practice, such as storyboards, storytelling, scenario, customer journey maps, role-play, service

blueprints, etc. Based on projects' objectives, these tools can be used in any combination (Stickdorn and Schneider, 2011). Indeed, there is even more than one way to use each tool. In the followings parts, the service design tools used in this research will be presented.

2.3.5.1 Persona

A persona is a "fictional profile" (Stickdorn and Schneider, 2011) or an "archetype" (Blomquist and Arvola, 2002), representing a particular group of users. It usually has a name and describes the representative user groups' needs, behaviours, goals and motivations (Calde et al., 2002). Rather than providing a precise description of users, a persona gives a simple but clear enough description of representative users, which supports the whole design process (Gulliksen et al., 2003).

Interviews and observations are commonly used to collect insights for creating personas (Blomquist and Arvola, 2002). Based on the collected insights, workshops are suitable for facilitating discussions around customer segments and constructing personas. Eventually, the result is a workable character presented by visual representations or detailed anecdotal profiles. (Stickdorn and Schneider, 2011)

There are several advantages of using personas in service design. Firstly, it provides different perspectives of a service and allows designers to address different customer segmentations from the target market. Secondly, it can effectively shift focus from abstract demographics to real people's needs, motivations and reactions. Moreover, it supports design and communication in a multi-disciplinary design team. (Stickdorn and Schneider, 2011)

2.3.5.2 Customer Journey Map

As a common challenge of services, the emotional distance between service provider and its customers is reflected in the low customer satisfaction. To close this gap, services "need to be understood as a journey or a cycle - a series of critical encounters that take place over time and across channels" (Parker and Heapy, 2006). In other words, the building blocks of services are "insights, segmentation, touchpoints, channels, environments and journeys" rather than "data, functional institutions and episodes" (Parker and Heapy, 2006). Similarly, Moritz (2005) described services as complex experiences that take place over time and they are made up of the perceptions that a

customer has across service touch-points. Influenced by the unique characteristics of services, perceived experiences of service vary from customer to customer. The journey perspectives highlight the central role of customer in service innovation.

Customer journey is a cycle of relationship between customer and service provider. It usually starts when the need of certain service or product arises and continues till the product is reclaimed, redeemed or renewed (Nenonen et al., 2008). Thus, customer journey is beyond the actual interaction process with service. It includes not only physical aspects, such as visiting physical shop, but also non-physical aspects, such as building anticipation and perceptions. During a customer journey, there are numerous touch-points that should be carefully designed and managed. The value of customer will change while going through the journey (Flom, 2011). By analysing customer journeys, organizations can understand current customers' perceptions around various touch-points, their overall experiences, and their expectations. This understanding can help optimize customer experience that meets expectations of major customer groups (Nenonen et al., 2008).

Some design agencies and consultancies used journey perspectives to analyse current customer experiences with the aim at improving existing services. There is also an amount of service innovation came from process innovation around customer journeys and touch-points. This usually involved mapping the customer journeys. Customer journey map takes into account not only customers' interaction with product and services, but also their mental activities and valuable touch-points. As a design tool, it enables designers to create a picture of services from customers' view. Through mapping customer journey, designers' main objective is to create the best experiential journey for customers (Parker and Heapy, 2006). Compared with other service design tools, such as persona and scenario, customer journey map is considered as more powerful in highlighting the flow of customer experience and more effective in communicating research findings and analyses by user experience designers (Flom, 2011). Moreover, it is a much more powerful way to understand how services could be improved and how customers could be better engaged than any survey tool (Parker and Heapy, 2006).

As defined by Flom (2011), Customer journey map visually illustrates individual customer's needs, the interactions to fulfil those needs and his or her emotions and perceptions throughout the process. Other practitioners also defined it in a similar way. Based on this definition, Temkin et al. (2010) listed three required elements of customer journey map: customer

processes, customer needs and customer perception. Customer processes show the stages, interactions and touch-points across the life cycle of the relationship (Temkin et al. 2010). Through comparing several existing customer journey maps and reading some research papers within this area, the author of this thesis suggests describing touch-points as a single necessary element of this map due to their importance of service innovation. Another element, customer needs, illustrates customers' needs, motivation or drivers of each interaction. The last element describes customers' perceptions, thinking, view or satisfaction about current interactions. Other optional elements include moments of truth, interaction gaps, improvement opportunities, pain points, customer description, post-purchase satisfaction, etc.

Touch-points

As a crucial part of customer journey map, the term, touch-points, has being mentioned in several business discussions and research publications. However, touch-points and related variations have not been defined in a commonly agreed and consistent ways. For instance, contrary to intuitive definition of touch-points are tangibles that contribute to user experience (Parker and Heapy, 2006), intangible conversation, explanation or interview are also called touch-points (Spraragen and Chan, 2008). Some user experience experts said touch-points are the encounters where people experience services (Parker and Heapy, 2006) while some others argued experience does not happen at individual touch-point (Choy, 2008). Others, in further, described touch-points as key building blocks of the overall experience and they support customers to evaluate the service (Hill, 2007). At times, touch-points are mentioned together with another similar term, moment-of-truth, which is the opportunity point for organizations to make an impression on customers. Differently, touch-points are interactions that actually create impressions.

Existing knowledge of touch-points can be traced back to the discipline of marketing. In this area, integrated marketing communication (IMC) is one of the concepts that mentioned most upon touch-points. IMC practitioners use touch points to describe message delivery channels that can reach target customers (Shimp, 2010). Not all touch-points are equally engaged but only ones that can deliver brand messages to targeted customers are appropriate (Shimp, 2010). Another marketing related concept, customer relationship management (CRM) (Chen and Popovich, 2003), also refers to touch-points. However, most focus is upon the CRM systems that maintain relationships with customers rather than user experience. Though the importance of touch-points has been realized within this area, there is limited practical guidance about discovering and evaluating touch-points.

In service design, touch-points are one of the three pillars (Koivisto, 2009). Moritz (2005) calls every encounter of a part of service touch-point. Clatworthy (2011) describes "the points of contact between a service provider and customers" as touch-points. Usually, this term is used to describe one of the most obvious differences between products and services. Through linking service provider and customers, touch-points contribute to the overall customer experience (Clatworthy, 2011). Though the origins of touch-points is not clear, the concept of designing tangible evidences that reinforce or contradict personal experience with services is not new. Shostack (1984) introduced the thinking of including "tangible evidence" as a part of "service blueprint" which allows service providers to explore issues inherent in designing and managing services in the 80's. While considering service design for public services, Parker and Heapy (2006) mentioned the need to map touch-points and to explore the extent to which they support service provider's commitment. Especially, they pointed out the forgotten touch-points - service environments. In fact, the built environment of a service has impact on customers' behaviour and sense of self and agency (Parker and Heapy, 2006).

Furthermore, some service designers regard touch-points as recourses of service innovation since each touch-point has the potential for innovation. Leading by Clatworthy (2011), AT-ONE project presented a card-based tool to innovate services around touch-points in a cross-functional project team. Through using the touch-points cards, the project team aims at building a common and overall understanding of touch-points cross-functional teams, analysing and mapping touch-points during customer journey, and generating innovation ideas. These touch-points cards were evaluated through semi-structured interview, workshop discussion and questionnaire. As a result, the tool played a positive role in reaching the three main goals. (Clatworthy, 2011)

2.4 Customer Loyalty and Loyalty Program

2.4.1 Customer Loyalty

The concept of customer loyalty has evolved over years. In the early days, the main focus of loyalty is the so-called brand loyalty in regards of tangible products (Cunningham, 1956; Tucker, 1964). The early definitions of loyalty emphasized its behavioural dimensions (Tucker, 1964). As a representative

of these early researchers about loyalty, Tucker (1964) said "no consideration should be given to what the subject thinks or what goes on in his central nervous system; his behaviour is the full statement of what brand loyalty is". In the early researches, brand loyalty was measured mainly based on the purchase profitability (Frank, 1962), sequence of choices (Tucker, 1964), or proportion of purchases devoted to the brand (Cunningham, 1956).

In the late 1960s, researchers started to doubt the adequacy of considering behavioural dimensions as the only indicator of loyalty. Day (1969) expressed the idea that "there is more to brand loyalty than just consistent buying of the same brand-attitudes, for instance". To measure brand loyalty, he introduced a two-dimensional brand loyalty model that divides the portion of purchases devoted to a brand by the mean score of attitudes towards this brand (Day, 1969). Similarly, Jacoby and Chestnut (1978) criticized behavioural dimensions measure only the static outcomes of a dynamic process. After these criticisms, the attitudinal dimensions of loyalty gained increased attention and, over time, behavioural and attitudinal dimensions are defined as two measures of customer loyalty (Dick and Basu, 1994).

In addition to behavioural and attitudinal dimensions of loyalty, some researchers mentioned the "cognitive" aspects of loyalty (Lee and Zeiss, 1980). Newman and Werbel (1973) claimed that customer loyalty means the brand or store is the first choice that comes to the customer's mind when the need of purchasing rises. That is, an extremely loyal customer does not actively consider or search information from alternative providers (Gremler and Brown, 1996).

2.4.2 Service Loyalty

Besides tangible products, Gremler and Brown (1996) extended the concept of loyalty to intangible services. Based on their definition, service loyalty incorporates at least the previously described three dimensions of loyalty, namely behavioural loyalty, attitudinal loyalty and cognitive loyalty. A real loyal customer not only repeats purchasing from the same service provider, but also holds a positive attitude about this service provider. What is more, he or she does not even consider purchasing from any other similar service provider. On the contrary, a non-loyal customer will never use the same service again, holds negative feelings about the service provider and is willing to purchase from any other similar service provider. (Gremler and Brown, 1996)

Compared with brand loyalty, service loyalty has several distinctive features.

At first, service providers have better opportunities to develop loyal customers (Parasuraman et al., 1985) since they have more chances to interact with their customers (Czepiel and Gilmore, 1987). Secondly, loyalty has a stronger affect among service customers than among product customers. Thirdly, switching between service providers may involve certain barriers that are not involved for products. (Zeithaml, 1981). Furthermore, perceived risk of purchasing services is higher than that of purchasing products (Murray, 1991), thus services customers are more likely to be loyal since loyalty is seen as a way to reduce risk (Zeithaml, 1981).

Based on the research of Gremler and Brown (1996), service loyalty has three antecedents: satisfaction, switching cost and interpersonal relationships. In general, service loyalty happens after the customer is satisfactory with the service. In other words, majority of loyal customers are satisfactory ones though satisfactory ones do not necessarily become loyal customers. Switching cost is another factor that often affects service loyalty. It associates with the cost to change from one service provider to another (Zeithaml, 1981). A relatively high switching cost makes customers difficult to switch to another service provider and thus, strengthen service loyalty (Gremler and Brown, 1996). Another factor, interpersonal relationships, is typically not mentioned in loyalty studies. According to relationship marketing research, personal relationships are extremely important in service contexts (Crosby et al., 1990). To dig more, Gremler and Brown (1996) found five specific relationship dimensions affecting service loyalty: familiarity, care, friendship, rapport, and trust.

2.4.3 Customer Loyalty Program

The past two decades have seen many companies adopt a customer focus through Customer Relationship Management (CRM). Advances in information technology have provided tools to create new CRM tactics. One such tactic, adopted by thousands of companies, is to establish a customer loyalty program (Uncles et al., 2003). Loyalty program, also called as reward program, is established to build customer loyalty through certain reward schemes (Yi and Jeon, 2003). One of the most well-known reward schemes is the frequent-flyer program of the major airlines (Dowling and Uncles, 1997). Examples of customer loyalty program can be found in various businesses: retailing, airline, grocery, bank, telecommunication, fashion, etc. Researchers have used several indicators to assess effects of loyalty programs, including store sales performance (Leenheer et al., 2007), frequency of visits (Leenheer et al., 2007; Gómez et al., 2006), share-of-wallet (SOW) (Leenheer et al.,

2007), percentage or share of purchase (Gómez et al., 2006), customer satisfaction level or trust in the retailer (Gómez et al., 2006).

Through launching loyalty programs, companies expect to achieve a variety of objectives. One of the most common goals is to increase sales revenues and profits (Uncles et al., 2003). Another common objective is to establish a higher level of customer retention (Bolton et al., 2000), namely to increase loyalty and value of existing customers (Uncles et al., 2003) as loyal customers are thought to be more valuable. What differentiate loyalty programs from other promotions programs is their long-term nature and companies' efforts in customer retention (Uncles et al., 2003).

There exists open discussion about the effectiveness of loyalty program. Many researchers believe loyalty programs really create loyalty and value. Some assert that loyalty program participants not only visit the retailer more often (Drèze and Hoch, 1998), but also purchase more than other types of participants (Drèze and Hoch, 1998). Echoing these two findings, subsequent researchers found out that loyal customers are more profitable to company (Reichheld and Teal, 2001). This profitability is thought to come from reduced service cost, higher purchase amount, lower price sensitivity, and higher possibility of word-of-mouth (Dowling and Uncles, 1997). Moreover, Yi and Jeon (2003) suggested another benefit of establishing loyalty program by showing that generated data from loyalty program can be analysed to understand customer behaviour and to identify the real loyal customers.

In contrast, some other researchers doubted and challenged the claims of loyalty schemes. Dowling and Uncles (1997) claimed that loyalty program seems unlikely to fundamentally alter buyer behaviour, especially in markets that are established and competitive. They also explained that cost of serving customers in loyalty program is not clear to be lower than serving other regular repeat customers since customers' loyalty is not the key variable of driving cost. Moreover, they pointed out the expectation of loyal customers being less price sensitive is not undoubted. Similarly, Partch (1994) was also sceptical about the effectiveness of loyalty program by claiming that loyalty programs increases operating cost without competitive advantage if all companies are forced to establish loyalty programs similar as other short-term promotion approaches. Indeed, the effectiveness of loyalty program varies among cultures, individuals and markets (Noordhoff et al., 2004).

2.4.4 Loyalty Card

Loyalty card program is one of the most frequently established loyalty strategy by retailers. From retailers' perspectives, loyalty cards can be used to generate knowledge about customers, to improve customer loyalty and to strengthen customer relationships (Mauri, 2003). From customers' perspectives, loyalty cards can offer them extra rewards (Noordhoff et al., 2004). Typically, loyalty card serves three objectives. Firstly, the basic goal is to act as an identifier (Noordhoff et al., 2004) as customers usually need to show or swipe loyalty cards in order to be identified as loyalty-card program participants. Secondly, transaction information, namely the specific products you purchase and the time and date you purchase them, is recorded and linked with retailer's database through loyalty cards. Thirdly, loyalty cards are used to reward customers (Noordhoff et al., 2004). Varying from program to program, loyalty card rewards include price reduction of current or future purchase, savings, gift, coupon, credit facilities, extra information, or preferential treatment adapted to individual customer needs (Gómez et al., 2012).

2.4.5 Mobile Loyalty Program

Mobile loyalty program is an emerging business topic in recent years. Compared with traditional loyalty programs, mobile loyalty programs not only eliminate plastic loyalty cards and paper-based coupons, but also provide possibility to extend business through social networking. There are several factors that enabled mobile loyalty programs to emerge. The most important factor is the mass adoption of smartphone and other tablet devices that allow retailers "to create a closed loop ecosystems using affordable consumer hardware" (Broitman, 2012). Another factor is the increased availability of location and social data. The third factor is the increased adoption of QR codes (Broitman, 2012). Moreover, brilliant innovation and invention also contribute to the emergence of different mobile loyalty programs.

Basically, current available mobile loyalty program applications at market can be divided into five types (see Table 2.1). The first type is loyalty card aggregator that enables users to scan or manually input information of physical loyalty cards into a single mobile app. By using loyalty card aggregators, users can benefit from reducing the number of physical loyalty cards owned. The second type is location-based mobile loyalty apps. The basic idea of these apps is to check-in or to scan at specific locations in order to earn re-

Types	Descriptions	Examples
Loyalty card aggregators	Enable users to scan or manually input cards information into a single mobile app.	Key Ring, CardStar, Loyalty One
Location-based apps	Enable users to check-in or scan at specific locations so that they can get rewards.	Foursquare, SCVNGR, Shopkick
Discount and deal apps	Enable customers to get group-buying rewards through purchasing at a given merchant.	Groupon
Mobile payment apps	Enable users to pay through a mobile device	Google Wallet, LevelUp, Payclo
Digital punch cards	Enable users to collect stamps redeemable for rewards without paper loss	Perka, Punchd

Table 2.1: Types, descriptions and examples of mobile loyalty applications (Reid, 2012)

wards, such as membership points, savings or gifts, provided by merchants. The third category is discount and deal apps that enable customers to get group-buying rewards through purchasing at a given merchant. The fourth type is called mobile payment apps which provides customer payment services via a mobile device. Most of these apps are powered by Near Field Communication (NFC) technology. The last type is digital punch cards that allow users to collect stamps redeemable for rewards. At the same time, users don't need to worry about the problem of losing stamps on physical punch card. (Reid, 2012)

Due to the proliferation of loyalty programs in last year, mainly via mobile apps, some practitioners predicted that 2013 will be the year of mobile loyalty apps and users can expect to benefit more in this year (Clay, 2012). Some others believed that the future mobile loyalty programs would be more than just points and rewards. Interactions via gamification will be added to the future ones, making customers more interested in doing business with the company.

Chapter 3

Research Methodology

This chapter introduces the research methodologies used in this research. It contains the reviews of several academic papers that contain one of these methodologies. The first two methodologies were used in the first phase of this research while the last two are used in the second phase.

3.1 Design Probe

Design probes address people's emotional and experiential reactions to certain contexts through open-ended and provocative ways (Gaver and Dunne, 1999). This method initially developed in the late 1900s as a part of a EU-funded research project led by Bill Gaver. This project explored new technology possibilities to support the elder's daily lives in their local communities. The initial purpose of developing cultural probes is to open dialogue possibilities between the designers and the elders (Gaver and Dunne, 1999). The open dialogue can encourage the elders towards unexpected ideas that are not dominated by designers (Gaver et al., 1999). The designers wanted to know not the elders' needs but their inspirational responses (Gaver, B. and Dunne, 1999; Gaver et al., 1999).

Typically, design probe materials are a package in the form of envelope, box, bag or folder that contains diverse physical objects. Some of the most commonly used objects are postcards, maps, disposable camera, stickers, diaries, etc. The contents and aesthetic appearances of probe materials vary from project to project. Participants receive probe package together with certain tasks or assignments, such as taking photographs, drawing pictures, writing diaries and answering questions.

This method not only increases participants' participation in research but also minimizes the impact of researchers presence on their behaviours and answers. Unlike traditional self-documentation in ethnography, this attempts to "provoke people and stimulate their imagination" (Mattelmäki, 2006). Though the initial assumption of cultural probes is the equality between designers and participants, designers' own interpretation at the analysis stage seem to break it (Mattelmäki, 2006). However, it was explained that probe materials were not designed to be summarized (Gaver, B. and Dunne, 1999) but to spark off new ideas and concepts (Mattelmäki, 2006). As results, inspired ideas of technologies could improve people's living quality in new ways. In another study reported by William Gaver et al. (2004), probe results were found to be tricky and impossible to be interpreted clearly since they include a number of different layers of expression and interpretation.

3.2 Mobile Probe

With the possibilities of updating traditional user study tools by new technology, Sami Hulkko et al. (2004) introduced mobile probes. This tool arose from solving two challenges of probe studies in mobile context. One challenge is to motivate participants in completing tasks in mobile contexts. According to experience, participants of similar research tended to record the happenings after they are over. Though it's totally acceptable and worthwhile to record retrospective components, some information of applying probe in real-time may be lost. Another challenge is the sharing of collected probe materials and interpretation among project members and parties. Usually, the original materials require an amount of work to be digitalized since they are rich and visual. Thus, a more contextual interactive and dynamic probing tool is needed. (Hulkko et al., 2004)

Mobile probes were initially used in two pilot studies. Case shopping is a part of one research project aiming at searching for new sales points for clothing retailers. Probes were chosen to record people's habits and thoughts while shopping for clothes. The probes include a Nokia 7210 phone and an external digital camera. A Java application running on the phone provides participants tasks and questions for self-documentation. Another pilot study is the case mobile work aiming at developing mass customized products and services for enabling mobile work. Tasks and questions were sent to participants through text messages. Then participants sent back their answers to a dynamic webpage. Most of the answers are multimedia messages. (Hulkko et al., 2004)

Through these two studies, researchers found that mobile is suitable for user studies since it is naturally used in people's everyday life (Hulkko et al., 2004). Compared with tangible probes, mobile probes are effective in collecting and storing answers. Another big change is the possibility to see participants' answers in server right away after they submit it. Thus, researchers can encourage them to complete tasks even in the middle of probing.

3.3 Semi-structured Interview

Semi-structured interview is a commonly used social science research method. The interview process of semi-structured interview is more flexible and open than that of standardized structured interview. It allows the discussion and elaboration of the raised questions, ideas and interest during an interview. Though it has a higher flexibility, it still follows "a script" to a certain extent (Bryman, 2008). Usually, the semi-structured interviewer prepares a list of questions to be covered. These questions could act as guide to facilitate the interviews. The sequence of the interview questions could be different from participant to participant. However, the wording of all the questions should have the same meaning to each participant. Based on participants' replies, interviewer may ask further questions for more details (Bryman, 2008).

3.4 Photo-elicitation

As a social science research method, photo-elicitation has been used to collect participant-generated data in several studies (Clark-Ibáñez, 2004; Samuels, 2004; Hulkko et al., 2004). Participants are provided with camera and asked to take photos either with or without certain requirements. After collecting photos, a follow-up interview is usually conducted so that participants can elaborate details behind photographs. In photo-elicitation interview, photographs provide researchers and participants a communication medium. Researchers can expand questions based on them and participants can have a unique way to illustrate their perspectives on their world (Clark-Ibáñez, 2004; Hulkko et al., 2004). Photographs could also act as a trigger of memories for past. Besides, photographs enhance participants interview experience through providing tangible prompt and visual support (Clark-Ibáñez, 2004).

Compared with word-only interview, photo-elicitation interview was found to have several benefits and roles through the study of Sri Lanka monastic

culture by Samuels (2004). First of all, participants tended to provide more details about their daily lives with self-taken photographs at hand since these photographs are more meaningful and valuable to them. He also pointed out not only the amount of information increased but also the content is more descriptive and grounded. Secondly, photographs can act as a bridge between researchers' world and participants' world. This role of photographs could help researchers avoid subjective assumptions and understandings based on their existing knowledge. Thirdly, photographs made participants better at making associations among different tasks. It was also noticed that participants pay more attention on the interview with self-taken photographs.

Besides these benefits and roles mentioned by Samuels, Parker (2009) also reported several other roles of photo-elicitation in his study. In interview, photographs can act as a third party besides researcher and participant. This neutral role facilitates free-flowing communication and helps avoid status difference between the other two parties. For participants, photographs offer clues that remind them of portrayed events and help them reconstruct conversation. In group-interview, they can trigger more comprehensive discussion and help participants gain confidence in sharing their experiences.

Chapter 4

Data Collection

In this study, the data collection part is done through two stages using different research methodologies. The first stage is a three to four weeks probing period by using two probes with the same content. One is a paper-based design probe (see Figure 4.1) and another one is a mobile probe. Followed by the first stage, the second stage contains a one-to-one semi-structured interview between a researcher and a participant. During the interviews, photos taken by participants were used to complement data and to facilitate conversations. Interview transcriptions were created for analysing.

Even though there are several other user groups within the shopping context, this study focused only on the young people initially. The participants were selected based on some pre-requirements. Firstly, they are young people between 20 and 30 years old. Secondly, each of them owns at least one smartphone or tablet and uses it frequently. Thirdly, they go shopping either online or offline frequently. At last, they had shopping experience with either traditional loyalty cards or mobile loyalty apps. In addition, the 12 participants are divided into two groups based on their nationality. One group is the Finnish group and another one is the Chinese group. Each group includes 6 participants.

4.1 Design Probe and Mobile Probe

4.1.1 Design Probe Package

To encourage participants in self-documenting and reflection, probes approach needs to be playful, motivating and easy to use (Mattelmäki, 2006). This was done through providing two different probes with the same content

(a) (b)

Figure 4.1: Design Probe Package and Content

and a possibility to choose a preferred one or even to use both for self-documenting. Besides, participants also have opportunities to choose tasks that are relevant to them. Different tasks offer different ways, such as photos and texts, to express ideas. Another principle of probes is to prepare for unexpected views through visual tasks and open questions (Mattelmäki, 2006). This was done through describing tasks and questions in an open-ended way thus participants can freely record the situations, context and feelings. This principle was especially reflected on the "Shopping stories" part. Within this part, short phrases are used as hints to encourage participants' unexpected views. The third principle is to transform the data in an empathic way (Mattelmäki, 2006). This was done by using participants' original texts, talk and pictures as evidence in findings, discussions and presentation. The full probe package (see Figure 4.1 (b)) includes the following contents:

Ten cards with pictures and texts
These ten cards are used to generate a general view of users' shopping habits. Each of the ten cards mentions one theme related to shopping. These themes include touch-points, happy moments, disappointments, problems, re-purchase, mobile, loyalty cards, mobile loyalty apps, integrated loyalty card and ideal shopping experience. On the front side of each card, the theme is highlighted and related question is written in an uncompleted declarative sentence. Based on their own experience, the participants' task is to complete the uncompleted declarative sentence on each card. Most of the space is left for participant to write answers. The backside of each card shows a picture of the related topic. As hints, these pictures are used to help participants understand the topics and elicit their expressions. As a starting task, these ten cards were designed to be filled in first among all the tasks since they

help to provide a general view about participants' shopping experiences and habits.

A shopping stories book
As the most important part of the probe, the shopping stories book asks participants to write one to three real shopping stories that they have experienced recently. These stories can be related to big offline purchase, purchase with loyalty cards, or online shopping. Since the focus of this study is not on daily purchase, thus participants were told to write shopping stories that contain their decision-making process rather than daily purchase. Besides, they were also reminded to mention their thinking and feeling within the shopping experience by text. To encourage them to write a more comprehensive shopping story, each story is divided into three parts: before shopping, during shopping and after shopping.

A shopping record list
A shopping record list is a table for recording purchases with any loyalty program, such as loyalty cards, mobile loyalty apps, coupons, or other online loyalty programs, within the probing period. This table includes four columns: date, product name, shop name, and loyalty program. To record loyalty program related shopping, the researcher aims at knowing in which places the participants used loyalty programs.

Three snapshot task cards and participant's own smartphone
Snapshot task cards remind participants to take three kinds of pictures. One kind is the touch-points they meet while shopping during probing period. Another kind is pictures recording their shopping situations. The third kind is pictures of goods they mentioned in the part of "My shopping stories". In order to separate them from other ten cards, these three cards are all in dark blue colour. To support the snapshot tasks, participants are encouraged to user their smartphones.

A notebook with a pen, a website url card, and a welcome letter
The notebook and pen are provided to record any thinking, happening or any other unexpected things while shopping. The notes may help participants write shopping stories after shopping. A portable website url card shows the url for accessing the mobile probe. And the welcome letter introduces the project and guides participants in using both probes. They may be helpful if participants have any doubts.

4.1.2 Mobile Probe

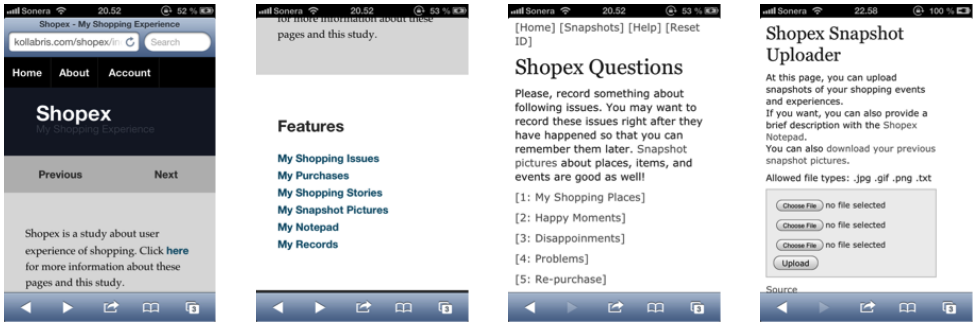
Another probe used in this study is a mobile probe called Shopex. Participants can access it by laptop, mobile or tablet through the following link: `http://kollabris.com/shopex/index2.html`. They were asked to input their names as ids when accessing it for the first time.

Technology
The mobile terminal used for the mobile probe is participant's own smartphone. The backbone of the mobile probe is built based on LAMP software bundle that refers to Linux operating system, Apache HTTP server and PHP scripting language. All the questions and submitted texts are stored in a MySQL database. A user interface for viewing the questions was developed with PHP and JavaScript scripting language. There is an intention to design a mobile first responsive interface so that users could easily fill in and submit data by mobile.

User Interface
The user interface (see Figure 4.2) is divided into three main parts by three background colours. The first part is in dark blue. It includes the Shopex title and the main navigation bar. Participants could access website of Aalto University (Aalto) and Strategic Usability Group of Aalto University (Stratus) through the links at the head of this part. Besides, they can also read the project introduction and clear browser cookies from this part.

The background of the second main part is in light grey. This part includes the project introduction as well. More importantly, participants could access the "My Purchase" part that asks them to record the purchases with any loyalty program during the probing period. This part is exactly the same as the shopping record list in the paper-based probe. Before delivering the probes, it was supposed that My Purchase part may be the most frequently used part

As the most important part, the third part includes all the necessary contents to be filled in by participants. The same as the cards with pictures in physical probe, the "My Shopping Issues" part of mobile probe includes ten questions for a general view of participants' shopping experiences and habits. Similarly, the other parts, such as "My Purchases", "My Shopping Stories", "My Snapshot" and "My Notepad", are exactly the same as the corresponding contents in physical probe. Besides, participants could upload the required pictures through the "My Snapshot" part. Moreover, they could view the submitted data through "My Records" part.



(a) (b) (c) (d)

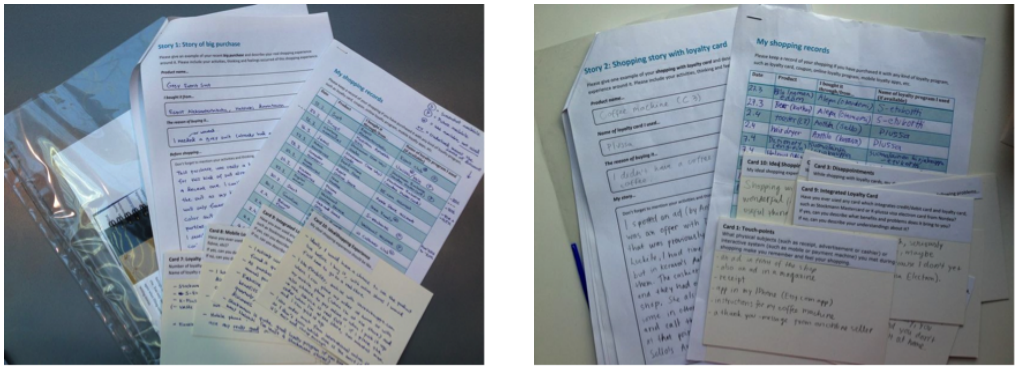
Figure 4.2: Screenshots of Mobile Probe

4.1.3 Probe Settings

Before self-documenting with probes, participants were firstly introduced the project and study purposes. They were also guided to use the cultural probe by showing and explaining the content of probe package and the tasks. To make sure they understand the concept of touch-points, the researcher illustrated their meaning with some examples. Besides, the researcher also introduced the mobile probe by demonstrating the main parts and their contents. Other practical aspects, such as contact method and time of self-documenting, were also mentioned in this first meeting with each participant. In addition, many participants have already expressed preference on using either cultural probe or mobile probe in the first meeting.

The whole probing period lasted for around three to four weeks in the first quarter of 2013. Depending on participants' schedule, it is slightly different for each one. During the probing period, the Finnish participant group stayed mainly in Finland while the Chinese one stayed in China. Thus, most of the stores they visited are local stores during this period. In the middle of self-documenting period, participants were contacted and asked about the progress of self-documentation. They were also encouraged to collect data actively.

After the probing period, the accomplished probe packages (see Figure 4.3) were collected back before the actual interviews. Accomplished design probes and mobile probes were read through. Interview questions were created based on participants shopping stories. In addition, the researcher also took pictures for these accomplished probe packages and kept digital version of the texts.



(a) (b)

Figure 4.3: Examples of Accomplished Probe Package

4.2 Semi-structured Interview

(a) (b)

Figure 4.4: Semi-structured Interviews

After self-documenting period, the second stage involved semi-structured interviews (see Figure 4.4) with participants.The purposes of the semi-structured interviews are to complement data gathered through probes and to elaborate more details behind participants' shopping experience. In order to keep their fresh memories of shopping experiences and the probing answers, the interviews were conducted within one week after each participant returned the probe. The time of each interview was set beforehand with participants. Each interview lasted from 45 to 60 minutes and was conducted between one researcher and one participant. The sound was recorded with participants' permission by iPhone Voice Memos for future transcription and analysis. All

the interviews with Finnish participant group were conducted face-to-face in the meeting room of Aalto University. Besides, most of the interviews with Chinese participants were conducted online due to the location limitation. In these situations, probe materials and pictures were shared online with participants during interviews.

For the interviews, a list of interview questions (see Appendix A) was prepared beforehand to cover the general focus and interest of this study. As a reminder for the researcher, this list includes some topics and questions to be covered during the interview. Besides, the tailor-made questions for each participant were designed based on the content of the submitted probe. Since the core of this study is related to customer journey map, the researcher kept a mind in designing interview questions that will contribute to creating customer journey maps. During the interview, the accomplished probe package and pictures taken by participants provided tangible tools to supply information and to facilitate the conversation. The submitted texts and pictures were discussed with a main focus on the part of shopping stories. Participants were asked about the detailed situations of the important touch-points in their shopping stories. They also elaborated more details that were not mentioned in the accomplished probes, such as the websites they searched for and another unmentioned shopping story. Moreover, their opinions and suggestions about the provided probes were also collected. To make the interview a conversation rather than an ask and answer dialogue, the order of questions varied depending on the flow of conversation. Besides the designed questions, some additional questions emerged to cover the rising issues during the interviews.

4.3 Photo Elicitation

Besides the filled probes, pictures taken by participants were also used as communication medium during the interviews. In total, 55 pictures were taken and returned. Most of them show the touch-points that participants met while shopping and the products they purchased. Only parts of the pictures that related to their shopping stories and probes were mentioned and discussed during the interviews. Through the interviews, it was found out pictures show information more straightforward than words. If the researcher did not get participants' idea immediately through words, the pictures could visually show their ideas clearly. Besides, they tend to provide more details while talking around these pictures since they are more meaningful to them.

Chapter 5

Results

This chapter presents the analysed results from probes and interviews. To make it clear, most of the results from probes are presented in section 5.1 and the results of shopping stories from probes are described together with interview results in section 5.2. In order to represent two participant groups, personas were created by integrating analysed results from different participants.

5.1 Results from Probes

This part presents the results of ten cards with texts and pictures from the probe. Rather than providing a comprehensive knowledge of participants' shopping habits, these results generally outline the basic information of their current ones. Based on these results, two personas were created to represent the two participants groups.

5.1.1 Current Habits about Loyalty Programs

About Loyalty Cards (see Table 5.1)
All of the participants have mentioned owning at least one loyalty card. This number varies from one to dozens for different participants. In average, each Finnish participant actively uses around 3 loyalty cards in daily life. This average number, around 2.7, is a little bit lower for Chinese participants.

Besides this number, the type of actively used loyalty cards is also quite different between the two groups. In Finnish group, the most commonly used loyalty cards are from the three big retail groups in Finland: S-group, K-group and Stockmann. This can be shown from the fact that all Finnish

	Finnish group (6 participants)	**Chinese group (6 participants)**
Average number of cards	3	2.7
Categories	• S-etukortti (6/6) • K-plussa kortti (4/6) • Stockmann loyalty cards (3/6)	• Clothes or shoes (3/6) • Personal caring (3/6) • Supermarket (2/6)

Table 5.1: Results about the actively used Loyalty Cards

participants own S-etukortti issued by S-group and four out of six participants actively use K-plussa kortti issued by K-group. Besides, they also actively use other loyalty cards related to lifestyle, such as airline, hairdresser, car wash, movie and restaurant. Compared with Finnish group, the Chinese group do not share such a big commonality in using loyalty card issued by the same retail group. Instead, they share commonality in participating in loyalty programs for similar services, such as clothes and shoes, personal caring, supermarket and online shopping mall.

About Mobile Loyalty Apps (see Table 5.2)
Five out of Six Finnish participants have tried at least one mobile loyalty app, such as Groupon, Foursquare, Passbook and H&M app. However, they have shown limited times of access to mobile loyalty apps. Two Finnish participants have tried Passbook pre-installed on iPhone. However, they didn't use it so often since there is limited number of companies supporting it in Finland. Besides these two Finnish participants, others also mentioned they don't use mobile loyalty apps so often since they may forget login details and get daily spam emails.

Compared with Finnish participants, only half of the Chinese participants have used mobile loyalty apps. No matter whether they have ever used them or not, most of them (5 out of 6) associate loyalty apps with getting discount. They especially mentioned scanning QR code, which is a two-dimensional barcode, as a way to get discount through discount and deals mobile apps. Besides, at least two Chinese participants regard mobile apps as one resource of getting commercial information.

	Finnish group (6 participants)	**Chinese group (6 participants)**
Yes, I've used mobile loyalty apps	5	3
Their understandings	• I rarely use it (5/6) • My reasons of rarely using it: 1) limited number of supporting companies, 2) getting daily spam emails, and 3) forgetting login details.	• I can get discount through it! (5/6) • I can scan QR code by using it. (2/6) • It's a source of commercial information. (2/6)

Table 5.2: Results about Mobile Loyalty Apps

About Integrated Loyalty Cards (see Table 5.3)
In Finland, integrated loyalty card, issued by a bank, integrates a credit/debit card with a loyalty card. Half of the participants in Finnish group own and actively use at least one integrated loyalty card, such as integrated K-Plussa card, S-Pankki debit card and Stockmann MasterCard. Only one of the three Finnish participants who have not owned integrated loyalty card considered applying one. The participants who own integrated loyalty cards mentioned different benefits of this card. Firstly, it reduces the number of physical cards carried by them. Secondly, the benefits for loyal customers, such as getting digital points and keeping membership, are linked directly to their bank account. Lastly, it provides possibility to have a shared bank account and loyalty card with relatives. Besides benefits, other three participants also mentioned reasons of not using it. Firstly, the digital points are not recorded into the integrated loyalty cards if customer pays by cash. Secondly, they have already owned other credit or debit cards with the same basic function so that they do not want to apply another integrated loyalty card. Lastly, the annual fee could also make customers hesitated in applying it.

In Chinese group, most (four out of six) participants haven't owned any integrated loyalty app. Based on their understandings, customer could get benefits, such as digital points, discount and gift, through paying with credit

	Finnish group (6 participants)	**Chinese group (6 participants)**
Yes, I own it	3	2
Benefits of integrated loyalty card	• Reduce the number of physical cards • Benefits for loyal customer are linked with their bank accounts • Provide possibility to have a shared account with relatives	• Provide extra benefits when purchasing with it at certain stores

Table 5.3: Results about Integrated Loyalty Cards

cards at certain stores. Compared with the integrated loyalty cards in Finland, these cards in China are somehow different since they are not really an integrated card of credit/debit card and loyalty card, but just a credit/debit card that customers can benefit more from certain stores. Two Chinese participants are expecting more cooperation between banks and stores since there are limited benefits offered at the moment.

5.1.2 Other Current Shopping Habits

About Mobile (see Table 5.4)
Most of the participants (11 out of 12) had experience in using mobile while shopping. It is interesting to notice that most of their shopping activities with mobile have nothing to do with direct purchase through mobile but with assisting shopping. Five out of six Finnish participants mentioned using mobile to compare price of the same product from different stores. Their second common activity with mobile is to search product information. Besides, Finnish participants also mentioned other shopping activities with mobile, such as keeping reservation code and taking pictures or screenshots. Compared with Finnish participants, Chinese participants share less commonality in using mobile while shopping. However, comparing price and searching for products have also been mentioned by at least two Chinese participants. Moreover, they also mentioned using mobile for other shopping activities, such as scanning QR code, checking delivery information and communicating with online

	Finnish group (6 participants)	**Chinese group (6 participants)**
Yes, I used mobile for shopping	6	5
Shopping activities with mobile	• Compare prices (5/6) • Search for product information (5/6) • View reservation code (2/6) • Take pictures or screenshots (2/6)	• Compare price (2/6) • Search for product information (2/6) • Scan QR code (2/6)

Table 5.4: Results about Mobile

store seller.

About Repurchase (see Table 5.5)
In Finnish group, at least three common reasons of repurchasing at the same store were figured out. Five out of six Finnish participants think good service and friendly shop assistants are one of the reasons. By saying good service, they mean the store provides variable and flexible services. They consider shop assistant friendly if they are willing to communicate with customers and to help them with respect to their opinions. Good product quality and reasonable price were also mentioned by half of Finnish participants as the reason of repurchasing. Besides, a satisfactory previous experience at the same store could also make them purchase there again.

Compared with Finnish group, none of the Chinese participant mentioned that good service and friendly shop assistant are the main reason of repurchasing. For them, the most common reason of repurchasing at the same store is good product quality and acceptable price. Four out of six Chinese participants have mentioned this reason. Half of them think they may repurchase at the same store if the products matches their needs and requirements. Besides, they may also repurchase if the store provides benefits for repurchasing or if they had satisfactory previous experience at the same store.

	Finnish group (6 participants)	**Chinese group (6 participants)**
Reasons of repurchasing at the same store	• Good service and friendly shop assistants (5/6) • Good product quality and reasonable price (3/6) • Satisfactory previous experience (2/6)	• Good product quality and reasonable price (4/6) • Product matches my requirements and expectation (3/6) • Satisfactory previous experience (1/6)

Table 5.5: Results about Repurchase

5.1.3 Inner activities about shopping

Happy Shopping Moments (see Table 5.6)
While being asked about the happy shopping moments with loyalty card, four Finnish participants mentioned they felt happy when getting discount by showing loyalty card. Two of them also mentioned they felt happy when purchasing unexpected products due to some reasons, such as discount. Similarly, most Chinese participants also felt glad when getting discount while shopping with loyalty card. When purchasing online with membership account, two Chinese participants feel happy if the received product is similar as what online pictures show. Besides, providing unexpected rewards for loyal customers and buying something they really want could also bring customers a cheerful mood.

Finnish group (6 participants)	**Chinese group (6 participants)**
• Get instant discount (2/6) • Unexpected purchase (4/6)	• Get instant discount (4/6) • Product bought online is the same as online pictures. (2/6) • Unexpected rewards (2/6) • Buy a really fascinated product (2/6)

Table 5.6: Results about happy shopping moments

Disappointments (see Table 5.7)
Based on their answers on the cards in probe, Finnish participants share three common opinions about disappointments of shopping with loyalty programs. Four of them mentioned it could let them down if the products they want are sold out. Sometimes, they may feel disappointed if a loyalty program offers limited benefits for loyal customers. Besides , their post-purchase experience could also let them down if they realized the product is not so good after buying it.

Similar as Finnish participants, two Chinese participants mentioned they also feel disappointed if the product that they would like to buy is out of stock. Three of them pointed out the disappointments about online shopping with membership account. It makes them unsatisfied if the products bought online are not as good as expected. Moreover, unfriendly shop assistants could easily let customers down as well.

Finnish group (6 participants)	**Chinese group (6 participants)**
• The product at discount is sold out. (4/6) • The loyalty program offers limited benefits. (2/6) • I realize the product is not so good after buying it. (2/6)	• The product bought online is not as good as expected (3/6) • The product at discount is sold out. (2/6) • Shop assistant is not so nice (2/6)

Table 5.7: Results about disappointments

Problems (see Table 5.8)
While being asked about the problems they met while shopping with loyalty programs, each Finnish participant mentioned almost different problems. Two of them mentioned it is a problem that coupons are only valid for a certain period of time. Besides, long waiting time, either in queue or for delivery, is another problem they met during shopping. Another problem they mentioned is about payment. For instance, one participant wrote, “paying with card usually takes too long time”.

Two Chinese participants mentioned a problem with online shopping. When buying online, they may be not sure about the product quality and the price level compared with those of other stores. This problem is especially obvious if they have never bought from the same online store before. Besides,

different means of promotional methods could bring customers problem since they may change their original shopping habits. For instance, one Chinese participant wrote, "I have to buy the products I don't really want in order to reach the minimum amount of money to get discount". Furthermore, failure of reading card at cashier desk could make customers impatient as well.

Finnish group (6 participants)	**Chinese group (6 participants)**
• Coupons are only valid for a certain period of time. (2/6) • Long waiting time in queue or for delivery (2/6) • No valid loyalty card or coupon at hand when you need it (2/6)	• I'm not sure about the quality and price level of product from online store. (2/6) • To get discount or digital points, I have to change my shopping habits, such as payment method. (2/6)

Table 5.8: Results about problems

Ideal Shopping Experience (see Table 5.9)
Besides the existing shopping experience, the ten cards in probe also asked participants their ideal shopping experience. Based on their answers, it can be seen that the ideal shopping experience is quite different from participant to participant. On one hand, their ideal shopping experiences covers what they mentioned in happy shopping moments. On another hand, it solves the disappointments and problems that they mentioned in previous cards.

Finnish group (6 participants)	**Chinese group (6 participants)**
• No queue (3/6) • Try product before buying it (2/6) • A shop offers an abundant selection of products and services (2/6)	• Easy access to product information (4/6) • Cheaper price (2/6) • Good product quality (2/6) • Satisfactory delivery service (2/6)

Table 5.9: Results about ideal shopping experience

5.2 Persona

Two personas (see Figure 5.1) were created based on the analysed results. As two fictitious characters, they provide clear and visible pictures of the studied two groups of customers. Similar as real people, each persona has its own characters, interests, preferences, habits, expectations and past experiences. Besides, these two personas are also used as starting points to create customer journey maps in this study.

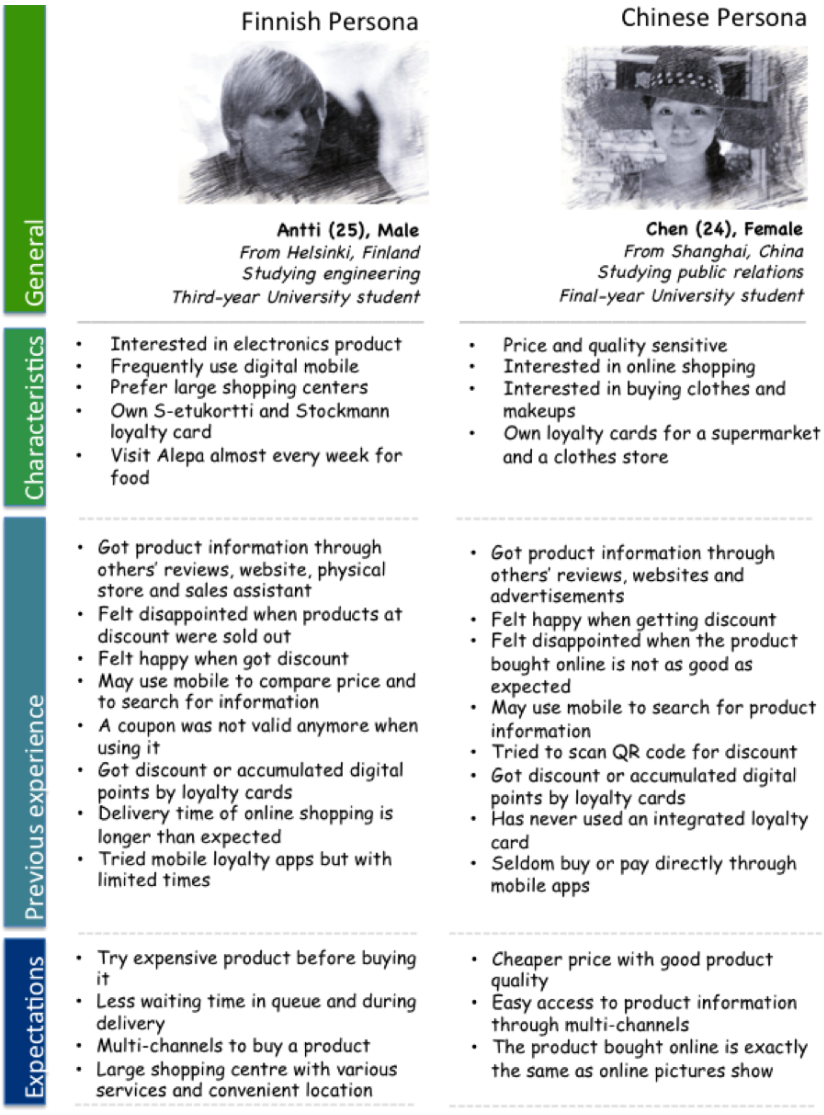


Figure 5.1: Personas

5.3 General phases of customer journey

5.3.1 General phases of big offline purchase

In order to understand customers' shopping experience from their perspectives, it is necessary to understand the whole shopping phases from the beginning to the end. Generally, big offline purchase consists three phases: before shopping, during shopping and after shopping. In more detail, each phase could be divided into more specific steps: inspiration, searching & planning, comparing & choosing, decision-making, payment, and post-shopping activities (see Figure 5.2).

Figure 5.2: General phases of big offline purchase

Before shopping
Inspiration. The before shopping stage includes only one step - inspiration. In most of the described shopping journeys of big offline purchase, participants have already been inspired and motivated to buy the product before the actual shopping activities. In other words, they have well-formed expectations before shopping. However, they may or may not know the exact product that they are going to buy. All the described big offline shopping journeys show that the motivation came from self-need for daily life.

During shopping
Searching & Planning. After inspiration, searching & planning is the second general phase of a big offline purchase. In more detail, this step could contain several activities, such as searching through online stores, visiting and searching for products in local stores, making reservation through mobile, etc. The basic objective of this step is to get a general view of similar options of one type of product and to have a rough plan in mind about the possible places to get it. Through participants' descriptions, it can be seen that they usually search for product information from more than one resource. Besides, their descriptions also show that most of them already know where to buy the product before shopping. If they do not know where to buy it, online map was mentioned as one way to figure it out.

Comparing & Choosing. After searching & planning, the next step is comparing & choosing. In most cases, there is no strict boundary of these two steps since they usually happen at the same time. For big offline purchase, comparing and choosing take place mostly in local store when customers could see and try the physical product. This step includes several common activities, such visiting local store, trying the physical product, communicating with shop assistant, etc. When comparing and choosing among products, customers usually have different requirements. Thus, the main purpose of this step is to find the one that satisfies their requirements. Sometimes, seller is an important touch-point in affecting customers' choices. Besides, family member or friends coming together may also provide suggestions in this step.

Decision-making. After comparing and choosing among different options, a customer needs to make the decision whether to buy it or not. Though the final decision-making happens at a point of time, the whole decision-making process starts already from the moment when a customer is inspired to buy something.

Payment. Similar as the previous two steps, paymente also happens at local store. At this step, a customer usually gets contact with several typical touch-points, such as cashier, credit/debit card, loyalty card, receipts and so on. Some problems occurred at this step were mentioned in participants' shopping journeys. One Finnish participant met the problem that her daily purchase exceeded the security limit of bankcard when she was paying at cashier desk. Three participants mentioned that they once forgot to bring the loyalty card or coupon with them when they were at cashier desk. Additionally, waiting in long queue and choosing one side between bank and credit of credit card were also mentioned as time-consuming in this step. Moreover, one Chinese participant met the problem that she has to change her original way of payment so that she could get discount. Besides problems, an unexpected discount, or a friendly cashier could both make customers satisfactory and happy at checkout desk.

After shopping

Post-shopping activities. Though post-shopping activities may vary from purchase to purchase, there are still some common ones. Most customers will try the product after buying it. Some may even share it with others through face-to-face communication or social networking. Besides, some customers need to transfer money if they paid by the credit side of credit card.

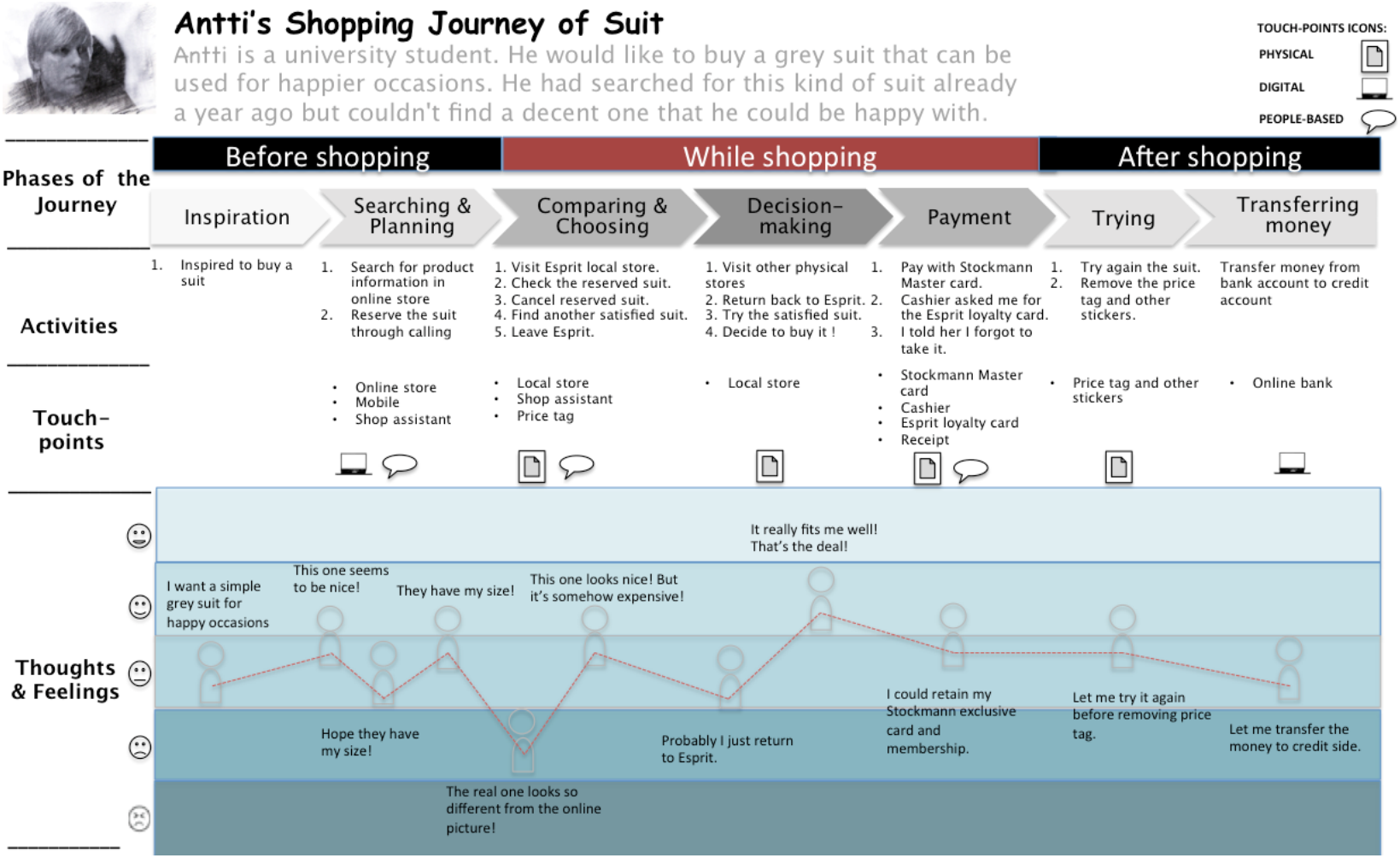


Figure 5.3: Customer journey map of big offline purchase by Antti

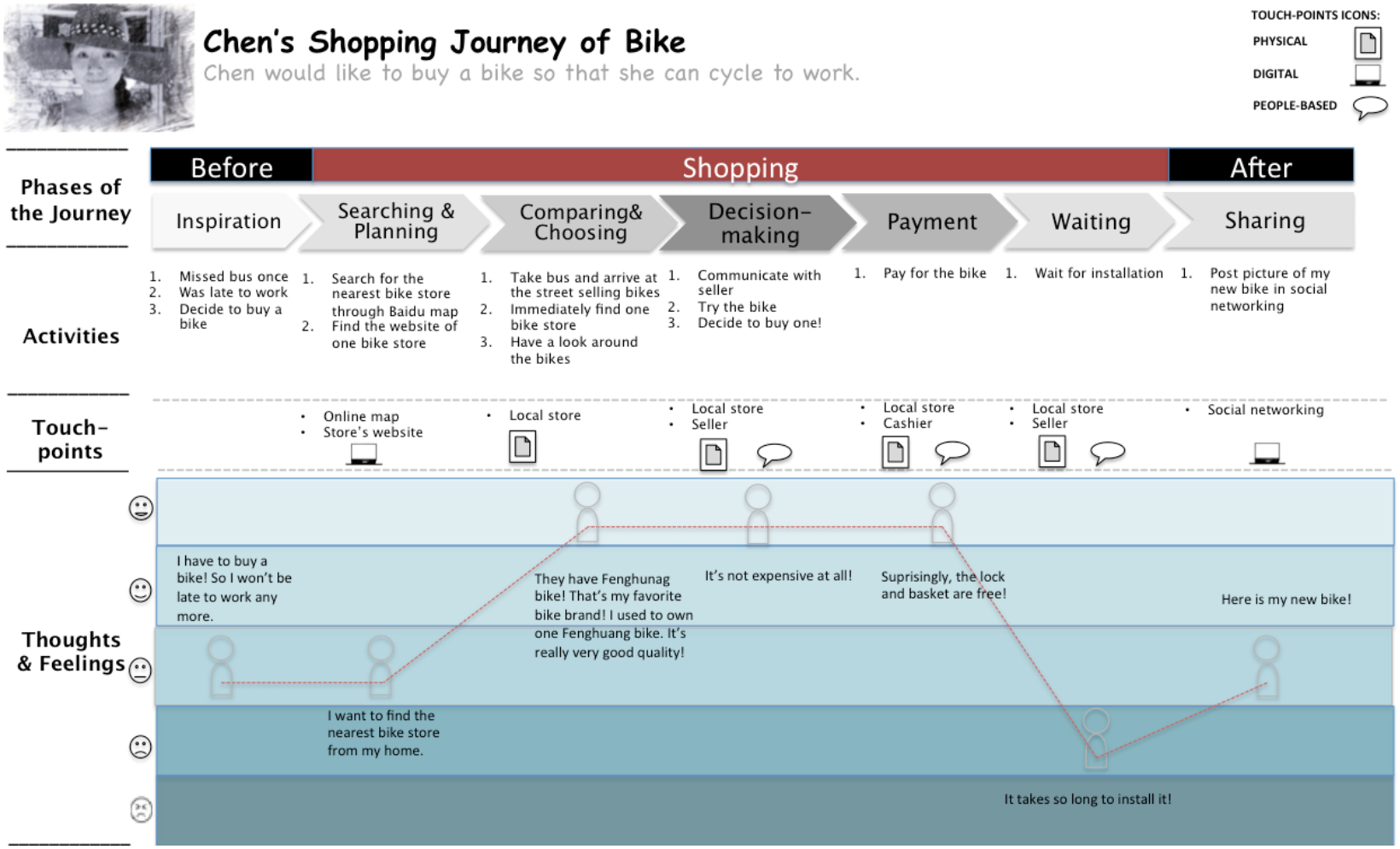


Figure 5.4: Customer journey map of big offline purchase by Chen

5.3.2 General phases of online shopping

Similarly, the customer journey of online shopping includes three phases: before shopping, during shopping and after shopping. In detail, it can be divided into the following steps: inspiration, searching & comparing, decision-making, ordering & payment, delivery, and post-shopping activities (see Figure 5.5).

Figure 5.5: General phases of online shopping

Before shopping
Inspiration. Compared with the inspiration phase of big offline purchase, the one of online shopping is somehow different. While shopping online, customers may already know what they are going to buy before the step of searching & planning or, sometimes, they may come up with an idea to buy something after searching online. Thus, the step of inspiration is not always the first step of online shopping journeys. Besides self-needs, other factors, such as family members' request, commercials or friends suggestions, may motivate customers to start thinking about buying something as well.

During shopping
Searching & Comparing. After inspiration phase, the next step is searching and comparing. In general, this step involves several digital and intangible touch-points, such as online store, different websites, others' reviews, delivery information, etc. In online shopping, the process of searching and comparing happens alternately. Through Finnish participants' descriptions, it can be seen that in some cases they have already had one or two specific online stores in mind to search for a certain product. For instance, when searching for a paper book, one participant knows already that she may get it from akateeminen.com and suomalainen.com, which are two online bookstores in Finland. If a Finnish customer could not come up with a specific online store, searching through search engine, such as Google, was mentioned as an efficient way to figure it out. Depending on the product, Finnish customers consider different factors when shopping online. Among them, product price or delivery fee is commonly considered. In addition, they may care about materials, configurations, content and quality of a product

as well.

Besides these touch-points mentioned in Finnish participants' online shopping journeys, other touch-points, such as online store sellers, total sales amount, seller's reputation grade and instant chat messengers are also commonly involved in this step in Chinese participants' journeys. When searching for product from online sellers, all Chinese participants mentioned that they searched from one of the biggest online shopping malls in China, such as Taobao or Jingdong. Thus, all the online shopping stories mentioned by our Chinese participants are dealt with one of these big online shopping malls. In this step, they usually search with a key word and compare the offers mainly based on product price, product descriptions, product pictures, delivery fee, and others' reviews. Besides products, they also compare the reliability of online sellers based on others' reviews, total sales amount and seller's reputation grade. They prefer to buy from a reliable online seller. Additionally, they may use instant chat messengers to communicate with online seller so that their questions and doubts could be solved in real time.

Decision-making. Similar as that of offline big purchase, the final decision of online shopping happens at a point of time while the process of decision-making is a continuous phase starting from inspiration. The final decision could be different from the initial preference as a customer's preference could change while searching and comparing different options. In other situations, the final decision may be as same as the initial preference. This is especially obvious when a customer has strong confidence in the product or when a customer is deeply attracted by something.

Ordering & Payment. After making the final decision, a customer needs to order and pay for the selected product. Ordering takes relatively very short time if customer has already owned the online store account. Otherwise, he or she usually needs to create an account first in order to continue shopping. Unexpected happenings at this step may make customers return to the previous step. For instance, one Chinese participant found out that the product she wanted was out of stock when she made an order. So she has to search again for other options. While describing the ordering process of online shopping, Finnish participants mentioned two small, but interesting, episodes. One of them thought the price shown at an online store is somehow a mistake since it was not advertised anywhere else. Thus, he took a screenshot of the price through mobile so that he has evidence about the price. When creating account for an online store, another Finnish participant mentioned the registration process guided her to order another loyalty card

even though she has already owned one.

In general, payment of online shopping happens online for Finnish participants. In other cases, it happens at local stores when they pick delivered products from there. An online store usually offers multiple payment methods, such as credit card, online banking, PayPal, etc. Most of the Finnish participants in this study chose credit card as payment method in their online shopping stories. If the payment succeeds, they usually get notification through email or SMS.

Most Chinese mentioned using Alipay, a third-party online payment platform, as payment method when purchasing from big online shopping malls, such as Taobao and Tmall. Besides, credit card is also mentioned as an online payment method for Chinese participants. No problem has been mentioned in their online payment process.

Delivery. After ordering and payment, the next step is to wait for delivery. In some cases, there may be no delivery step if customer purchased a service or digital product through online store, such as restaurant coupons or eBooks. Several Finnish participants thought the delivery time is longer than what the store stated or than what they expected. When meeting this situation, some participants felt uncertain and a little bit anxious while some others think they understand the reason behind longer delivery time. In general, delivery process is a relatively common step that affects Finnish participants online shopping experience negatively.

Besides waiting for delivery, Chinese participants mentioned they also keep track of the shopping information through online logistics systems in this step. After that, the parcel is usually delivered to home by courier. Thus, there are three common touch-points involved in this step, namely, logistics system/information, parcel, and courier.

After shopping

Post-shopping activities. Similar as those of big offline purchase, the post-shopping activities of online shopping are quite different from purchase to purchase. In general, customers will unpack the product, use it and check its quality. They may also call the seller for helping activate the product or authenticate the product in local store. Besides, sharing the product with others is also a very common post-shopping activity. For most Chinese participants, another common activity is to confirm receiving the order through Alipay so that the payment will be transferred to the seller.

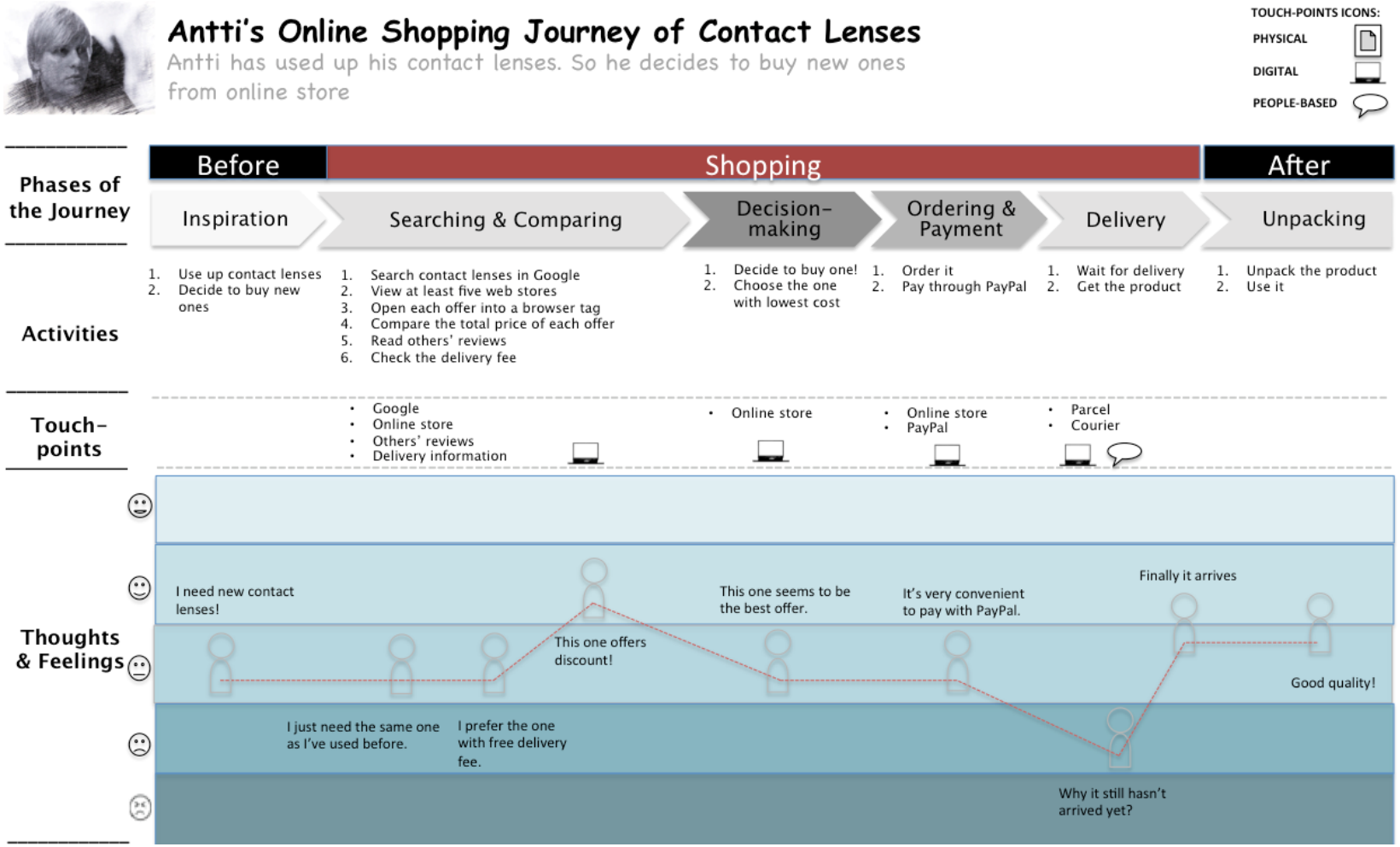


Figure 5.6: Customer journey map of online shopping by Antti

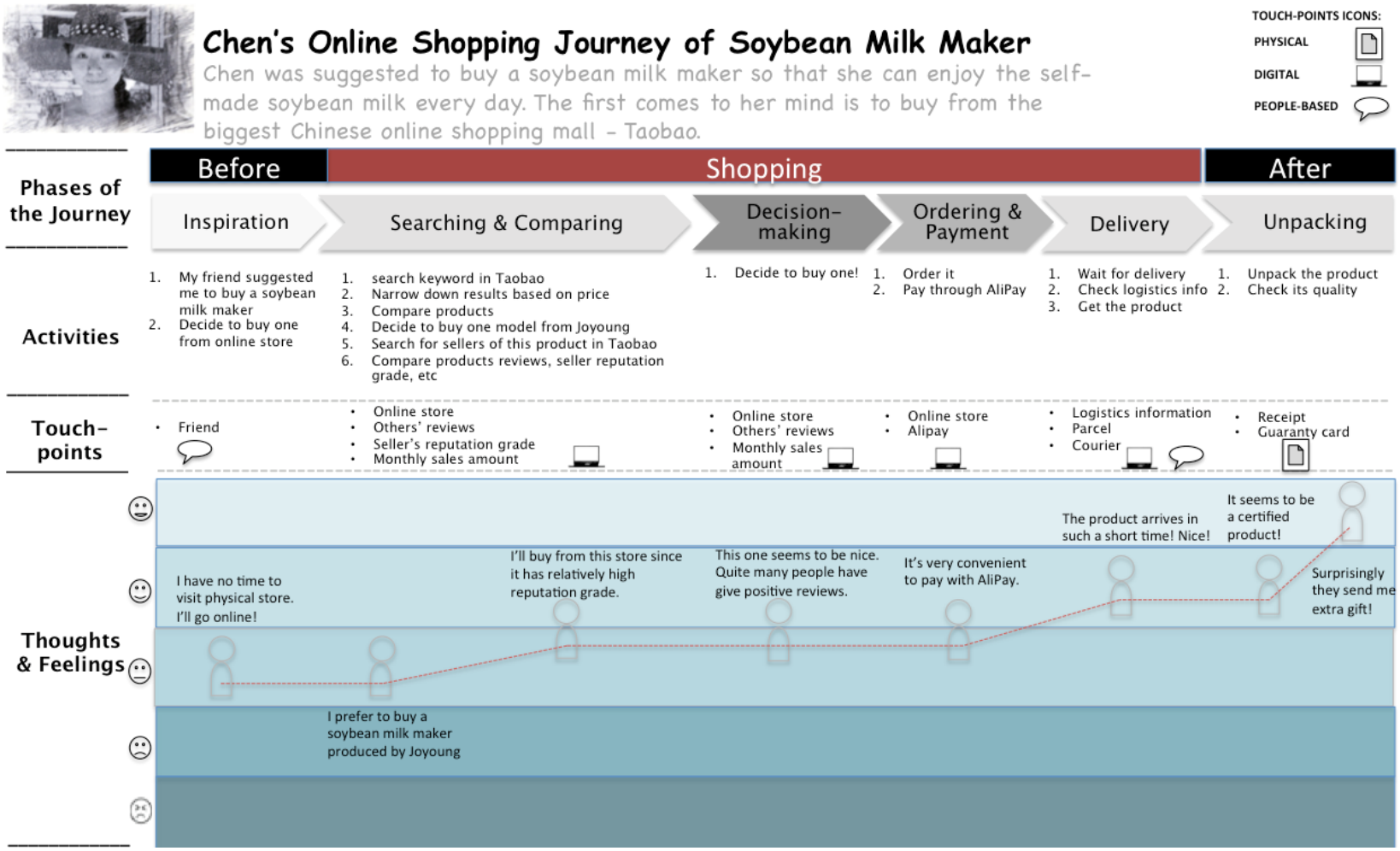


Figure 5.7: Customer journey map of online shopping by Chen

5.4 Important Touch-points

In this study, a number of major touch-points (see Table 5.10) were mentioned in shopping stories and interviews. Based on their nature, they can be divided into three groups: physical, digital & intangible and people-based. The physical group includes physical objects that can be touched, such as paper-based catalogues or receipts. The digital & intangible group mainly contains web-based and mobile-related touch-points. People-based touch-points are the important people that are involved in customer's shopping journey.

Information stand. In local stores, product information stands are usually placed next to products so that customers can have a view of product information, especially product price. While being asked about the important touch-points in their shopping stories, two Finnish participants especially pointed out this touch-point with self-taken pictures (see Figure 5.8). In their mind, this touch-point provides them a direct and clear view about the product.

"There are also these price stand on the table and bigger numbers ... So it's easy for you to see the price."

"The physical store has printed all the information right next to all the products. So you can have a look."

(a) (b)

Figure 5.8: Information stand next to product at store (taken by participants)

Signs in store. In local stores, different signs are used to attract customers'

Segments	Big purchase	Purchase with loyalty card	Online shopping
Physical	• Local store • Information stands next to products at store • Receipts • (Discount) signs at store • Product catalogue and coupons • Credit/Debit cards • Product hangtags • Loyalty cards • Package	• Local store • Receipts • Discount signs at store • Product catalogue • Credit/Debit cards • Integrated loyalty card • Other loyalty cards	• Product price / Delivery fee • Reservation number • Parcel • Credit card information • Delivery information • Commercials
Digital & Intangible	• Online store • Other websites (incl. price comparison website, Amazon, Google, etc.) • Mobile • Online bank • Others' reviews • Self-taken pictures • Card security limit of bank account • Reservation process • Digital map	• Online bank • Reservation information • Reservation process	• Online store • Other websites (incl. Amazon, Google, blogs, etc.) • Mobile • Online bank • Other's views • Screenshots • SMS message • Emails • PayPal • Online store account
People-based	• Friends & Relatives • Shop assistant & Cashier	• Friends & Relatives • Shop assistant & Cashier	• Friends & Relatives • Courier

Table 5.10: Important Touch-points Mentioned in Participants' Shopping Journeys

attention. For instance, discount signs are usually designed to be apparent and big enough for customers to see while classification signs can assist customers in finding the products they want. When meeting discount signs, participants showed, at least, motivation in having a look around the products on sale. Moments around these touch-points are usually associated with positive attitude.

"There's a sign saying up to -70% off in store. That's quite a big discount!"

"This time they have this discount stand there which has quite many jeans."

"I saw it (discount information at cashier's table) when I was in the queue."

Product catalogue, coupons, and commercials. As different marketing channels to reach customers, all the three touch-points act as information resources for customers. At the same time, they could motivate customers to go shopping. Thus, they are usually involved in the motivation phase of the whole shopping journey. Besides, they can be either digital or physical.

"In this specific month, between the catalogue, there were the discount vouchers."

"I spotted an ad by Anttila which said there was an offer with K-plussa card."

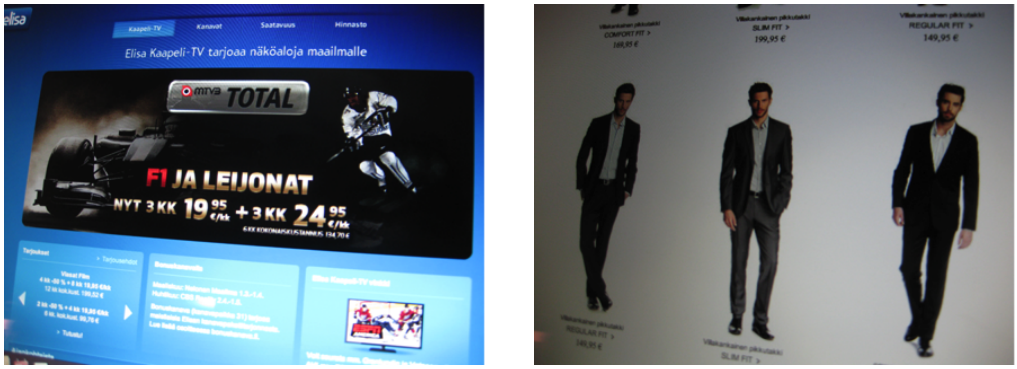
"The initial idea of purchasing this product occurred after seeing some television commercials of Elisa Viihde"

Online store. Online store (see Figure 5.9) is a website where customers can buy products or services online. As a trend, offline shopping sometimes includes online activities as well. Thus, this touch-point, as a resource of information, is somehow important in affecting customer's offline shopping decision.

"I searched quite many websites. But the Esprit site was one of the first sites I looked for the suite."

"I read some information about the products on the device manufacturers' websites."

"We checked Masku's and Lanterna's websites."



(a) (b)

Figure 5.9: Pictures of online stores (taken by participants)

Other online websites. Besides online stores, customers also mentioned using other websites for assisting their shopping. Search engine, such as Google, was mentioned as a common way to search for information. YouTube and some reviewer's websites were used to get reviews. Besides, website for comparing prices was also mentioned as an information resource.

"I watched some video reviews on YouTube and read one product reviews on theverge.com and other product reviewer websites."

"I also compared the price on some websites, like this website (hintaseuranta.fi), where you can search which is the cheapest price for the product."

"But I also sometimes search with Google. If I browse amazon, I may find some suit manufacturers that look nice, for example, new brands for me."

Mobile. Detailed information around this touch-point will be described in section 5.6

Self-taken pictures and screenshots. Several participants mentioned using self-taken pictures or screenshot saved in mobile to assist shopping. Most use the pictures to help choosing product. One participant uses screenshot to prove the price stated at web store.

"I took a picture of our dining room, then I tried to compare if this is good or not."

"I also took a screenshot of the promised price in case it was some kind of error."

Shop assistants and cashiers. Usually, customers meet shop assistants and cashiers while they are in local stores. This touch-point is especially obvious and important in affecting customers' shopping experience since a helpful and friendly shop assistant can make customers feel satisfactory and happy in shopping.

"She has the voucher at the drawer. She scanned it."

"She was quite helpful...I also asked her opinions."

"For those boots, the shop assistant was also very helpful. He brought me 5 pairs of those."

Friends and relatives. Friends or relatives are another touch-point that could play important roles in a customer's shopping journey. They may be the resource of information, the decision-maker who makes the final decision, or the one that the product is shared with.

"My father called me and told me that iPad 2 was 50 euros cheaper at the Stockmann online store than at any other store."

"I was visiting my mum. Actually she pointed out: did you notice there was this discount."

"My boyfriend actually made the last decision to buy the sofa from Masku."

Others' reviews. When searching for product information through online websites, participants mentioned others' reviews as important sources of product information. Others' reviews are shown through either words or videos. For some Finnish participants, this touch-point is extremely essential when choosing electronic products.

"I watched some video reviews on YouTube and read one product reviews on theverge.com and other product reviewer websites."

"I usually base electronics on findings I do from tech-blogs, what reviewers said, that kind of things."

Receipts. As a proof of purchase, receipts are usually given to customers after payment. It is usually a piece of paper with detailed purchase information, such as price, amount, date, place and purchased products or services. Through interviews, it is found out that most participants have the habits of keeping important receipts.

"I basically keep receipts of all electronic products. I have a folder for keeping them."

"I mostly store my receipts. Especially if it's a higher cost."

"I also got receipt. I have them in my file. I put all my important receipts there."

Product hangtags. Though only one participant mentioned product hangtags, the words on them strongly affect his decision-making. Thus, it is valuable to specially point out this touch-point. Product hangtags are usually attached with product so that customers can have a clear view of product information in details. They are commonly applied for selling clothes. Some key words on product hangtags may attract customer's attention and interest.

"I took one picture of the tag from the suit that says it's some kind of pure wool. It means it's a more valuable suit because it's this kind of material. I think it's quite important somehow if the product has this extra thing."

Reservation process and information. Before getting a product, customers sometimes could make a reservation in advance. According to participants' descriptions, there are three common ways to make a reservation. They could make a reservation through online store or by calling the local store. Besides, they may visit the local store and reserve directly with the shop assistant face-to-face.

"What I do quite often with verkkokauppa. com is that I reserve a product and then I go to fetch it. I reserved the iPad mini."

"I actually called and made a reservation of the suit (with my size) if it happened to be the right one"

"She (the shop assistant) did make reservation for me. She asked my telephone number and name. But she didn't give me any reservation paper."

Card security limit of bank account. The security limits of bank account refer to daily limits for cash withdrawals and payments. In other words, the cardholder could not use the bankcard on the same day if the cash withdrawals or payment exceeds a certain amount. Similar as product hangtags, this touch-point was mentioned only by one participant. However, the problem happened around it strongly affected the participant's shopping experience.

"I didn't notice my account limit didn't allow me to buy these skis. So I have to get money from automatic machine. I noticed the problem when I gave the card to the cashier. I was told there was not enough money. I knew I have enough money in my account. I remembered I set that limit."

Delivery information. After ordering or buying product from online or local store, customer could ask the store for delivery. In usual, customers will be told some delivery information in advance. If the actual delivery time lasts longer than the expected one, some customers may come up with negative feedback and emotions. In other cases, some Finnish participants show that they understand the reason behind longer delivery time.

"I was disappointed that the delivery of the product took much longer than expected."

"The estimation was around 4 weeks when I bought it. But it ended up somehow longer."

"Yeah, they stated in their online store (that the delivery time is within 5 days)"

"I think the one where I bought from has free delivery. It may be the reason I chose it."

5.5 Inner activities

In both probe and interview, participants were reminded to specially describe their inner activities in the whole shopping journeys. Inner activities mainly contain their thoughts, feeling and mood. To some aspects, they support and explain the reasons behind their actual activities. A more comprehensive shopping journey could be figured out by getting to know both their actual and inner activities.

5.5.1 Inner activities of big offline purchase

Through analysing inner activities of each phase, it is found out that most shopping journey of big offline purchase starts with a relatively mild mood. In other cases, a customer may have a lower expectation at first based on past experience or may get excited already at first after seeing commercials that match his or her interest.

In the next phase of searching and planning, customers' mood starts to fluctuate. They may be very excited after seeing discounts at local store or be very disappointed after getting to know the product is out of stock. Besides, customers could feel tired and frustrated after searching for a long time without finding a satisfactory product.

As the journey goes one, they have more thoughts and feeling during the phase of comparing and choosing. At this phase, they may be very enjoyable if the shop assistant is very friendly and helpful or if they find something that they are really fond of. On the contrary, it may let them down if the reserved product is different from what they expected or if it takes to long time to find out which branch store has the product available. Besides, customer may feel hesitated and stressful when choosing among multiple choices since they do not want to make the wrong choice for a big amount of purchase.

In the next step of decision-making, most shopping journeys of this part show customers are in a positive mood since they finally made the decision after a relatively long comparing and choosing phase. After that, customers may be extremely surprised and happy if they get unexpected discount at payment. In other special situations, unexpected problems at payment may let them down. In the last phase, an enjoyable shopping journey could keep customers satisfactory and happy when unpacking, using and sharing the product. On the contrary, they may feel extremely disappointed if the new product is broken within a short time after buying it.

5.5.2 Inner activities of online shopping

Compared with the one of big purchase, participants' inner activities in online shopping changes more gently. In other words, most participants' mood fluctuates less in online shopping journeys. However, they still show positive mood in some situations while feel disappointed and worried in some other situations. The following two paragraphs describe their positive and negative

attitude separately.

They get excited when finding products or seeing commercials that match their interest. For instance, one Finnish participant thought 'I must buy it!' at first after seeing an interesting bracelet online. They could also feel happy and surprised for unexpected benefits, such as discount or free gift sent together within the parcel. For instance, one Chinese participant said, 'I really like the gift tea sent by the seller. I want to buy it next time!' Similarly, they feel very satisfactory when receiving product with good quality. For example, one Chinese participant feels very satisfactory after unpacking the product since 'the product seems to be a certified one'. Furthermore, fast delivery and familiar payment method could make customers feel satisfactory of online shopping as well.

On the contrary, long waiting time in delivery phase is one of the common issues that affect participants' shopping experience negatively. This is especially obvious in Finnish participants online shopping journeys. Besides, unclear guidance in online store may confuse customers. For instance, one Finnish participant has already had one loyalty card of a local bookstore but she was confused that the online store asked her to order a new one when creating online store account. Similarly, customers are extremely disappointed if the product they want is out of stock or if the actual product is different from what the online pictures show. Besides, searching among a number of results was also thought as a time-consuming thing. In addition, customers may hesitate in believing in all the information provided in online store. For instance, one Finnish participant thought the price at online store might be an error initially since it was not mentioned in the television commercials. Furthermore, unexpected payment, such as annual fee, may make customers consider more in comparing and choosing among available choices.

5.6 Mobile in Shopping

As mentioned in the beginning of this thesis, the project of MOFS studies opportunities of financial services in mobile context. Thus, it is necessary to understand customers' current usage of mobile in retail shopping and find out the possible opportunities to improve their shopping experience through mobile. The results come from both probes and interviews.

5.6.1 Current usage of mobile in shopping

Though section 5.1.2 lists some common shopping activities around mobile mentioned by participants in ten cards from probes, there are still more usages of mobile during shopping. These usages have been complemented in their shopping stories and interviews. Table 5.11 summarizes all the mentioned shopping activities around mobile by participants in this study.

Through participants' description, it could be seen that they currently use mobile mainly to assist shopping instead of purchasing directly through mobile. In other words, most of them seldom pay directly by mobile. This is especially obvious in offline shopping. Besides, they use mobile mostly in the phase of searching and comparing to get product information and to assist them in making final decision. Consequently, the most common shopping activities around mobile are to compare price and search for product information. On the contrary, no participant mentioned using mobile in the phase of inspiration. Actually this phase is extremely important in the whole shopping journey since inspiration phase is the key to start the journey. To some extend, there leaves space for mobile to play a role in inspiring customers to go shopping.

Though Table 5.11 lists several shopping activities around mobile, the actual usage of mobile in each of the studied shopping journey is somehow limited. In total, this study analysed 12 big offline purchases and 12 online shopping. In half of shopping journeys, participants did not use mobile at all. For the other ones, number of mobile related shopping activities varies from one to four in each journey.

5.6.2 Opportunities to use mobile in shopping.

Nowadays, offline shopping starts to involve more and more online activities. This fact implies the possibility to involve smartphone more in customers' shopping journeys. Besides acting as a tool for getting product information and comparing price, smartphone could contribute more in shopping. Based on the findings, the following text highlights the possibilities to improve shopping experience through mobility solutions.

Mobile inspiration of shopping. Though smartphones are taken and used by customers every day, no participants mentioned being inspired to shopping due to information from mobile. This is especially obvious for big purchase. Thus, there is possibility to make customers aware of products

	Finnish group (6 participants)	**Chinese group (6 participants)**
Inspiration	N/A	N/A
Searching & Planning	• Compare prices • Search for product information • Take pictures • Make reservation • Make a shopping list • Check information of local store	• Compare prices • Search for product information • Scan QR code • Download mobile apps and get discount • Get digital coupons
Comparing & Choosing	• View pictures or product specifications • Compare among options • Make a phone call with friends or family members • Check availability of product in online store • Download mobile apps and get discount	• View pictures or product specifications • Compare among options • Communicate with seller through instance chat messenger
Decision-making	N/A	N/A
Ordering / Payment	• Take screenshots • Check account balance	• Purchase through group-buying app • Pay for online shopping
Delivery	• Check email and SMS • View reservation code	• Check delivery information
Post-shopping activities	• Share through social networking	• Check account balance • Share through social networking

Table 5.11: Shopping activities around mobile in different phases of retail shopping

through mobile solutions. The frequency and quality of information is especially important at this point.

Smart notification of discount information. Most participants mentioned they are excited and happy when seeing discount, especially big or unexpected ones. Similarly, they are also excited when seeing products that really match their interest. It is possible to combine these two happy moments if mobile could provide smart notification of discount information that match customer's interest.

Easy access of price comparison results. Comparing price is one of the most common shopping activities with mobile. Customers usually search for price from several resources. Though some Finnish participants mentioned using price comparison websites to compare price, others do not use them so often. It is possible for mobile to provide an easy access of price comparison results.

Easy contact with retailers. Sometimes, customers need to call retailer if they need to make reservation or complete service registration. However, not all customers like to communicate with store through phone call. Thus, it is possible to provide other channels to communicate with retailers by mobile.

Decision-making assistant. In the decision-making process, mobile usually assists customers through providing information. However, it is not always easy for customers to make final decision among several choices. In store, seller could help and have an impact on customer's decision. To take these facts into consideration, it is possible for mobile to act as a decision-making assistant from providing information to giving suggestions.

Picture assistant. As a common assistant for shopping, pictures could support different shopping purposes. In offline shopping, pictures could be used to check whether the product fits the actual environment that it will be used in. In online shopping, customers could keep screenshots of webpage as evidence of certain discount. Mobility solutions could be created to add value to pictures and, thus, to assist customers' shopping.

In-time notification of unexpected situations. Unexpected situations, such as products are out-of-stock or delivery is delayed, bring customers negative feeling. Mostly, customers found it out by themselves rather than being informed in advance. It would be nice if customers could be informed in advance about the situation through mobile.

Easy change of security limit of bank account in store. In Finland, customers may meet the problem that the amount of payment exceeds security limit of bank account and payment cannot be completed. Currently, it is not easy enough for them to change it immediately at store. Thus, they have to choose other payment methods. It would be more convenient if customers could easily change it even when they are in store.

Fast payment method. As the study shows, customers are no longer only satisfied with payment by bankcards. Sometimes, waiting in the queue paying by bankcards are considered as time consuming. Faster payment methods are expected.

Easy documentation of paper receipts. Customers mentioned they usually keep the paper receipts of big purchase. However, paper receipts may get lost after a period of time. It is possible to take advantage of mobile for easy documentation of paper receipts.

Chapter 6

Discussion

6.1 Future work

Though this research studied only two customer groups, there are actually more potential customer groups. In order to have a better understanding of shopping experience from different customer groups, future work could implement almost the same research methods used in this study for other potential customer groups. Since different customer groups have different backgrounds and capability, research methods could be adjusted to make participants easy and comfortable in providing information and data. For instance, mobile probe could be skipped if participants have limited knowledge in interacting with it. Language of probes and interviews could be changed to the local language of participants if they are not familiar with English.

Based on the information gathered in user research, the next step for practitioners could be creating innovative service concepts for improving shopping experience. The selected concepts could be prototyped and visualized with the help of different prototyping tools. Before implementation, prototypes could be tested with customers. It is always helpful to get participants involved in the whole service design process.

From the aspects of methodology, academic researchers can continue future work on evaluating the effectiveness and efficiency of customer journey map as a service design tool in different projects. Besides, they could also continue research on the methods of gathering, analysing and aggregating data for creating customer journey maps.

6.2 Validity and reliability

The participants studied in this study only represent two customer groups. One is Finnish young people between 20 and 30 while another group is Chinese young people within the same age range. All of the participants have higher education background and own smartphone. However, there exist more potential customer groups in both Finnish and Chinese markets. For instance, potential customers could be mid-aged people who are financial independent or retired people who have limited knowledge about modern technologies. The participant sample only represents a small portion of potential customers. Consequently, the results could not be generalized to a greater extend.

This study was conducted in a limited period of time. It only studied participants' shopping stories within three to four weeks. No attempt was made to examine long term impact, if any, of customers' shopping behaviours and thoughts. Similarly, it did not consider the possible correlation of two shopping journeys. There may be shopping related stories between the end of one shopping journey and the beginning of the next shopping journey. Besides, participants were not supposed to describe all their shopping stories during the research period. Instead, only three types of shopping stories were described and discussed during this study. This study did not examine whether the studied stories are representative of customers' common shopping experience. Thus, the results of this study only cover a part of the shopping experience of customers.

Though the findings presented in this study are tentative and incomplete, the purpose is neither to generate findings representing all the potential customers nor to cover all the elements of shopping experience. This study was designed to get insight about current shopping experience within the context of retail services, and thus, to support the coming work in creating innovative mobility solutions. To this point, the results are still valuable.

Chapter 7

Conclusions

7.1 Answers to research questions

Rq1: What shopping experience do customers have with currently available retail services?

In general, a customer journey of big offline purchase includes six common phases: inspiration, searching & planning, comparing & choosing, decision-making, payment and post-shopping activities. For big offline purchase, customers usually have a well-formed expectation before the actual shopping. To make sure they will not buy the wrong one, a series of activities are usually performed to search for product information and plan their shopping. They usually search for information from more than one resource. Though the big purchase studied in this research is offline shopping, it actually could involve several online activities, especially in the phase of searching & planning. The next phase of comparing and choosing usually happens in local store. Customers' inner activities are relatively active in this step. Important touch-points, such as seller or family member, may have affect on customers' decision-making process. Customers' emotional state usually reaches the highest point at the phase of decision-making. Unexpected discount or gift at payment usually makes them extremely surprised and happy. On the contrary, unexpected problems at the phase of payment or the latter phase make them have a negative evaluation about the shopping.

Similarly, customer journey of a general online shopping includes the phases of inspiration, searching & comparing, decision-making, ordering & payment, delivery & pick-up and post-shopping activities. Compared with that of big offline purchase, customers do not always have a well-formed expectation

before the actual online shopping. They may come up of buying something while searching and browsing. Several digital and intangible touch-points, such as online store, different websites, others' reviews, delivery information, are commonly involved in the phase of searching & comparing. For online shopping, customers are especially sensitive in the actual time of delivery. Unexpected long delivery time is one of the common reasons affecting customers' shopping experience negatively. In general, customers' emotional states fluctuate more gently in online shopping than those of big offline purchase.

A customer could meet several touch-points even in a single shopping journey. There are mainly three types of shopping related touch-points: physical, digital & intangible and people-based. The perceived important touch-points vary from one shopping journey to another. For big offline purchase, physical touch-points are mostly encountered while shopping in local store. On the contrary, the during shopping phase of online shopping includes several digital touch-points. Interactions around touch-points should be well designed to fit customers' needs.

Rq2: How could mobile be used to enhance customers' shopping experience?

Currently, customers use mobile more often to assist shopping rather than purchasing directly through mobile. The most common shopping activities around mobile are to compare prices and to search for product information. There leaves space for mobile to play a role in other phases of shopping as well, such as inspiration. Though several shopping activities around mobile were figured out, the actual usage of mobile in shopping is still quite limited among the studied participants.

Based on the findings, ten possibilities to improve shopping experience by mobility solutions were found out. These possibilities range from the beginning to the end of a single shopping journey. These possibilities are mobile inspiration of shopping, smart notification of discount information, easy access of price comparison results, easy contact with retailers, decision-making assistant, picture assistant, in-time notification of unexpected situations, easy change of security limit of bank account in store, fast payment method, and easy documentation of paper receipts. Through listing these possibilities, the purpose is to enhance shopping experience by assisting customers from the beginning to the end of a shopping journey.

Rq3: What is the value of customer journey map in service design?

In this study, customer journey maps were used in the user research phase of service design process. They help to understand customers' current shopping experience by visually detailing customers' expectation, shopping phases, interactions, touch-points, and inner activities. Volumes of research findings and analysis were converted into customer journey maps. These pictures visually help project participations with different knowledge background easily understand and interpret user research results. Besides, customer journey maps are powerful in highlighting the flow of customer experience - from ups and downs to critical pain points. Data collected for making customer journey maps are based on customers' real shopping experience. Thus, they are more representative and persuasive.

7.2 Summary

In summary, this study was conducted as planned. The research goals were reached through answering the research questions. On one hand, the results of this study visually outlines the selected participants' current shopping experience of retail services by customer journey maps. On the other hand, the results show their current shopping activities with mobile as well as the possibilities to improve shopping experience through innovative mobility solutions. Besides, the value of customer journey map, as a service design tool, was considered in practice. This research is novel in two ways. Previous research on shopping experience has concentrated commonly on measuring and evaluating it against different attributes. This study takes customer's expectation, shopping phases, interactions, touch-points and emotional state of the whole shopping journey into consideration. Besides, the findings around these shopping experience elements were combined into customer journey maps that visually illustrate the process of shopping experience. Furthermore, the results could be used as a starting point for creating innovative mobility solutions for improving shopping experience. More customer groups could be studied with the similar research methods used in this study. For academic researchers, the future direction could be evaluating the effectiveness and efficiency of customer journey map as a service design tool or the methods of gathering, analysing and aggregating data for creating customer journey maps.

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Appendix A

Basic interview question list

For big offline purchase / purchase with loyalty cards

1. Where did you buy the product?
2. Have you ever bought anything from the same store?
3. What motivates you to buy it?
4. What did you do before visiting the physical store?
5. What did you consider before visiting the physical store?
6. What did you do when you were in the physical store?
7. What did you think?
8. Did you communicate with anybody when you were in the physical store?
9. How did you end up with buying it?
10. What factors did you consider?
11. How did you pay?
12. What was the payment situation?
13. Did you use any loyalty card?
14. What was your feeling at that moment?
15. What happened after taking it back home?
15. In the whole shopping process, when do you consider as a happy moment?
17. Did you meet anything disappointed?
18. Will you buy from the same store next time? Why?
19. Which touch-points do you consider as important in affecting your experience and choice?

For Online shopping

1. Where did you buy the product?
2. Have you ever bought anything from the same store?

3. What motivates you to buy it?
4. Where did you get information about the product?
5. What did you consider?
6. How did you end up with buying it?
7. How did you pay?
8. What was the payment process?
9. What did you do while waiting for delivery?
10. How did you feel while waiting for delivery?
11. What did you do after getting it?
12. How did you feel at that moment?
13. In the whole shopping process, when do you consider as a happy moment?
14. Did you meet anything disappointed?
15. Will you buy from the same online store next time? Why?
16. Which touch-points do you consider as important in affecting your experience and choice?

About the probes

Do you have any feedback or suggestion about the probes?