

SEEING INDUSTRIAL SERVICES THROUGH EXPERIENCE LENS

REVEALING A CUSTOMER EXPERIENCE MAP TO
DESIGN FOR AN EXPERIENTIAL SERVICE IN B2B CONTEXT

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Acknowledgement

It is quite difficult to express everything here in a nutshell as this is the last page I am writing for the book. When the every moment of past seven months became memories, I begin to miss the journey.

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Seeing Industrial Services Through Experience Lens -

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Design for an Experiential Service in B2B Context

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Abstract

Nowadays, more and more companies become aware of the importance on experience investment, which not only brings customers pleasant and meaningful interactions during the business but also supports the company to formulate key brand differentiator compared to other competitors. Through the theoretical background research, it has been found that there is still a lack of academic studies and design cases about investigating industrial services with experiential thinking in business-to-business context. As a branch of UXUS research program, the thesis work relies on the case study in cooperation with Rolls-Royce Marine that deals with B2B transactions with customers. It depicts the exploration on how the customer experience map could be constructed under the product context 'UUC azimuth thruster' to support refining its industrial service through utilizing experience lens for the near future.

Starting with project background introduction and study context definition, the objectives of this thesis have been framed as three research questions, which comprise of discovering the way to promote internal understanding on UUC customer journey as well as bringing the big picture of UUC customer service experience to in-house staff, and enhancing the focused service from the experiential aspect within a short-term outlook. After representing the literature review from both academic and practical domain, the in-house research is described about applying semi-structured interviews to map the industrial service process with touchpoints. It documents the identification regarding key service interactions and the internal standpoints about the customer service experience. The customer study process is explained then as collecting first-hand customer experience within the targeted UUC service scope, the information of customer journey context has been enriched at the same time. To integrate the internal and external study results, the first outcome of this thesis - UUC customer experience map has been uncovered to Rolls-Royce Marine.

By identifying the key opportunity from the customer experience map, the thesis continues to illustrate the process of utilizing the experience goals for ideating the experience-driven actions that Rolls-Royce Marine could take on future service development. The developed concept is presented in detail as an experiential service story which has been further built up through information architecture, the flow of interaction and wireframes establishment, and Hi-Fi prototype creation. Lastly, the two outcomes of the thesis have been evaluated by internal experts to determine the directions for the following implementation. Through the in-house assessment, the customer experience map has been regarded as a valuable and meaningful tool that could help mapping the UUC customer journey and the related customer service experience. The refined UUC service concept has also achieved quite positive feedback from the evaluators, which aims to boost the user experience both inside and outside the organization.

Keywords

customer experience, user experience, experience-driven design, customer journey mapping, industrial service, experiential service development, business-to-business

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A large blue-tinted photograph of a ship's deck and superstructure against a cloudy sky. The ship's superstructure, including a bridge with windows and a mast with various antennas, is visible on the left. The deck in the foreground shows a railing and a concrete structure. The sky is filled with scattered clouds, and a body of water is visible in the distance. The overall mood is serene and professional.

CHAPTER ONE

INTRODUCTION

Chapter 1 / Introduction

The thesis investigates the concept of seeing the industrial service from experience lens for a business-to-business company. The objectives of the case study are to help in-house staff better perceive their customer journey and map the customer service experience throughout different interactions. Also, the proposal is planned to offer for company regarding how to refine the service from the experience perspective in the near future. This chapter starts with briefly telling the project background and introducing the collaborative company of this thesis - Rolls-Royce Marine. Next, it specifies the study context that comprises of the targeted service scope, customer classification and the reasons why the thesis topic has been brought out. Besides, the research questions and thesis structure will be presented to viewers for indicating the study directions and showing how the project has been conducted and managed in general.

1.1 UXUS Project

The thesis project belongs to the FIMECC (Finnish Metals and Engineering Competence Cluster) User Experience and Usability research program called UXUS that studies UX in the context of B2B (Business-to-Business). The program aims at developing and improving the competitiveness of the Finnish metals and engineering industry, and challenges current products, services, routines and organization culture by introducing UX thinking for company operations (Roto, Smedlund, Passera & Nuutinen 2012, p.1). The company representatives and academics were gathered together to dig for more possibilities of company's long-term business achievement and development. Through reconsidering the products and services from user experience and customer experience perspectives, added value was brought into their business which could prompt them to be standout from other competitors in the global market.

This thesis topic was proposed by Rolls-Royce Marine to understand the role and impact of UX and CX throughout the organization, from sales phase until the beginning of product in-service. The company has always kept in

contact with its customers over the years, its competitive advantage derived from positive experience is a crucial factor for them to build substantial business relationships with customers and strengthen their customer loyalty.

1.2 Collaboration with Rolls-Royce Marine

As one of the UXUS partner companies and the collaborator of this thesis project, Rolls-Royce Marine has a world-leading range of capabilities and expertise in the marine market. Its market sector encompasses vessel design, the integration of technologically complex systems, and the supply and support of power and propulsion equipment. Meanwhile, the comprehensive service support for customers is provided by Rolls-Royce Marine through an expanding global network of service facilities (Rolls-Royce n.d.).

Tracing the root of Rolls-Royce Marine history from 1830s to present, its marine product range has become one of the broadest in the world, which involves the offshore, merchant and naval domains. When it comes to certain expertise for offshore vessels and oil and gas platform, Rolls-Royce Marine is constantly active in exploration, production and service sectors, supplying systems that range from facilitating seismic research to keeping a rig safely in position. And the offshore sector is the focused working background for this collaborative thesis project.

“We are trusted to deliver excellence.” This sentence surfaced every now and then from the Rolls-Royce employees during the internal interviews. As one of the best-known brands to the global customers, the value statement of Rolls-Royce “Trusted to Deliver Excellence” has been regarded as the principal promise that employees repose faith on, take initiation from and make every effort to achieve for each project. To develop the strong relationships with customers over long timescales, Rolls-Royce consistently places the customers at the heart of the company to understand their deep requirements, to share ideas and thoughts with them, and relentlessly emphasizes on delivering on customers' behalf.

To date, some projects under the UXUS

research program have been in collaboration with Rolls-Royce Marine e.g., “Experience Design Concept for Future Bridge Operation” and “Improved UX for a New Thruster Cover”. The company always has the strong interest in user experience and customer experience domains, and Rolls-Royce Marine believes that experience will play an important role in business-to-business context. This time, the company would like to expand the experience lens to explore the long-term service process before delivering the product to the end-user. Just as Iiro Lindberg (Development Project Manager, Rolls-Royce Marine) said: “We only have one chance to make a first impression, and user experience is presented in everything we do. If we do not focus on the user experience in all areas, we cannot differentiate ourselves from others.”

1.3 Context Definition - UUC Type Unit, Targeted Service Scope & Its Customer Group

The project focuses on the service process revolving one kind of power and propulsion equipment - azimuth thrusters. It is a configuration of marine propellers applied in pods that can be rotated to any horizontal angle (Wikipedia 2015) around the vertical axis. The product unit provides propulsion, steering and positioning thrust for superior maneuverability, and the designs for this kind of products have been developed for propulsion and dynamic positioning in response to market requirements (Rolls-Royce n.d.). It offers high operational reliability together with a remote control system during its work.

UUC Type Unit

The azimuth thrusters comprise of different types of products based on respective usage context. The specific thruster the project concentrates on is a certain type of offshore azimuth thruster unit for the big drill ships and platforms [Figure 1]. It is called UUC type unit [Figure 2], which is a modern design to afford advantages for underwater mounting and demounting. In general, there are from 6 to 12 thrusters installed for each platform and the units can keep the platform at the same place even in the storm. The product has its certain market, well-defined big picture and customer groups, the understanding of the situation has been established at the beginning of the project.

Targeted Service Scope

To start looking at the focused UUC lifecycle [Figure 3] as the part of background study, there are 10 steps included in the emphasized process: Sales, Project Startup, Engineering to Order, Purchasing Components, Manufacturing, Logistics, Shipyard Warehouse, Installation, Commissioning and Product In-Service. For each stage, respective service details are involved with multiple stakeholders and actions. As the time scope of the whole procedure may take

up to 7 years, a large number of interactions happen between the company and its customers during this long period. In other words, the UUC customer journey becomes quite complex.

UUC Customer Group

Rolls-Royce Marine is trying to expand its offshore exploration and production market through developing UUC thruster and related service. The main customers for UUC product are the shipyard that purchase the thruster from Rolls-Royce, and the owner of the ship closely affects the marketing phase and actually uses the thruster. Both of them have worldwide locations, but shipyards are mostly situated in Asia, and ship owners are mainly in U.S. and Europe. The company regards them as very important clients with a long-term relationship. Thus, Rolls-Royce needs to control all the steps of UUC process because it is applied in huge vessels which cannot afford any mistakes when in-use.

For this type of the industrial services, Rolls-Royce is offering different marine solutions for satisfying diverse UUC customers' requirements. During each order and business, Rolls-Royce attaches importance to understanding the customers' voice and their priorities, in pursuit to supply the equipment and integrated system that are customized, innovative and reliable.

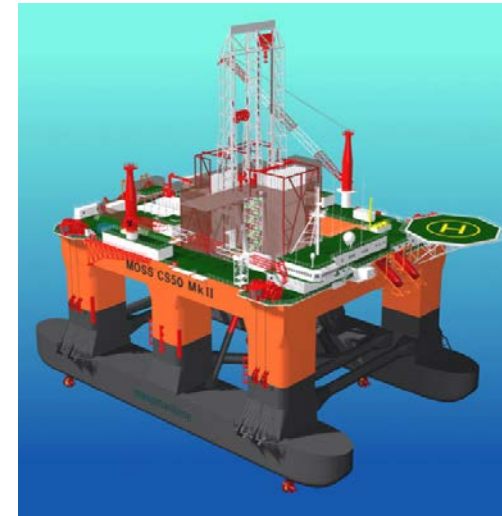


Figure 1: Application on the drill ship



Figure 2: UUC azimuth thruster

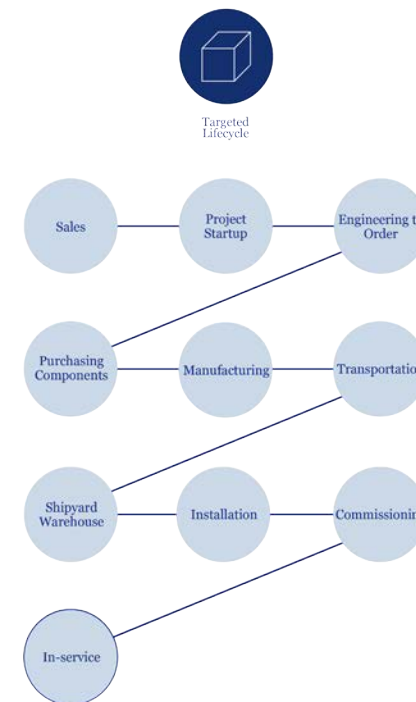


Figure 3: Emphasized UUC product lifecycle

1.4 Figuring out the Roots of the Thesis

Before starting the project, it is necessary to identify and highlight the reasons why the thesis topic was proposed under the specific context.

For B2B operation in metal and engineering Industry, the complexity of customer classification and the stakeholder network trigger the service to be a challenging process. Compared to other azimuth thrusters, UUC possesses the clearest scope in the customer base because it is only applied in one type of ship. Rolls-Royce could define its customer range and reach the customer through coordinating the work in an easier way. Also, UUC is one of the most valuable units that would benefit the company to achieve most profit after refining the customer service experience. As a consequence, it will be the best starting point to see if Rolls-Royce should consider more relevant study in the future and expand the study methodology to other challenging areas.

Moreover, there is few study to represent the B2B service process from customer point of view in the marine market. In Rolls-Royce Marine, only product lifecycle and internal working process could give partial explanation and clue about how the touchpoints work with their customers, but without considering sufficient customer experience. "Marine is quite old-fashioned, things have been done for many years." one internal employee said during the interview. In fact, most of the development in the marine area focuses on the product itself and there is still big room for promoting the customer service experience that surrounds the product.

Meanwhile, the touchpoints between UUC customer and Rolls-Royce have existed for a long time, however, the evaluation or assessment for the current service process has not been fully considered so

far. Consequently, there is little clue about how to support the company to make the enhancement for the future interaction with their customers. Through utilizing experience as a lens, the project aims to help the company understand the current situation from a new perspective, gather customer experience voice and try to offer better service experience. It will be quite challenging but also quite significant for the organization's future decision. It could not only benefits the customers when they are doing business with the company, but also strengthens the development of the company itself with lasting customer loyalty.

From an academic angle, there is inadequate literature concerning both service design and experience design in B2B sector. Specifically, there is a lack of references about looking at industrial services with experience thinking in B2B compared to B2C commerce transaction. Therefore, the result of the thesis might be able to contribute to the proceeding of this domain in the near future.

1.5 Research Questions

Before starting the project, the original design brief from Rolls-Royce Marine has been framed into three objectives. The company's first proposal is stated below:

The project will focus on the exploration of how to refine the customer journey mapping around UUC type thruster with an experience design twist. And the proposal will be came up with about what Rolls-Royce Marine could take actions with experience needs mapped to each touchpoint in a one-year outlook.

After the basic background study and further discussion with the company, the first objective for this thesis project was determined to support internal employees to understand and perceive the customer journey under UUC context. During every business with the customers, many Rolls-Royce staff from different departments will be involved into service work. In reality, only few people have the direct communication with external parties and the image about the clients and their context is not clear enough throughout the organization. By utilizing service visualization tools, the project could serve them to highlight and digest the importance of knowing what their customers are facing to. During this process, the stakeholders inside the company would know what kind of roles they are playing with their customers, what impact the role would lead to and how the impact would reflect to the customers. Just as psychotherapist Nathaniel Branden (n.d.) said, "The first step towards change is awareness. The second is acceptance."

The next goal is to utilize the research data to prompt internal understanding and realization about the big picture of customer experience in certain service stages. Mostly, the employees are reacting to the challenges from traditional problem-solving perspective around the product itself, but the study would bring a

new angle for the company to look at old gaps and new opportunities through customer experience-driven thinking. To figure out what customers truly care about, which kind of positive experience they already have and what they expect for the future would be a beneficial way for the company to be closer to the customers. In the meantime, the customer experience capabilities might be improved and a more agile organizational culture is emerging (Roto, Nuutinen & Smedlund 2015).

In addition, the study is going to provide insights about how the company could make a better experiential customer journey, and what are the critical steps the company could take actions around UUC product in the near future. In detail, the project aims to satisfy and reflect the importance of the part of customer experience goals in their journey. Trying to figure out how to map and make meaningful connections between the company and UUC customers, and how to reduce the pain points from experiential angle for key service development are the objectives the thesis would achieve in the end.

To sum up, the research questions that the thesis will emphasize on are:

- 1. How to support internal employees of Rolls-Royce Marine to understand and perceive the customer journey under UUC context?**
- 2. How to utilize customer journey map to bring Rolls-Royce the big picture of UUC customer service experience?**
- 3. How to enhance the UUC customer journey from experiential perspective in the near future?**

1.6 Thesis Structure

After introducing the project background and the definition about the study context at the very beginning, the background research which includes the literature review and company materials is described in the next chapter. From the academic perspective, it comprises of the literature concerning service design and experience design in B2B context. Also, the study related to current customer journey map for better understanding the situation of Rolls-Royce Marine has been covered as well. For Chapter 3, it represents the internal and external research in detail, which consists of respective goals, plans and results from different type of studies. In the end of that chapter, the holistic customer experience map with reflection and consideration for the future is revealed. How to capture the key opportunity among the customer experience map, how to utilize experience-driven design approach to bring customers better service experience and what the new journey contains will be presented in Chapter 4. Meanwhile, it also includes the idea prototyping process from information architecture to the Hi-Fi prototype. Evaluation as the following stage, there is the explanation about how the concept was evaluated from the internal perspective and the valuable feedback during the discussion. Chapter 6 is a summary of the limitations and benefits of this thesis study, as well as possibilities for future research.

To provide an overview of the research and design process in this case study, UUC Customer Experience Map has been constructed based on background and theoretical research together with Internal and external study concerning UUC customer service experience. The result served as groundwork for further brainstorming and deciding on the orientation that formed the focus of developing around UUC service. Experience-driven design approach was selected here for ideating the service journey from experiential angle, which

includes setting the an experience goals at first and then coming up with the concept that could be traced back to the targeted experiences. The ideation process followed just after framing the goals and sometimes they were even conducted simultaneously. After the storyline of improved UUC service has been established, it continued with building the prototype for concept development. Also, the reflection sessions happened several times throughout the thesis process, the key ones aimed at selecting the orientation for service enhancement and evaluating the two outcomes of this case study respectively.



Figure 4: Timetable of the thesis

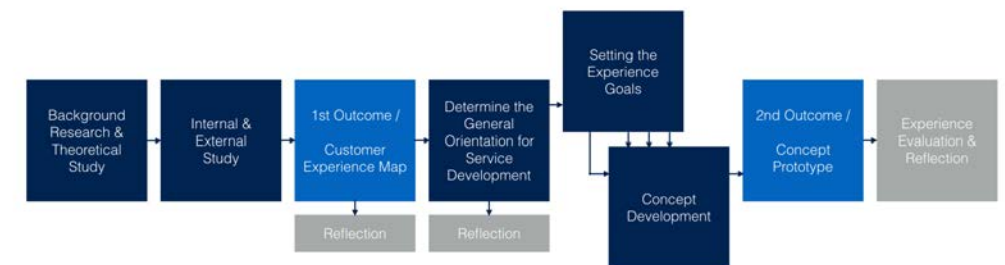


Figure 5: The overview of research and design process

Chapter 2 / Background Research

In this chapter, the research concerning the literature review, company materials and relevant student work will be introduced as the theoretical background study. As the thesis plans to see the industrial services through an experience lens, research related to experience design and service design domain is emphasized. It starts with telling the situation about experience in business-to-business (B2B) context, which involves the explanation about the term experience, characteristics of B2B transaction and the combination of these two aspects. Moreover, details will be represented about the design approach that the thesis applied - experience-driven design, and also the role of experience goals in the design process. Thirdly, it will tell more about the experience evaluation, which closely connects to the research stage and the implementation for both project results. After that, the service design literature has been added under experience design scope, such as the value of visualization in service design and how the customer journey methodology supports mapping customer experience in the industrial services. Besides, it states the definition of touchpoint and researchers' attitudes between the touchpoint and whole service when improved customer experience aims to be achieved. Lastly, there is some literature interpretation derived from the company materials and previous student work, which support the following development from both company and academic perspective.

CHAPTER TWO BACKGROUND RESEARCH

2.1 Experience in Business-to-Business Context

In general, experience comprises of everything personally encountered, undergone or lived through (Roto et al. 2011). Hassenzahl (2010) describes an experience is an episode with sights and sounds, feeling and thoughts, motivates and actions. Meantime, experiencing as a verb, it involves one's stream of perceptions, interpretations of those perceptions, and resulting emotions during an encounter with a system (Roto et al. 2011). In researchers' eyes, experience is subjective, dynamic, holistic, situated and complex as well, it is interpreted through filters relating to certain contextual factors (Hassenzahl 2010; Buchenau & Suri 2000).

(Hassenzahl 2010). From "motor" goals, "do" goals to "be" goals, all of them should be thought over during the design practice. Especially for the HCI, motivating actions and providing appropriate meaning is quite important and necessary.

When experience is considered in design under its holistic property, it emerges from the simultaneous activation of those sub-processes represented by the three levels and integrates them into a meaningful, inseparable whole



Figure 6: A three level hierarchy of goals. Adapted from Hassenzahl 2010

As for the user experience field, the experience that people encounter with a product, service or a system is placed in the center (Roto et al 2011). It has been widely utilized nowadays but people still have different understanding from respective viewpoints. More and more companies take user experience as a serious objective, which not only pay attention to the functionality but also the emotion. It could support continuous success during the company development through strengthening the customer loyalty and attracting more new customers. However, in business-to-business context, the end-user is not acting as the only type of the customers, the customers' roles are more complex compared to B2C. Meyer and Schwager (2007) argue that customer experience is the internal and subjective response customers have to any direct or indirect contact with a company, and a successful brand shapes customers' experiences by embedding the fundamental value proposition in offering every feature. In the organization, customer experience does not improve until it becomes a top priority and a company's work process, systems, and structure change to reflect that (Meyer & Schwager 2007), which also implies that the employee experience matters in the meanwhile because internal roles could support the company to shape their customer experience if they would stand in the same line.

For this project, the customer experience is the primal domain to be covered because the customer in this thesis context doesn't refer to the end-user too much but mainly the role of buyer. Still, both groups should be kept in mind all the time because their experiences affects each other. Meanwhile, user experience should not be left out as the customer is showing up as the user of UUC service.

Looking at business-to-business context further, the product, service and system are always more complex involving multiple stakeholders which include not only the end-user but also different kinds of intermediate parties. The value network is complicated as well and

actors affect each other. When the customer starts to purchase, the period could be lengthy. Circle Research (n.d.) argues that there are few customers in B2B market, but they create a disproportionate amount of revenue and relationships are critical between the customer and the company. Every decision has a greater impact on the rest of the stages, and Kindström and Kowalkowski (2014) argue that B2B companies cannot rely on superficial changes to their market offering. According to the research, sample size might be small in B2B studies and participants might be harder to reach.

So far, experience is extensively considered in the B2C context and there is few cases about utilizing UX(user experience), CX(customer experience) and BX(brand experience) in the B2B environment. The different context separates the roles of customers and actual use of the product or service. Roto et al (2012) describe the customer experience for business-to-business context: "having the best product is not enough, if customers do not like dealing with your company". To offer positive experience in B2B context has been assessed as a valuable route since it could enhance the productivity for users, efficiency for customers and bring long-term relationship with suppliers (Sundberg 2015). Lam et al. (2009) also argue that in B2B organizational buyer-seller relationships, loyal buyers are more likely to focus on long-term benefits and engage in cooperative actions beneficial to both partners. For B2B customers, experience could have an indirect impact on supplier selection as previous experiences affect the decision making (Sundberg 2015). Consequently, if emotional bonds between companies and customers have been formed, it will be difficult for competitors to imitate or sever (Mascarenhas et al. 2006), the customer loyalty would be strengthened and customer satisfaction would also be positively affected (Lam et al. 2009).

Especially for the context of this thesis project, Rolls-Royce Marine is developing based on technology-driven orientation for many

years. But the product UUC itself might not be so complicated compared to other units, the experience would be the key factor that helps the company differentiate and stand

2.2 Experience-Driven Design

Experience design or experience-driven design have gained acceptance and been discussed widely in the Human-Computer Interaction (HCI) and Interaction Design relatively (Wright & McCarthy 2010, Hassenzahl 2010). From the evolution of usability engineering to current experience design, more perspectives have been considered in interaction. For example, fulfillment of emotion as one of the basic human needs is a source of positive experience with interactive products and technologies (Hassenzahl et al. 2010).

Experience works as the starting point and the primary objective of the experience-driven design process (Hekkert et al 2003). Hassenzahl (2010) underlines that "experience before product". Experience is emergent, and in experience design, we use functionality, content, presentation and interaction as materials to create and shape experience. Experience is prime, and the product only a means. Accordingly, one of the basic claims of experience design is to consider the experience before products. There are at least three reasons to consider experience as a design objective: their self-defining nature, their power to make us happy and to energize our behavior (Hassenzahl 2010). And Schifferstein (2012) argues that focusing on experience during the design process instead of on problems or products brings design back to its essence: creating new, engaging, pleasant and useful experiences for people.

Furthermore, experience-driven design becomes an influential design strategy in industrial design (Hekkert et al. 2003), it applies the targeted experience, and stories around

out from other suppliers with both functional and emotional offering. That is to say, the experience-driven strategy would play a crucial role towards the development around UUC.

them, as a central concept of the design vision (Hassenzahl, 2011). Experience-driven design is closely connected with certain context, interpretation and participation (Wright & McCarthy 2010). Compared to problem-driven design, the emphasis of experience-driven design in utility, usability and experience are quite different because emotional and experiential elements are the main focus during the process (Kaasinen et al. 2015).

In this thesis project, experience-driven design is the approach utilized to refine the customer journey map. Looking through the experience-driven design process from setting respective levels of experience goals, different layers of ideation, evaluation and development to the final implementation and launch, it involves at least two vital challenges. The first is to determine what experience to aim for and then design something that is expected to evoke that experience (Desmet & Schifferstein 2011). In an ideal context for experience-driven design, it demands entirely new product, enough room for application of technology and expertise, all parts tailor-made for this purpose in-house and a focused and motivated work towards a clear UX target (Roto 2013). But in reality, the situation differentiates a lot, for example, the competence is fixed and only old product is available to be enhanced. Roto emphasizes that experience target is the key to helping to cope with the reality.

Concerning the second challenge mentioned above, some of the researchers argue that we can never really "design experience", but experience can be "designed for", experiencing is a constructive activity (Sanders & Dandavate

1999, Kaasinen et al. 2015). Sanders and Dandavate (1999) signify that knowing about users' experiences, then, becomes vital to the process of designing the communication. If we have access to both what is being communicated and what experiences influence the receipt of communication, then we can design for experiencing. Moreover, Rozendaal (2010) argues that four design competencies are important to design for experience: the ability to map-out the rich and dynamic contexts from which experiences arise, awareness of the coupling between body and subjective experience, the ability to verbalize and materialize experiences and emotions, and lastly the competence to relate experience to value. For better design for experiencing, researchers and designers should learn to access people's experiences in past, current and potential, and then the source of inspiration

2.3 Experience Goals Definition

As mentioned before, the key prerequisite and the ideology of experience-driven design is to define what experience to aim for (Desmet & Schifferstein 2011, Kaasinen et al. 2015), that is to say, the definition of experience goals, which concretize the intended experience (Kaasinen et al. 2015), provide the directions and objectives to follow later on in the design process (Väättäjä et al. 2012). Lu, Roto (2014) and Kaasinen et al. (2015) mention that they prefer to use term goal instead of requirement for the experiences to design for, because a designer can only facilitate instead of force the user to feel a certain way about the product or service, and it is difficult to guarantee that a certain experience will always realize.

Commonly, there are some other similar terms and concepts with the experience goals, such as value propositions for business planning, user requirements for human-centered design process, and also design brief and

and ideation for design could be reached (Elizabeth & Dandavate 1999). For B2B context, there are many intermediate parties such as distributors and customers involved, and their perspectives should be also taken into account in the very beginning of product development process (Abramov & Roto 2012). It is always worthwhile to think experiences through, and most of the time (Hassenzahl et al. 2010). And experience-driven innovation supports B2B companies to create appropriate interactions with all stakeholders. The product delivered to clients, contact with service providers, communication with authorities, relationships with employees, and responding to consumer worries are some of the ways people experience the company's brand values (Schifferstein 2012).

design driver (Lu & Roto 2014, Sundberg 2015). However, an experience goal more emphasizes on the intended momentary emotion or the emotional relationship/bond that a person has towards the designed product or service, and it states a profound source for a meaningful experience (Lu & Roto 2014).

Good user experience is nowadays the goal of most products and services intended for the consumer market (Kaasinen et al. 2015). And a good user experience (UX) goal is regarded to drive the innovation and invent new possibilities towards the positive experience, to help in communicating objectives and ideas of experiential aspects of product, and to set a standard for justifying the design evaluation and measurement (Väättäjä et al. 2012, Lu & Roto 2014). As Väättäjä et al. (2012) argue that the meaning of the goals is emphasized particularly in the early stage of design. In this phase, the goals and their design implications in the

context environment should be meticulously defined. In later product development phases, the aim should be that each design solution implementation is traceable back to the originally defined UX goals.

Furthermore, A good UX goal should be clear enough, if not, the experience is easily left as a good intention without any concrete influence (Kaasinen et al. 2015). And Kaasinen et al. (2015) state that concrete UX goals may be most useful through applying experience-driven design approach in an industry context, where various stakeholder groups need to agree on what to design. In detail, the researchers (2015) argue that the UX goals are utilized as a means of communication between decision makers and UX professionals within the business context. Also, those goals could support the company to keep user experience in focus through the multidisciplinary product development and marketing process (Kaasinen et al. 2015). From the company perspective, brand experience (BX) should also play a role when considering the experience goal for design, because today, the whole organization is building the brand instead of just a sole territory of marketing people (Roto et al. 2015). And Väättäjä et al. (2012) also declare that designers need to combine experiential objectives with business levers when setting the goals for a service experience.

In the meantime, the experience goals should

be considered based on respective emphasized time spans of user experience. Roto et al. (2010) propose that it is important to clarify the time span of UX [Figure 7] that is in focus when discussing or addressing user experience: experience before the first encounter through expectations formed from existing experience (Anticipated UX), experience related to certain brief moment during the interaction (momentary UX), experience concerning appraisal of a specific usage episode (episodic UX), and experience formed through a series of usage episodes and periods of non-use (cumulative UX). For longer time spans, it is possible to structure UX in terms of a lifecycle or journey and previous experiences influence a future one (Roto et al. 2010).

When it comes to the approaches of defining the "target experiences" that the idea is assumed to evoke in users (Mattila 2010), multiple viewpoints from stakeholders including users, designers and companies are integrated and utilized in the setting process: what kinds of experiences they value, what kinds of experiences can be facilitated, and what kinds of experiences the company aims to provide for customers (Kaasinen et al. 2015). Looking at the five different approaches for UX goal setting represented by Kaasinen et al. (2015) - Brand, Theory, Empathy, Technology, and Vision, they are acquiring insight and inspiration with supporting the multidisciplinary character of UX.

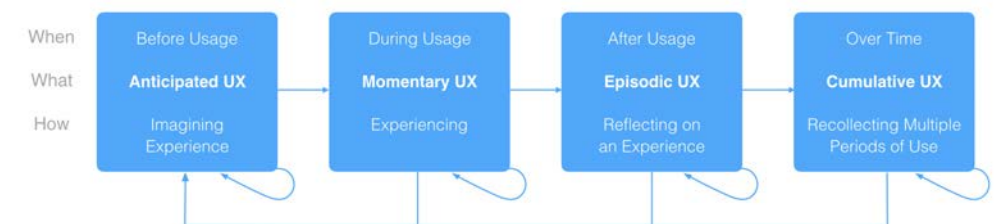


Figure 7: Time spans of user experience. Adapted from Roto et al. 2010

In this thesis context, the brand and empathy methodologies were primarily applied during the definition of UX goals for the final concept. Part of the reasons about choosing those two approaches derive from the relevant literature review as follows.

Experience-driven innovation aims at a consistent company, brand, and product experience. In industrial cases, the brand should be a self-evident and most obvious source for experience targets, and the brand approach ensures that the UX goals are in line with the company's brand experience and image that a company wants to convey to its customers (Kaasinen et al. 2015). Moreover, Kaasinen et al. (2015) argue that brand-based approaches can produce focused and easy-to-share UX goals. Sometimes, the high-level goals could directly come from the brand identity, but the interpretation is still needed here because it may not be self-evident how the brand promise should show in an individual product (Kaasinen et al. 2015).

Wright & McCarthy (2008) introduce the meaning of empathy as understanding what it feels like to be that person, and what their situation is like from their own perspective. And thorough user understanding was a source for UX goals in all the cases. The empathy approach focuses on knowing the actual users' world and stepping into their shoes with empathy, which could be obtained from user observations and interviews, as well as interviews with relevant experts (Kaasinen et al. 2015). Väättäjä et al. (2012) declare that user studies are, indeed, a frequent way to determine UX goals. By understanding users with empathy, the designers can gain inspiration for products and services that provide good user experience (Kaasinen et al. 2015). Especially, when a company representative explores their customers' worlds with the eyes of a fresh observer, the company can redirect existing organizational capabilities to new markets (Kaasinen et al. 2015). Furthermore, Sanders and Dandavate (1999) introduce Make Tools to access people's feelings, dreams, and imaginations in order

to gather inspiration for experience-driven design. When it comes to designing for work environments, empathy alone is not enough, then thorough domain and work analysis is needed based on extensive studies of the certain area (Kaasinen et al. 2015).

As for the rest of approaches for setting the UX goals, the theory approach utilizes the available scientific understanding of human behavior and offer the explanation why some experiences are satisfying and engaging for a user (Kaasinen et al. 2015). The technology approach considers the new technologies that are being introduced and their positive or negative influence on UX. Kaasinen et al. (2015) describe that the relevant UX goals can focus on minimizing the anticipated negative experiences and strengthening the positive experiences as well. The last approach - vision, it has good potential in creating something totally new, but as the connection to the user's world is quite loose, user acceptance of the visionary solution may not be guaranteed. In other words, the approach emphasizes on renewal and introducing new kinds of user experiences, but challenges can arise when the vision is far from the users' current practices, as user acceptance is difficult to foresee (Kaasinen et al. 2015). From researchers' point of view (2015), it is beneficial to apply as many of the approaches as possible due to the multidisciplinary nature of user experience. And Kaasinen et al. (2015) argue that using the different UX goal-setting approaches together brings in the viewpoints of different stakeholders, commits them to goal setting process and emphasizes UX as a strategic design decision (Kaasinen et al. 2015).

2.4 Experience Evaluation

In this thesis project context, the literature review about experience evaluation is quite important because it requires both reflecting the current customer service experience measurement and also the UX evaluation about refined customer journey map.

How users feel about using a designed system is a common requirement for UX evaluation (Obrist et al. 2009). The debate on usability vs. user experience measurements animates many HCI discussions (Bevan et al. 2008). Many methods exist for doing traditional usability evaluations, but user experience (UX) evaluation differs from it, which includes more hedonic, emotional and subjective characteristics instead of effectiveness and efficiency (Roto et al. 2009, Vermeeren et al. 2010, Obrist et al. 2009).

Bevan (2008) signifies that there are mainly two reasons for doing the user experience measurement: determine the quality of UX (summative measure) and find out improvement areas (formative measure). For the summative measure, it can be used to establish a baseline, make comparisons between products, or to assess whether requirements or targets have been achieved; And for the formative measure, it can obtain a better understanding of user needs and to refine requirements, which mainly gather from qualitative data (Bevan 2008). In the company operation, UX evaluation plays a key role in ensuring that product development is going (Roto et al. 2009). Roto et al. (2008) claim that the earlier user experience can be evaluated the more likely the product will be successful, as the pros and cons of each concept could be spotted. Through analyzing the UX evaluation results from different phases, as well as gathering field feedback for existing products and competitive trends on the market, UX improvement could be supported as a continuous process of identifying problems, gaps and new ideas in

the company (Roto et al. 2008). In reality, UX people is still a minority in the project and the evaluation is mostly outsourced by the company (Roto et al. 2008).

As for the methods of UX evaluation, different approaches are applied for different purposes. Naturally, there are camps to bring respective arguments about choosing different methodologies for the evaluation, such as the discussion between the qualitative and quantitative UX measurability. Swallow, Blythe & Wright (2005) signify that qualitative data provides a richness and detail that may be absent from quantitative research while Hassenzahl (2010) argues that accounts of according experiences might differ in their quality, the experience itself does not. Also, the combination and mixture of different approaches are also recommended by some of the researchers.

For choosing the most appropriate method to utilize, several questions need to be figured out. Roto et al. (2010) list the categorization of UX evaluation methodologies relied on who are the evaluators, time of restrictions, type of method, studied period of experience and product development phase, which aims to help in deciding the right methodology before the measurement. Under the project context, the appropriate way needs to be found to motivate the participants for giving meaningful reflections. And it is important to vividly imagine the usage situations so that the participant can evaluate the usefulness and thereby the value of the system for her/him (Roto et al. 2008). Also, Roto et al. (2008 & 2009) point out that UX evaluation in industry situation always requires lightweight and cost-efficient methodology without too many resources involved, especially for product improvement; The theory behind UX evaluation methods needs to be applicable for various types of products and prototypes under the real

life context.

In the meantime, many researchers claim that the relevance of prolonged use for market success has been highlighted in industry, such as Kujala et al. (2011) argue that the evaluation about long-term user experience is needed because the momentary experience is not quite reliable for predicting the UX in a real life context or justifying the success of a product. Also, Norman (2009) and Karapanos et al. (2009) declare that memories are more important than single experiences in users' overall evaluations of products from the early learning and enthusiasm to becoming a part of daily life. For B2B suppliers, it is important to bear that

2.5 Experience-Focused Customer Journey Map

Through utilizing experience lens, the industrial service under this thesis context has been targeted, which involves the scope from purchasing the product until the product is in use. Vargo & Lusch (2004) and Grönroos (1990) represent a service as the series of activities that happen over a period of time, including sequences of operations and events targeted to provide solutions to the customer's problems and requirements. Polaine et al. (2013) argue that the core service value could be grouped into providing care, access and response.

In Forlizzi (2010) eyes, a service design is produced at the time it is consumed and it may have few to no tangible properties. Service design has been defined as involving the orchestration of clues, places, processes, and interactions that together create holistic service experiences for customers, clients, employees, business partners or citizens (Ostrom et al 2010).

Some researchers make a comparison between the service design and experience design. For example, Forlizzi (2010) states that service is

cumulated experience would affect the next investment decision when the company is identifying and handling all customer touchpoints in order to create superior CX (Sundberg 2015). With understanding the involvement between the user's experience and a product over time, people could be better motivated to continued using a certain product and recommend it to others by word of mouth (Kujala et al. 2011). In other words, the UX evaluation could help achieve the goal of user experience design in the industry - to improve customer satisfaction and loyalty through the utility, ease of use, and pleasure provided in the interaction with a product (Kujala et al. 2011).

transactional and it supports the customer to achieve the goal; Experience, however, encompasses a much larger set of conditions: our everyday, moment-to-moment experience, understanding the world by comparing it with what we find familiar, and understanding changes in people and contexts of product use over longer periods of time. One of the ways in which service design differs from UX design or customer experience design is that it is not just focused in one direction, for example, the situation in which the staff are involved in delivering services are service user and service provider at the same time (Polaine et al. 2013). Here, the service provider experience matters as well.

Moreover, the connections between service and experience have been argued that the management of customer experience is about managing the delivery of the service and customer expectations against what is actually delivered (Polaine et al. 2013). Polaine et al. (2013) state that services can be promoted through positive experience by ensuring that they meet or exceed users' expectations, where

the service experience are mainly co-produced by the customer and their interactions with a touchpoint. The reason experience is important is that, by telling the stories of people who use or are affected by services, it is possible to either identify opportunities for innovation and improvement or describe future experience as a way to communicate designs (p. 131). Also, Zomerdijk & Voss (2010) mention that service organizations have long recognized the importance of the customer experience for customer satisfaction and loyalty. For delivering an experience-centric service, it requires the systematic management and design of customer experiences through the careful planning of tangible and intangible service elements (Pullman & Gross 2004). After setting the elements and getting the experience right, customers are less likely to switch to another competitor, and they will also recommend the service to someone else, in turn, doing the promotion work for the organization (Polaine et al. 2013).

Still, Clatworthy (2009) claims that there is little research related to how to design for experiences and a particular lack of research looking at the design of experiences for services. There is a clear need for more study that looks into the process by which design strategy is transformed into service experiences (Clatworthy 2009). Since 2009, this research field has attracted more and more attention, and the amount of study is growing.

Visualizations are commonly seen as one of the distinguishing features of service design (Segelström 2009). Kimbell (2008 & 2009) states that visualizations are identified as one of the three characteristics which define service designers' work in comparison to other design disciplines, and one of the main goals behind visualization is to make the services tangible. Various visualization tools all serve the purpose of interpretation and understanding, which also means communicating user data to different recipients (Segelström 2009, Holmlid & Segelström 2009).

Customer journey map (or experience journey, experience map or user journey), as a basic and dynamic tool applied in service design domain, it serves to highlight the time-based nature of services, interactions and emotional triggers (Segelström & Holmlid 2009, Segelström 2010). In the early days of service design as a domain, the tool was originally introduced with a strong focus on touchpoints (Parker & Heapy 2006). Segelström (2010) describes that the customer journey follows a customer throughout a service, and often also in the stages before and after the service interaction with identifying the important actions, encounters and physical evidence (Meroni & Sangiorgi 2011). It emphasizes the process which will be the basis of how the customer will experience the service – the focus is emotional and experiential rather than operational (Segelström 2010, Meroni & Sangiorgi 2011).

The customer journey approach is increasingly being applied to support the design and management of services, the differences in purposes and involvement practices reflect the versatile character of the customer journey (Følstad et al. 2014). Segelström (2009) claims that the intended audience of the visualization and the nature and content of the research data would mostly affect and decide the choice of how to design a visualization of service design research. Within the variation, a framework is developed by Følstad et al. (2014) to foster a common understanding of how the involvement of customers and internal resources could be conducted within the approach. Looking at the certain information from the framework under the thesis context, the output could be the gap between expected and experienced journey with the participation from internals and customers.

Motivations for using visualizations in service design could be sorted into three main reasons: to better communicate insights with the clients, to articulate insights from the user material collected, and to keep empathy as a way of maintaining the data 'alive'; (Segelström 2009). The customer journey map in this thesis

context could be seen as an interface to help communicate with stakeholders outside the design team, formulating and defining the design space for refining the existing journey, and empathizing with customers' memory for different customer-facing internal groups. The approach concerns the design, description and visualization of the user experience, including the potentials of different interaction modes, paths and choices (Maffei et al 2005). In the company operation, staff need to understand the role that they play in the customer-defined service journey for better serving their customers in the future (Tax et al. 2013).

In B2C context, customer journey maps are increasingly utilized for organizations to be able to better understand their service

in moments as well as in overview, through the customer experience lens. For example, the Rail Europe Experience Map [Figure 8] conducted by Adaptive Paths (2011), it brings the data through a visually engaging infographic that is easy to comprehend. However, there is still a lack of application of customer experience map in the business-to-business company, especially in the marine market with the complex stakeholder network and long-term service scope. In the Rail Europe case, building blocks for experience mapping are introduced, which consists of Doing, Thinking and Feeling modules. Under this thesis, the first result of the project - UUC Customer Experience Map utilizes partially similar framework mentioned above, but the construction has been developed based on the specific project context.

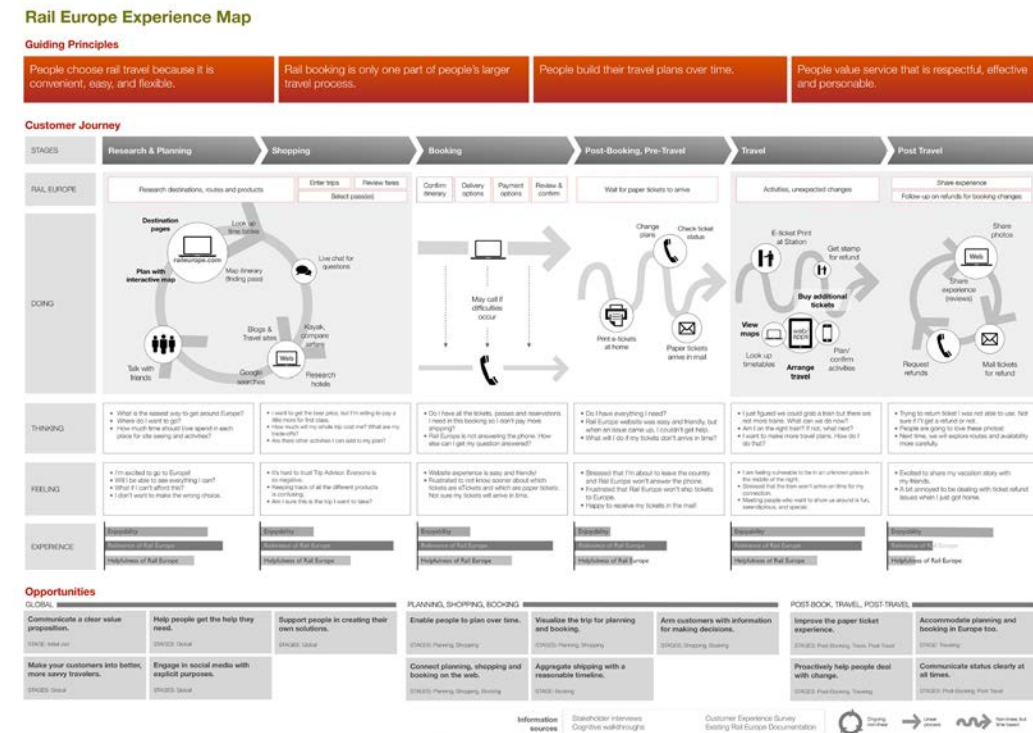


Figure 8: Rail Europe experience map. Adaptive Path 2011

2.6 Touchpoint in Service

As represented above, the customer journey approach originally has a strong emphasis on touchpoints (Parker & Heapy, 2006), different touchpoints are connected to different journey moments and stages, and more touchpoints involved, the more complex the journey is.

The term touchpoint could be traced back to marketing domain, where the integrated marketing is closely related to service design through three characteristics: understanding of consumer behavior, focus on the brand and the link to customer experience (Clatworthy 2011). In this area, touchpoints are considered as one major part of linking what is termed contact experience to the brand (Clatworthy 2011). When the touchpoints are considered in service domain, they are defined as the points of contact between a service provider and customers (Clatworthy 2011), and one of the pillars of service design (Koivisto, 2009). Koivisto (2009) separates touchpoints in service into four groups: channels, objects, processes and people. Also, Clatworthy (2011) states that touchpoints are one of the materials used by designers to understand, explore and develop innovative service solutions. He further presents a card-based toolkit that offers a tangible usage for the first stages of new service development. In this thesis, the internal interview approach is developed based on this tool for facilitating the conversation and mapping out the existing UUC service situation.

As for the typical touchpoints in business-to-business industry, they usually include advertisements, product brochures, company's website, face-to-face meetings and personal communication with customers, products, product packages and maintenance/repair services (Roto et al. 2015).

Clatworthy (2009) states that the semantic transformation for services requires a transformation into multiple touchpoint

behaviors, which are the platform for customer experience. The sum of all experiences from touchpoint interactions colors the opinion of the service. Roto et al. (2014) claim that various aspects influence the feeling a person has towards a brand, so all touchpoints between a company and the customer should strengthen the intended brand image. The targeted UX should show at the different touchpoints with the user, such as marketing, maintenance, and customer service (Kaasinen et al. 2015). Also, it is quite important to know how the certain touchpoint interacts with other touchpoints for constructing a better-integrated brand experience (Lockwood 2009).

De Chernatony (2003) states that services have an increased number of contact points between the customer and the brand making the service multi-tangible. And service design is a concept with high correlativity and holistic horizon rather than only focusing on specific product, environment or interaction (Lockwood 2009). Dawson et al. (2013) declare that "touchpoints matter, but it's the full journey that really counts." Also, Roto et al. (2015) propose for experience design researchers to pay more attention to all touchpoints. Lockwood (2009) argues that the company should emphasize the flow of customer experience among different touchpoints instead of concentrating on the single moment of customer journey. In most cases, customers would not alter their thoughts about the certain company if the organization only improve a few elements concerning the experience. And the narrow focus on maximizing satisfaction at those moments can create a distorted picture, suggesting that customers are happier with the company than they actually are (Dawson et al. 2013). When considering customers who exist in the current experience system, the way of working, coordinating and supporting among different elements of services should be figured out by companies (Lockwood 2009). The holistic

perspective on customer experience would benefit the experience management and organizational outcomes (Bitner et al. 2007).

2.7 Company Materials & Relevant Student Work

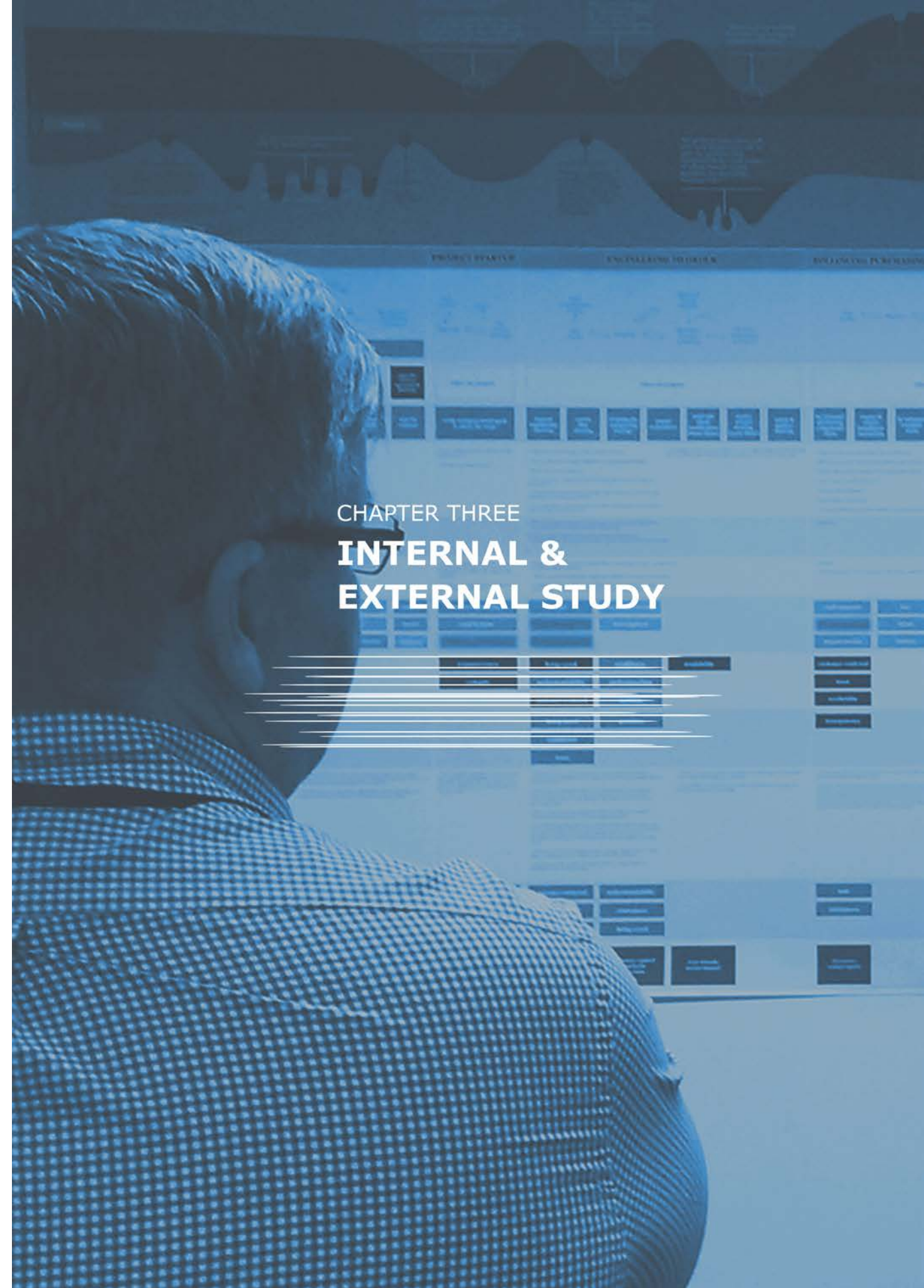
For better understanding the project context, the materials concerning Rolls-Royce Marine and emphasized product have been reviewed. Some of the literature was given at the very beginning of the project, others only required during the working process when the specific knowledge was needed. When it comes to the company-related information, Rolls-Royce official website, company annual report and mini guide offer the introduction about company vision, values, strategy, the main focus and market condition as well as capability and product portfolio, service network and innovation emphasis. Furthermore, knowing about the internal working process, internal project management system and brand guideline contribute to the practicality of internal research, concept generation and implementation.

As for the product-related information, the history brochure of azimuth thruster, UUC fact sheets and marine product system catalogue represent the general expertise about technical and operational characteristics of UUC unit. Through reading the details from service manual / user guide that each customer would receive during the business, the actual situation

becomes clearer and the information structure in the manual has been developed and applied into the Hi-Fi prototype of the refined service concept.

In the meantime, some relevant student work has been reviewed, such as “Experience Design in the Sales Process” project accomplished by Hanna Markgren and Kajsa Sundeson, the work aims at bringing good experience to the Rolls-Royce sales process, which is also one of the stages of this thesis scope. Moreover, the project “Design for a New Thruster Cover” done by Carolina Rebelo and Tae Yong Kim presents how the user experience has been enhanced and communicate the brand promise at one of the Rolls-Royce touchpoints - product cover. Apart from that, Netta Korhonen’s thesis work “Making Sense of Complex Storie, Experience-Focused Customer Journey Mapping for Industrial Services” has assisted this thesis a lot because of the similar starting point we have even though the company context is different. Most of these literature belongs to FIMECC UXUS research program and has the collaboration with B2B company, they have offered the valuable insights both from the company and academic angle.

Standing at the intersection of service, experience and business-related domain, this thesis aims to contribute a step forward to the proceeding of study on exploring industrial services through utilizing experiential angle in B2B context. I hope that the thesis work could help the readers who are studying similar circumstance, and support the Rolls-Royce Marine in considering its old challenges from a new perspective along with to promote more experience actions in the organization.



CHAPTER THREE INTERNAL & EXTERNAL STUDY

Chapter 3 / Internal & External Study

Most large companies are adept at traditional market research, segmentation and product design, but many lack the customer research concerning real customer interaction such as focus groups, interviews and understanding behaviors (Allen et al. 2005). In this thesis, both internal and external study had been carried out for doing the customer research. This chapter begins with the description of mapping the UUC service process with touchpoints, which was conducted with in-house employees in Finland. The first mapping mainly aimed to identify different elements of UUC customer journey and gather internal understanding about UUC customer service experience. After that, the external study was conducted in America and Asia to figure out the first-hand customer experience, possible missing UUC customer journey context, key moments and interactions during UUC customer journey, and crucial problems and potential opportunities of UUC customer journey from experiential angle. Based on the data integration and analysis from inside and outside the company, the UUC customer experience map was completed as the first outcome of this thesis, which also answered the first two research questions of this thesis - "How to support internal employees of Rolls-Royce Marine to understand and perceive the customer journey under UUC context?" and "How to utilize customer journey map to bring Rolls-Royce the big picture of UUC customer experience?".

3.1 UUC Service Process Mapping with Touchpoints in Rolls-Royce Marine

As the starting point of the case study, it is vital to collect internal understanding about customer service experience and existing touchpoints as well as to figure out internal stakeholder network for knowing how the results could be utilized in practice. During the kick-off meeting, targeted UUC service scope had been defined. The process starts from making the contract to product in service for new shipbuilding case. It could be roughly divided into ten stages and each stage involves many respective detailed steps. The current service begins with the identification of customer requirements as the product is tailor-made, and the whole service period generally lasts for several years with lots of interactions with customers. Also, internal support materials had been viewed, such as key working flow and quality plan that illustrate the first image of UUC service

and the organizational structure regarding customer face (selling the units), operation side (designing and delivering units) and after-market services (maintenance). After that, the main customer type had been introduced under emphasized context - shipyard and ship owner. The yard is the target Rolls-Royce needs to chiefly convince for getting the deal and directly interacts with, while the owner is the one who conducts marketing before sales, to supervise the procedure in the yard and utilize the product in the end. Rolls-Royce constantly aims at building the long-term relationship with both customers that is the basis of company prosperity. In addition, a possible challenge was identified in advance: it might be difficult to gather the internal staff who travel a lot as the schedule is always intense and potentially changeable.

3.1.1 Internal Interview in Rauma

For conducting the internal study, 11 Rolls-Royce employees from different business areas had been invited for individual interviews. Each conversation lasted for around 1 hour, and it was designed as a semi-structured interview with the combination of applying touchpoint cards (Clatworthy 2011).

The internal interviews aimed to figure out detailed service steps for each stage, to highlight the most important interactions and interfaces between the customer and employee, to construct the first image of customer and understand different roles of internal stakeholders, and to gather the current customer experience and their expectation around touchpoints through internal eyes. Besides, the internal study results should enable to be integrated and compared with the external study outcomes.

Before the interview, questions and topics were defined to generate the conversation guide (Harrell & Bradley 2009). As the icebreaker, employees were invited to introduce their job characteristics and the service stages they are involved in during the daily work. By pointing out specific discussion scope, the interviewees were asked to tell more details about their internal and external customers, describe their typical image and the most important interactions. The existing way of collecting customer data had been brought as inquiry to the staff as well. Sometimes, the conversation raised the short but valuable discussion that strayed from predefined guide based on certain internal answers.

In the meantime, touchpoint cards were utilized during the interview to map out the current situation of UUC service process. The card-based tool is originally designed by Simon Clatworthy and the set had been developed under the thesis context, for example, some of the cards were removed and other more relevant touchpoints were

added with appropriate images. Also, there was a service journey board with a baseline and empty slots that were available for placing the cards and notes in order. At the beginning of this mapping exercise, the interviewees were told to switch their role to customers just like they described before, and to illustrate detailed steps in a sequence what the customers go through as they do business with internal staff over time. The content had been written down on separate post-it notes to structure the horizontal line of journey board, and different colors mean the actions that happen under different customer situations (e.g., new customer and old customers). Then, the developed touchpoint cards were offered to participants for reading through and picking out the interactions that are relevant at each step, and blank cards were enclosed for filling in missing ones as well. After touchpoints had been identified and attached to respective service steps, it started to talk about customer experience revolving different interactions, how customers see the service journey through touchpoints and what are possible customers' expectation. In summary, the toolkit was chosen to support the conversation rather than just framing a visual service map. The discussion always followed after interviewee's each action to figure out the reasons behind and the stories happened in their memory. The detailed interview plan can be found in the appendix. After the staff interviews, each voice recording had been transcribed for further data analysis.

3.1.3 In-House Study Findings

By analyzing the in-house interview data, the first finding through affinity mapping was about the connection between the two types of customers - ship owner and shipyard. Even though the most direct communication happens between the shipyard and Rolls-Royce in a new shipbuilding case, the role of the owner is still vital because of the particular relationship the yard and the owner personally have. The following customer interviews emphasized on both of them and Rolls-Royce could try to explore how to promote the next sales process with owner after one round business with shipyard from the long-term horizon. The objective is to stimulate the customer experience to flow between two aspects.

Also, the question about the current channel for collecting customer data had been figured out. Except for immediate feedback to the contact person, the annual satisfaction questionnaire is sent to customers worldwide to gather the external voice. But from internal comments, the received feedback was not applied to bridge the gap between customer expectation and current customer service experience.

Through communicating with people from different working areas, a typical phenomenon had been uncovered about internal understanding on customers. Apart from sales people and project manager, most staff know little about customer's behavior, emotion and experience during the service process. The situation could be closely associated with their working flow, It is common for the support team to just finish the work demanded by the contact person (e.g. Rolls-Royce project manager) and they do not know much about the customer details behind certain work. Among the in-house working environment, the customer information is available in small scale and unshared to most of the departments, which might be a result from

the culture of marine industry - relatively traditional and conservative. It also led to the daily communication being repeated thus becoming time-consuming along with misunderstandings, especially for the staff who are working on several projects at same time.

For UUC long-term service journey, the most widely-used communication channels consist of phone, email and face-to-face meeting. Looking at some key touchpoints such as product material and customer manual, they are the most important interfaces to communicate technical details and practical guide for product operation with customers. More attention should be gathered for improving the customer experience on those touchpoints. For now, most of them are delivered as digital files with hundreds of pages. Better integration of information is necessary. During the interview, some staff did not give the critical feedback about current customer experience, instead, they were talking about their working experience. It was also beneficial to have this kind of data, which could act as the comparison with the external ones. Simultaneously, there was some expectation from employees, for example, the way of coordinating work could be enhanced that will make them be closer to customers and the information involved could be more interactive and transparent.

For marine industry, its particularities and characteristics should be pointed out when considering the customer experience in service process, which was also another finding through data analysis. The customers are located in different countries, thus obstacles such as long distance, time difference and culture diversity require to be considered. Moreover, the traditional communication tool such as email is preferred by most people as it is black and white and serves as evidence to the business, and staff could follow the history.

Furthermore, the personal contact is extremely important in marine industry and the support is always required 24/7. Additionally, the experience matters not only for the single customer but also among the customer group, because the experience could be shared by word of mouth.

Lastly, there were a couple of findings regarding the product itself and brand emphasis during the staff conversation. For UUC azimuth thruster, the unit construction is not too complicated compared to other types of products, but the challenge is the demanding application. The cost to keeping running and operating UUC is quite high, so the internal staff need to control all the steps of the service process in case of potential problems. Also,

during the internal interviews, "Trusted to Deliver Excellence" were mentioned many times, which represents the internal focused attention on the brand value when they are doing business with customers. They also highlighted that the Rolls-Royce brand really promotes the UUC itself and raises the customer's expectation.



Figure 11: In-house Data analysis with affinity diagram

3.2 UUC Customer Experience Mapping

To investigate and track first-hand customer experience in UUC service journey, the external studies had been proceeded in Asia and America with the shipyard and ship owner. Through in-house research, the employees represented key customer journey steps with relevant touchpoints, but there might have missing points, different priority and emphasis from customer perspective. Also, the study was a good chance for customers to evaluate Rolls-Royce Marine performance based on their previous interaction, and uncover the truth of customer experience to the organization. By analyzing the data, pain points and opportunities had been identified as well as the reasons and cues behind. At the end of this chapter, the first outcome of this project will be presented - UUC customer experience map, which integrates customer voice with internal

study results and offers the roots for taking actions on refining UUC customer journey introduced in next chapter. Likewise, more reflection and consideration regarding the first outcome will be described.

3.2.1 Customer In-Depth Interview & Local Staff Interview

As the UUC customers are situated all around the world, the customer research was conducted in collaboration with the design firm - Idean, which consists of branch offices in different countries. The external interview approach was discussed and developed through our collaboration, and Idean was responsible for handling interviews overseas and delivering the raw research data to me later on. Then, I was working on data analysis, synthesis and constructing the UUC customer experience map.

For customer research, it primarily desired to enrich the understanding about customer persona, perceive the stakeholder network outside Rolls-Royce Marine, and find out possible missing service steps and touchpoints. Further, identifying the key moments and interactions during customer journey, and capturing customers' positive and negative

experience through different touchpoints were also the external study objectives. Besides, the research tended to collect customers' expectation for their better service experience, and recognize key problems and opportunities of UUC customer journey from experiential angle.

After the kick-off meeting with Idean to introduce the project background, objectives of customer study and my first proposal of research approach, we sat together to discuss and develop more details regarding the inquiry questions and proper interview toolkit. Before the customer interview officially started, one internal pilot test had been done in Rauma to confirm its practicality and utility. After the final adjustment, the interview plan was delivered to Idean's local research team with a briefing on the content and background information.



Figure 12: Collaboration with Idean design firm to develop the interview approach

Looking at the customer interview plan in detail, the plan was to spend approximately 1.5 hours per each conversation and it demanded three kinds of materials [Figure 13] to be utilized. To begin, the UUC service process cards that covered 10 important service stages were one of the materials, and those stages cards were grouped into five phases: Project Startup, Before Delivery, Delivery, After Delivery and Warranty & Sales. After that, the interview script was needed for the interviewer to follow the instruction and question. The experience map, as a documentation template, the interviewee then filled it according to their

impression and notes after the conversation with customers. The map left blank slots for recording selected service stages by the customer, the dynamic stakeholder relationship, communication channel, and experience curve that determines the quality of long-term customer experience with marking the reasons at approximate locations on the curve (Kujala et al. 2011). Just as some researchers argue that the experience curve is intended to be used in a face to face setting where the researcher is better able to inquire into the participants' stories and thoughts (Kujala et al. 2011).



Figure 13: Customer interview service process cards & documentation template

At the very beginning of the customer interview, the interviewer introduced briefly about project background, the structure and goals of external research. Then, the warm-up questions identified the participants' job description and relationship with Rolls-Royce, also his/her viewpoint about Rolls-Royce brand image and general performance compared to other competitors. After that, Idean people presented the service process cards to customers, and let them verify, choose and explain the most relevant and important ones during the UUC business. Focusing on selected service cards, the customers illustrated and evaluated the

touchpoints involved at certain stage together with describing the stakeholder map. As for the next part of the interview, the customers were asked to highlight both satisfied and problematic points that appeared to their previous experience during the UUC service journey, and further exploration and discussion about their certain customer experience had been done in the meantime. Lastly, the inquiry about customer expectation and concerns on working with Rolls-Royce in the next project was delivered to participants. In the appendix, the research script gives the full explanation of customer in-depth interview.

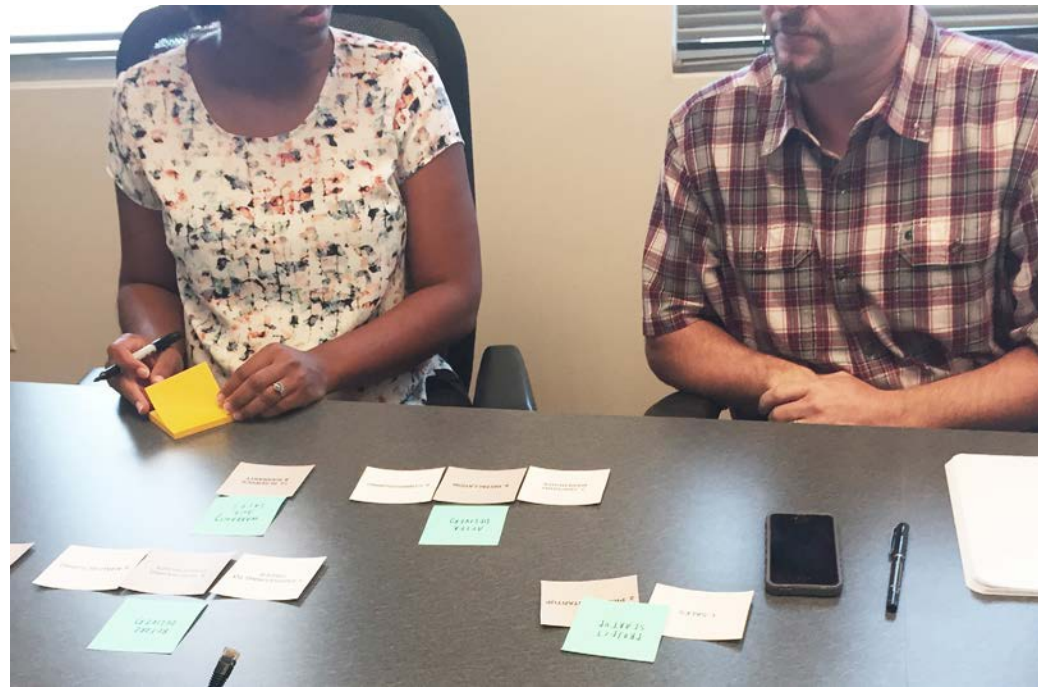


Figure 14: Customer in-depth interview

At the same time, several internal interviews from Rolls-Royce local branch offices had been conducted by Idean. It was helpful to collect their thoughts because the local staff have the deeper understanding about customers' real situation, their behaviors and potential cultural effect. The interview data from local employees could promote for perceiving the customer experience and it could be seen as the comparison with customer data and internal data from Finland to identify the similarity and difference. The interview approach utilized here was the same with the one applied in customer research.

Overall, the customer research was conducted across three companies in two countries, while the local staff research covered three branch offices in three countries. Each customer interview had one Rolls-Royce employee to host the meeting without interruption. The time taken to contact, coordinate and interview all of the participants was nearly 2.5 months including 1-month delay because of some specific situation happened to customer schedule. In the end, the raw data I received from Idean consisted of the interview transcript, voice recording, photos, experience map and some interviewers' notes.

3.2.2 Managing Collected Data for Constructing UUC Customer Experience Map

As the internal and external data had been both collected, the study could proceed into making sense of the big picture. The important questions that had to be figured out at this stage contained: how to utilize the data of both sides to bring the big picture of UUC customer service experience to Rolls-Royce; how to make the data of UUC customer journey to be understandable, shareable and meaningful for employees; how to identify and highlight the pain points and opportunities that could be emphasized in the organizational future development.

Customer experience map was the medium to find the answers. The tool was chosen here because firstly the map focuses on experiential aspects rather than operational angle (Segelström 2010, Meroni & Sangiorgi 2011) when interpreting the customer encounters

a service. Moreover, the experience map could support to better communicate user data with people outside design team (Segelström 2009, Holmlid & Segelström 2009) within a common understanding context. Apart from that, the tool could help articulate insights and drive innovation from collected data (Segelström 2009) to create better customer experience. However, there are many kinds of customer experience maps even though they all mostly emphasize the time-based nature of services, interaction and emotional triggers (Segelström 2010). Segelström (2009) claims that the intended audience of the map and the nature and content of research data would influence and decide how to design a particular customer experience map. The procedure of how to manage collected data for building UUC customer experience map is outlined as follows.

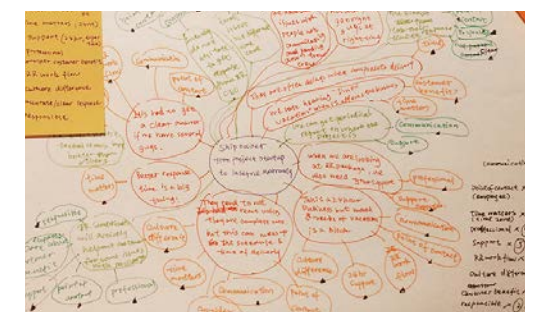


Figure 15: Raw data of interviews

Figure 16-18: Internal and external data integration & analysis

Customer Classification

To begin with, the UUC customer data showed in the experience map was classified into two big groups - shipyard and ship owner. To present the crucial experience data of key customers would benefit in-house staff to perceive and distinguish the thoughts, characteristics and quality from different service receivers, respectively. Placing them together on the same axis, Rolls-Royce Marine could easily recognize the relationship between two blocks of customer information and their separate evaluation on company performance. In the experience map, the details derived from each customer class are labeled with its particular color.

Time Dimension

Once the customer classification had been finalized, the horizontal axis definition of customer experience map was conducted. From making the contract to UUC in-service, the customer journey is realigned with seven stages that comprise of each corresponding customer experience information of time dimension. The partition is in relation to the results of internal and external studies, the service journey is primarily regarded as ten-phase process but the research data reveals that some correlative moments could be integrated along with some episodes that do not appear quite often in recent years, so the illustration of final customer journey stages is slightly different compared to the original internal description. The horizontal coordinates are the important reference and starting point when reading the experience map. Based on the time dimension, the rest of staff and customer research data were classified into different groups in the first place, then the further interpretation and analysis was started relying on the vertical coordinates.

Building Blocks of Doing, Thinking & Feeling

As for the vertical axis of UUC customer

experience map, the blocks - Doing, Thinking, Feeling are three key coordinates. The frame was firstly developed by Adaptive Path (2013) through trial and error, which aims to cover the full context understanding of customer experience with sufficient breadth and depth. From the internal study in Finland, one of the crucial findings stated that internal knowledge about customer's behavior, thoughts and emotions during the customer journey require to be enhanced. So it would be necessary and helpful to uncover what are UUC customers usually doing, thinking and feeling in each step for in-house deeper understanding about customers and the context around. The benefits concern not only the customer journey stage that one staff always concentrates on, but also the valuable insights from other phases which potentially influence and be influenced by someone's work.

In detail, 'Doing' represents the research data about sequential actions of UUC customers. As every customer journey stage consists of many interactions within a long time scope, it is essential to list those behaviors one by one including key and repetitive actions. Except telling what customers generally do, the blocks also consider their thoughts and feelings. In 'Thinking' block, it gathers the data regarding what expectation the UUC customers have at the moment, what do they hope that Rolls-Royce could support them and what are their thoughts and evaluation about UUC service. Besides, the 'Feeling' block collects the insights about which kind of leading emotion the customers have at different phases that include both positive and negative experience. To cover the full context of customer experience, there are other separate blocks demonstrated in the UUC customer experience map such as stakeholder relationship and touchpoints for better understanding the context with the hierarchical structure.

Experience Curve

After integrating and comparing the customer Interview data with the internal description

about customer experience, the experience curve is applied in the map to highlight the big picture of UUC customer experience that emerges throughout the UUC customer journey. Kujala et al. (2011) argue that utilizing experience curve could support identifying the chronological order of experiences through visualization, which aims at assisting users in retrospectively reporting how and why their experience with a product or service has changed over time.

Looking at the UUC customer experience curve in general, it illustrates how the customer experience towards the service varies from the first encounter until the end of journey. The horizontal axis represents the transformation of customer experience based on time dimension while the vertical axis expresses the intensity of experience. In each type of customer's experience curve block, the space above the middle axis means the positive customer experience that leads to a smooth process and Rolls-Royce is really doing well here to help meeting UUC customers' goals; The location below describes negative customer experience that results in a difficult customer journey and the company did not deliver the value that the customer is aiming for, which also means there is still room to improve the customer experience.

When designing customer interview approach, the experience curve had been already considered in interviewer's documentation to record the key reasons behind the experience. As the recipient of UUC customer experience map will be the Rolls-Royce employees, customers' quotes are marked in different locations of the experience curve, the quotes are giving the explanation why the customer has certain experience. In this way, the data could be kept alive and internal staff can be empathetic about customer experience, especially for the staff who do not have so much direct communication with customers in their daily work.

Stakeholder Map

In the meantime, the stakeholder map block is situated in UUC customer experience map to exposit the complex relationships among Rolls-Royce people from different offices and departments, shipyard, ship owner, component suppliers, ship line and some other external roles. The internal staff could know better about which role they are actually playing in the customer journey and potential chain of reaction their work could generate. By realizing that everyone is not just an isolated element, the in-house staff could be encouraged to serve their customers better. In addition, the company also enables to easily manage their internal resources by knowing the holistic pattern involving relevant people for each stage.

Touchpoint Evaluation

In the UUC service process map that was presented before, it already included the list of touchpoints between customer and Rolls-Royce but the information was only coming from the internal study. After combing the data from inside and outside the organization, all possible interfaces appear to different moments of UUC customer journey are covered in the touchpoint block that is seen as one of the coordinates on the vertical axis in the experience map. Through collecting the insights about touchpoint evaluation, the touchpoints closely connecting with positive customer experience are marked with the blue tag, whereas the ones leading to negative customer experience are pointed out by yellow color.

In-House Voice

Except for underlining first-hand customer experience, there is also a block in the UUC customer experience map named in-house voice, which gathers important internal thoughts, standpoints and expectation about UUC customer service experience. By comparing the internal and external information, it is not difficult to find that these two groups of

data are supporting each other for wider and deeper interpretation. For example, some pain points that have existed for a long time from customer angle and local Rolls-Royce office has recognized it as well, but the office in Finland does not recognize the importance of the bad experience. However, there is also another situation that the in-house staff reflected some key details during the internal interviews but the customer did not mention at all, it might be because the customer could not have enough time to tell everything during the external study. Consequently, this block could indicate the organizational attention, perfection and knowledge on customer experience, which lays the foundation for the company to consider if they should expand customer experience mindset to other areas in the future.

Experience Tag

Summarizing from first-hand customer experience data and internal voice, different experience tags attached in the map tell the relatively detailed and specific experience that customer has rather than just grouping them into good or bad class. The Rolls-Royce staff could see which kind of experience the customer expects to achieve because the current offering is inadequate. On the contrary, there is also a sense of pride as they are also able to see what the customers are satisfied with regarding the experience. Furthermore, the experience tags could be regarded as the reference to set the experience goals for improving the customer experience around UUC service. After the thesis project, if the work about gathering UUC customer service experience data will be continued, the analysis and calculation could be updated.

Opportunity

At the bottom of UUC customer experience map, the last block - opportunity, states where the company could grasp the crucial chances to drive the ideation and enhance the customer experience through future development. To highlight internal and external key insights,

the mind map had been created for in-depth data interpretation which involves all of the information from different blocks. By pointing out and classifying what are customers mostly care about, the key directions for future improvement have been identified. The concept of refining UUC customer journey mentioned in next chapter was developed based on the opportunity point in UUC customer experience map.

Application in Practice

The UUC customer experience map was delivered to in-house staff with hierarchical structure management and application of Rolls-Royce brand guideline in visualization that could raise the internal sense of identity and relatedness. When they begin to read the map first time, the employees could acquire more support and explanation from the instruction block located in the right side of this map. It starts by introducing the context of this map such as its objectives and definition of customer experience. Meantime, it tells about the different meaning for each block as well as the distinction among the information with respective colors.

In the end, the map has been printed out as a big poster and it could be placed in the public space in the Rolls-Royce office that everyone from their own departments could notice and read. It could act as an organizational shareable reference to improve internal awareness about emphasizing customer experience with understanding their behaviors, thoughts and emotion through different touchpoints. Besides, the map could indicate the possible opportunities for the company to concentrate on in the future for offering better customer experience in UUC business, and be the basis for expanding the CX lens to other more complex fields.

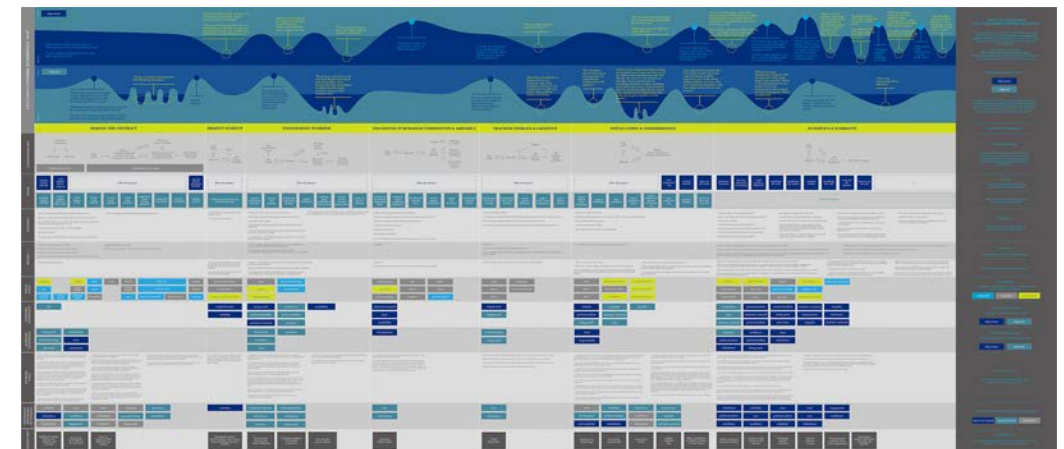


Figure 19: UUC customer experience map

3.2.3 Reflections

To reflect the value proposition of UUC customer experience map as a summary of the first outcome in this project:

- **Constructing an understandable and shareable frame of UUC customer experience for Rolls-Royce Marine**
- **Uncovering and capturing key moments of HIGHS & LOWS about UUC customer experience**
- **Promoting internal awareness and empathy on customer experience in different departments**
- **Driving improvement and innovation around UUC customer journey in the future, and supporting the organizational relevant decision making**
- **Supporting the extension of exploring customer experience around other types of products**

In the reflection session conducted in Rolls-Royce Marine, one manager from engineering department underlined: "If someone explain all of these contents in pages, it would be 50 pages. But now it is presented as an experience map, the information involved is more understandable and we have time to look at that and read through. It is very clear to see where we succeed and where we didn't, where are the peaks and lows." He also mentioned that he was actually quite surprised and encouraged when seeing those customers' positive feedback because he and his colleagues only received bad news during their work as the customer would only contact them if some problems happened.

Meanwhile, the other manager from Rolls-Royce Marine said in the session: "I really would

love to put the UUC customer experience map in the public space of our office because that is what we want to see and my guys will read. In some ways, we are so protected here without sufficient understanding about customers and the context around them. And I didn't overdramatize this, our staff could know the situation from the holistic perspective." He also stated that the first person quotes that appear to the experience curve block are very important to raise the in-house awareness about customer experience, and everyone can pick the improvement point for himself to rethink his/her own way of working. Additionally, the manager told that the outcome could make Rolls-Royce Marine employees from different business areas realize that their jobs are not equal to completing a personal small task, instead, they would influence so much the whole project and the huge network.

As for my personal reflection about the first outcome - UUC customer experience map, I would suggest that this thesis project could work as a good starting point for Rolls-Royce Marine to gather customer voice about their UUC service experience, that is to say, the current outcome should be enriched by more customer study in the future. From the critical perspective, the amount of customer qualitative data is still relatively limited and we cannot utilize the certain customer standpoints to represent the UUC customer experience in the global market. In details, we can only reach the customers whose schedule and company situation fit in with this project timetable, and the coordinating process was not easy during the previous customer research. Moreover, different stakeholders were involved in the customer study, such as the local subcontractors for conducting the interviews, the complex network required that the background information of customer interview had to be delivered and transferred several times and the interviewers might have

different levels of understanding about the project context. The situation caused us to be unable to control and ensure all of the interview raw data is fully perfect, but again, the limited time the project had is also one of the reasons

led to the difficulty. Apart from that, some of the details of customer study plan need to be considered and improved, for example, the time arrangement with customers and refining the interview scope.

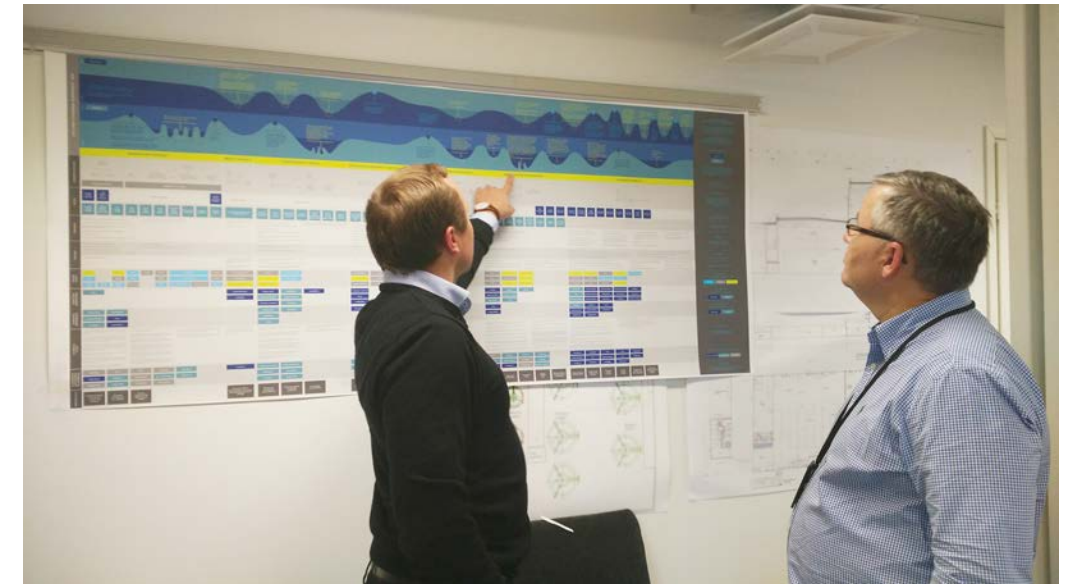


Figure 20: Internal reflection session

3.2.4 Consideration for the Future

Based on the reflection of UUC customer experience map and the relevant research process, the space for improvement had been identified for future continuous study.

The first key point would be the time arrangement for external research. In previous experience, the customer interview schedule was hard to be confirmed because people would have their own stuff to work on, Rolls-Royce was not the priority. Sometimes, the meeting was delayed for a couple of weeks and Rolls-Royce had to wait long for next appropriate date. During the interview, a shorter conversation would probably be demanded by customers

if they had other meeting or some urgent work after that. According to the situation above, the company could possibly consider to coordinate with customers and confirm their schedule as early as possible, and the interview could be carried out with preparing two versions of interview plan in advance in case that the customer doesn't have enough time for a long conversation.

Also, the interview scope is the second concern for the future. As the time is already limited for the customer interview, the conversation scope requires to be refined at the same time. The UUC customer journey is quite complex

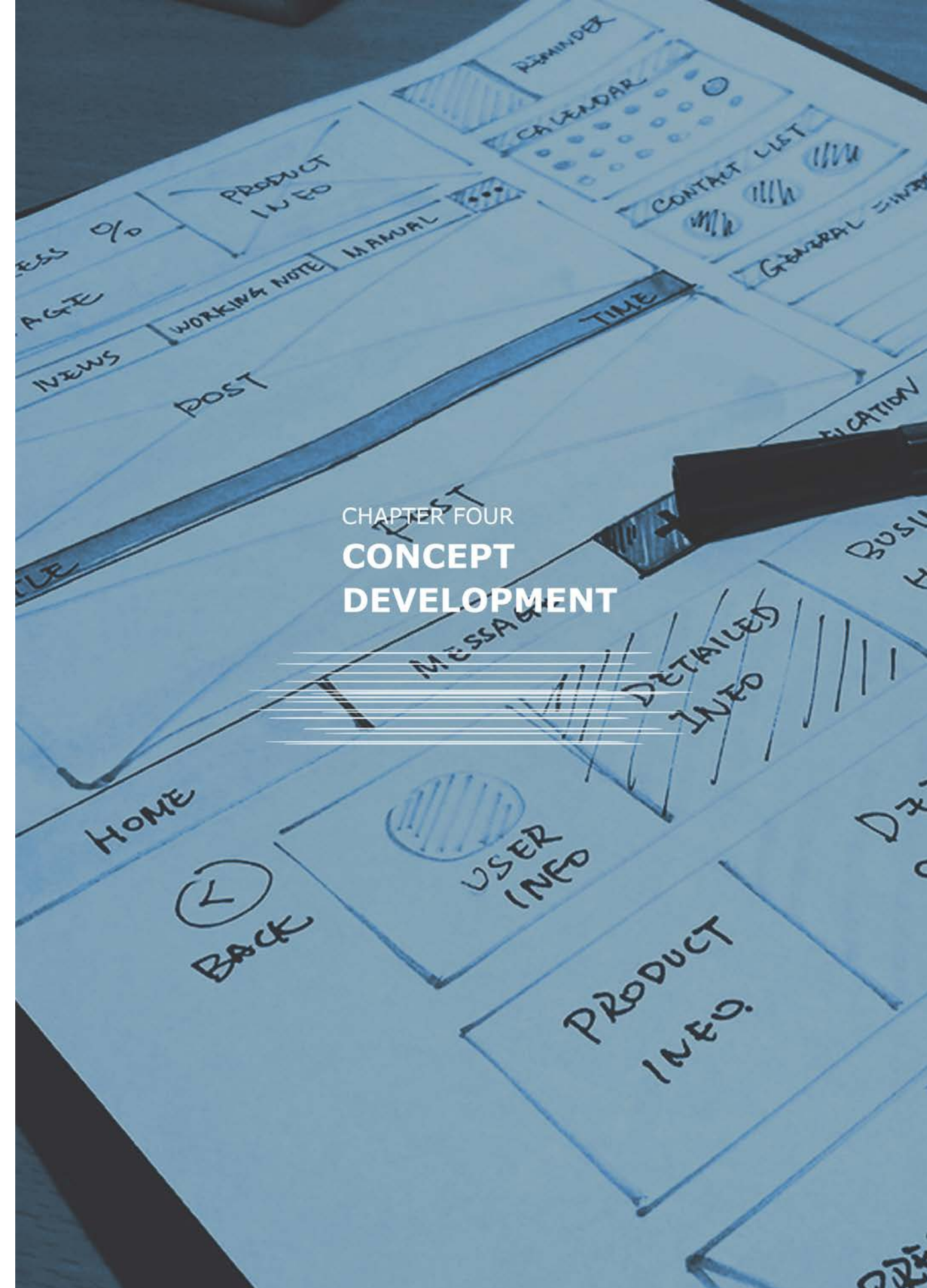
with a lot of customer interactions, so it would be better to prepare and highlight the most crucial areas and topics that the customer could emphasize to talk about. But the points of focus still depend on the objectives that set up before each customer interview.

Thirdly, the situation concerning the information transfer among different stakeholders mentioned in the previous section should be pointed out. It is also connected with the question - who is the most suitable interviewer? From my personal viewpoint, the professional researcher is still the smart choice with great interview skills, abundant experiences and the objective angle. The key point for the researcher is to spend enough time to really understand the research context such as the background, objectives, and approach for a better communication. Considering for some customer answers that might be related to specialized technical knowledge of the marine field, one Rolls-Royce employee could participate the meeting meanwhile, but in most cases the person is acting as an observer and listener.

Next, the internal understanding about customer experience is another improvement area. During the internal study, the situation happened sometimes that the in-house staff always described their working experience instead of customer experience. Maybe the phenomenon results from their respective knowledge about customers and the context around, or their unfamiliarity with the term customer experience. The second possible reason is associated with the topic - how to bring the experience mindset into the organizational culture, which also needs many efforts and contribution from different aspects.

Lastly, there might be some other possible approaches to enrich current UUC customer experience map instead of just focusing on current communication method. The refined customer journey presented in the next chapter is enclosing a sub-concept to gather more UUC customer experience data in a remote way.

Relying on the information of UUC customer experience map, brainstorming had been carried out around refining and designing an experiential UUC customer journey. How the final idea was selected and developed step by step is illustrating in the concept development chapter.



Chapter 4 / Concept Development

This chapter represents the process of building the bridge between what we learned about customers and what we plan to offer to them in the near future. It starts by describing how to seize the valuable opportunity for reducing obstacles for better UUC customer service experience from the information involved in the UUC customer experience map. After brainstorming and determining the concept direction for further development, experience-driven design approach had been applied with setting the experience goals to design a refined experiential UUC service. Then, the user profile and storyline is presented in detail for following concept prototyping that includes from information architecture, flow of interaction, wireframes to Hi-Fi prototype. In other words, the chapter provides the answer to third research question of this thesis - “How to enhance the UUC customer journey map from experiential perspective in the near future?”

4.1 Capturing the Opportunity

As the UUC customer journey is quite complex with diverse elements and long-time scope, the first outcome - UUC customer experience map stated quite a lot opportunities the company could work on in the near future to enhance their customer service experience. Some of the options fit in with the certain journey stages while some of them could be considered in the holistic service process. As we know, it was unrealistic to aim for overcoming all of the obstacles identified before through one thesis work, so this project intended to offer just one possibility for Rolls-Royce Marine to capture the key opportunity for refining the UUC customer journey from the experiential angle. Consequently, figuring out the answers of the essential question “what are customers mostly caring about” becomes quite important. As the precondition, the concept should be available for implementation in years instead of too radical idea because the context demands that it could be applied in the near future.

To seize the key possibilities, another round of data analysis had been carried out. Based on the different information showed in the opportunity block of the UUC customer experience map with relevant context, I tried to

group them with respective common ground to find out the most crucial topics that customers really concentrate and pursue for their better customer experience during the business. As the map content is confidential, I could only describe each group title in general. Those groups are:

- Better communication with Rolls-Royce Marine point of contact
- Possessing specialized and sufficient support
- Being understood the situation by Rolls-Royce Marine staff
- Benefits for old customers

Even though the four key themes had been listed, but these directions were still too wide and the emphasized orientation required to be defined in the next step. To explore their development possibility for selecting the most appropriate orientation, I did the brainstorming [Figure 21] according to the topics mentioned above.

After that, I firstly considered the different

possibilities from both practical and experiential perspective, then selected and brought three most feasible orientations to Rolls-Royce Marine and had a reflection session with the staff. The three orientations are presented in short below:

- A shared tool as the exclusive assistant for customers and the working interface for internal staff
- A collaboration event to bring more mutual understanding to the service process
- A loyalty reward program for engaging old customers



Figure 21: Brainstorming

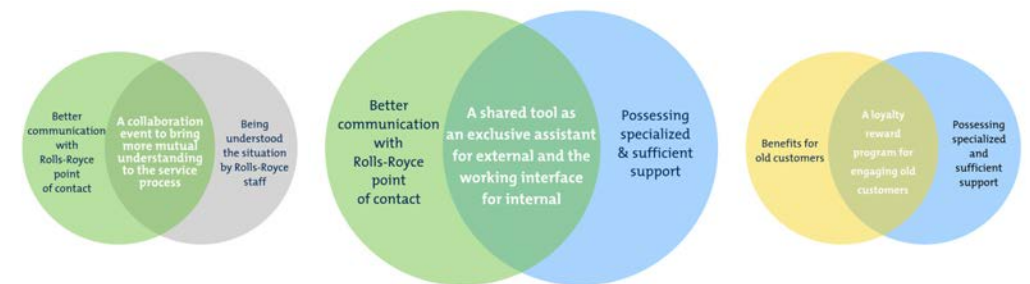


Figure 22: Orientation selection

The first orientation came from the brainstorming on the integration of 'better communication with contact point' and 'professional and enough support' directions. The collaboration event orientation resulted from the 'being understood the situation by internal staff' and again 'the better communication' topics. The sources of reward program orientation were support-related and 'benefits for old customer' directions. Through discussing with the in-house staff who know the orientated context best, they expressed their thoughts and concerns around the three orientations. For example, the staff showed the strong interest on the first orientation: "The proposed direction will be very beneficial for both internal and external parties, and strengthen the customer experience. As the personal contact is so important for us, why not rethink the channel and the content involved?" In the meantime, the staff were unsure about the collaborative event orientation because they felt that the in-house employees probably would not regard it very seriously. Even this orientation raised their curiosity but the form of collaboration activity might be unfamiliar to most of staff and customers. For the last one, the in-house staff believed that the direction will be quite feasible to be conducted, but they already have the general idea concerning this direction, so it will be better to work on something without overlapping, and the workload for it might be less in the thesis scope. As a consequence, the first orientation had been selected to develop further.

For readers' better understanding the process of how the first orientation had been defined, I will explain some relevant information in detail. As the defined orientation was derived from the brainstorming of 'Better communication with Rolls-Royce point of contact' and 'Possessing specialized and sufficient support' groups, it is necessary to illustrate what these two groups stand for.

When it comes to the communication-related group, the data placed in the experience map describes that the better communication is

required in different phases such as the making the contract, installation and commissioning stages. For making the contract process, the customer reflected that the old history from previous contracts could be re-used instead of having a long and repetitive communication. About the installation and commissioning stages, the chance for improving the customer service experience focus on the emergency communication. It connects with the situation that the customer has to negotiate the project requirement again with the other Rolls-Royce point of contact if there is one component broken. The extra communication at this stage could make the whole project schedule be out of control. Meanwhile, the relevant obstacle had been highlighted by in-house employees in the previous internal study. They stated that Rolls-Royce has local teams to support customers closely but sometimes it is challenging for them to react quickly to customer demands when they need support from Rolls-Royce main office. The current way of communication results in a relatively low efficient business with complaining about long-time waiting by customers. Also, some internal staff realized that the way of coordinating with clients should be improved and the information involved should be updated for better service procedure.

As for the 'Possessing specialized and sufficient support' direction, the relevant customer standpoints include that they expect to have the full-time support when the customers are doing business with Rolls-Royce, especially for the UUC unit, the inadequate support could lead to a serious loss for customers. Also, the customer mentioned that sometimes they feel that Rolls-Royce is trying to push them to the people in the middle, and communicating with those staff who do not specialize in the product or understand their needs make them feel frustrated in the service journey. Furthermore, for some new customers, they hope to have more closer communication with Rolls-Royce staff after they receive the UUC package with many technical details, product and service information. In internal eyes, supporting the

customers in the best way is always the key thing the Rolls-Royce Marine is concentrating on, and they want to make sure that the customers have reliable resources at the best time.

After representing the sources of defined orientation, the orientation itself should be explained in detail as well. A shared tool as the exclusive assistant for customers and the working interface for internal staff means that the target users of this orientation would be both customers and Rolls-Royce Marine employees. For external party, the users mainly refer to shipyard's commercial and project manager who directly communicate with Rolls-Royce in the UUC service process, and the assistant enables to be shared to other staff in the shipyard. As the contractual relationship between shipyard and ship owner is not the thing Rolls-Royce could control and the new shipbuilding case is mostly dealing with the shipyard rather than ship owner, so the customer mentioned here stands for the yards. Correspondingly, the essential users for Rolls-Royce internal party would be the sales and product manager, and the working interface is shareable to the whole support team.

To explore more possibilities behind this orientation, it could be mainly seen as the important communication channel between the customer and RR employees, and offer valuable product and service-related information for customers. For in-house staff, the information of UUC customer experience map probably could connect with this design orientation to promote internal better understanding, supporting and communicating with customers. As mentioned in the previous chapter, there might be some other possible approaches to gather more UUC customer service experience data for enriching current UUC customer experience map. So the shared tool between internal and external parties could be likely regarded as customer experience feedback channel, it will be the extra sub-orientation that involved in the following design process. To consider the potential usage period, the new customer begins to utilize the tool from project startup to UUC in-service while the old customer could already start from making the contract stage, and the Rolls-Royce side could apply the working interface throughout the service journey.

4.2 Setting the Experience Goals

After the focused orientation had been defined as one, it required further concept development. The approach applied during the design process was experience-driven design. 'How to enhance the UUC customer journey from experiential perspective in the near future?' is the last research question of this thesis, it stands for that the experience is the emphasis as well as the objective for the improved UUC industrial service. Experience-driven design approach is seen as the influential design strategy in industrial design (Hekkert et al. 2003), and experience-driven innovation could help B2B companies construct appropriate interactions with stakeholders. As the defined orientation still located in the general level of concept, the experience-driven design approach could support to set targeted directions for the following development and frame the central concept of the design vision (Hassenzahl, 2011). As many researchers state, the starting point and ideology of experience-driven design approach is to determine what experience to aim for, then ideate something that is expected to evoke intended experience (Desmet & Schifferstein 2011, Kaasinen et al. 2015). The process of setting the targeted experience was the key to be achieved at this stage, in other words, defining the experience goals.

Roto et al. (2008) argue that the experience targets are the conclusion of several research activities. And a good UX goal should be clear enough in case that the experience is easily left as a good intention without any concrete influence (Kaasinen et al. 2015). Kaasinen et al. (2015) represent five different ways for defining the experience goals that could acquire insight and inspiration with supporting the multidisciplinary character of UX, and I selected two of them - Empathy and Brand approaches under this thesis context. The goals generated through utilizing Empathy approach were derived from the previous internal and external

studies, the research allowed me to know the actual users' concerns and interests and step into their shoes with empathy. The empathy source not only consists of the first-hand customer experience in the customer journey but also involves the mutual understanding between the customer and Rolls-Royce employees. Also, the extensive studies on relevant domain and work analysis (Kaasinen et al. 2015) are the roots when setting the goals through this approach. When it comes to the Brand methodology, it was chosen because the Rolls-Royce brand is quite significant, impressive and powerful for both staff and customers world-wide. Through utilizing this approach, the corresponding UX goals are easy-to-share for recipients and the targeted experience is in line with the image that a company wants to convey to its customers (Kaasinen et al. 2015). Compared to other approaches, the brand is the self-evident and the most apparent source in industrial case (Kaasinen et al. 2015). The relevant detailed insights come from the company materials with interpretation and also the internal and external research.

As described in the last section, the determined orientation was considered for two kinds of target users - UUC customers and Rolls-Royce staff. It might have already raised the question in readers' mind for a while - why the in-house staff should be covered as the key objective is to design for an experiential customer journey. The reason includes that the relationship among internal and external stakeholders is so close and they affect each other all the time during the business. As the better customer experience is under consideration, the refined customer journey would definitely cause impact to in-house experience. Consequently, it will be necessary and beneficial to highlight the internal user experience at the same time, and the way of thinking would support the ideation with sufficient practicality in future organizational application rather than some

unrealistic notion. But the most emphasis still placed on the UUC customer experience as the time of this thesis project is quite limited. At this stage, the experience goals for the internal staff had been set along with the UUC customers.

During the defining process, the UX goals had been slightly modified and adjusted through discussion with the employees from company side. In the conversation, the UX goals were applied as a channel of communication between the Rolls-Royce decision makers and I. As follows, the developed concrete user experience goals are illustrated with respective reasons.

For the UUC customer, the orientated concept was interpreted as an exclusive assistant during the business. The UX goals contain 'Feeling of Being Cared Personally', 'Sense of Security', 'Professionalism for Trust' and 'Access to Information for Openness'.

Feeling of Being Cared Personally

To begin with, the Rolls-Royce Marine brand strategy could explain this determined experience goal, which underlines that placing the customer at the heart of the organization is key for the business. The strategy highlights the importance of caring about customers through listening to their voice, sharing ideas with them, really understanding their requirements and then relentlessly delivering the promise. During the internal study, the staff stated the feeling of being cared for could be brought to customers through very small details in the customer journey, such as the two-language business card delivered to customers in Asia, which gives much more personal feeling to customers - the company is meticulously caring for them. Also, some customers reflected that the local internal employees would help them communicate with the main office, the way of coordinating made them feel comfortable and being cared because the local personal contact supported the customer

to weaken the potential language obstacle during the customer journey. Furthermore, the feeling of being cared personally also represents the responsiveness and relatedness. The responsiveness roots in the cultural difference on communication manner and customers expect to receive a quick feedback after their inquiry. And the relatedness means the close connection needs be maintained between customers and internal staff, and let customers feel that the Rolls-Royce are standing on their sides all the time. Apart from that, the customer emphasized in the previous study that they treat the continuity of support in different stages of customer journey as a quite important factor, which showing if the care is constant with lasting good customer service experience.

Sense of Security

In the customer study, the participant stated that sometimes Rolls-Royce staff do not see why they need to watch the work, and they do not realize their importance to customers and consider customers' potential loss. Especially for the new UUC customers, they are not very familiar with the product and the system, the feeling of insecurity always appears. In UUC industrial service, there are a lot of attention points that demand customers' sufficient experiences and specialized knowledge. And if some serious problems occur, the chain of reaction could be generated and the delivery time cannot be guaranteed anymore. Furthermore, the cost of UUC product is quite high as well as its created value in application, to have a smooth business process is every customer's basic expectation. Rolls-Royce should support them to avoid possible faults in advance instead of fixing the existing problems.

Professionalism for Trust

Firstly, the Rolls-Royce brand value 'Trusted to Deliver Excellence' could illustrate the experience goal 'Professionalism for Trust'. The

value is earned by doing what the company says it will and the value demands care, consistency, courage along with competence (Rolls-Royce n.d.). During customer study, some people indicated that they trust the Rolls-Royce people in Finland because those staff are pretty specialized and professional in the technical details, understanding customers' needs as well as knowing what should be completed. Conversely, the customers felt unsatisfied when they were working with the people without detailed technical knowledge on UUC product. On the other hand, the customers satisfied with the situation that sometimes Rolls-Royce would actively help out with customers for teaching some knowledge on-site without asking extra payment. The performance of internal specialism will strengthen customers' trust, and it is worthy of being proud in terms of Rolls-Royce being in the marine field.

Access to Information for Openness

Starting from customer perspective, they had both positive and negative experience concerning the access to information. The positive case happened when they could know the project progress very well, such as through receiving the periodical report from Rolls-Royce Marine. However, the good experience did not last for long as the internal staff would not update the information to customers all the time. Also, the customers had seen problems of obtaining the valuable information from Rolls-Royce staff, the communication sometimes is not enough without handing down the key issues to customers. From in-house angle, they also told the expectation about putting more information on the website so that the customers could understand more product and service details, which might leave a deep impression on new customers. The other Rolls-Royce employee expressed that more transparency for the marine market is what he really anticipate. As marine industry has existed for many years, the images of the most marine organizations are still traditional and conservative. With the marine people are

becoming more familiar with each other, if we are more open to put some information out there, everyone can share and both customers and internal staff could benefit from it.

For the other user of the oriented direction, Rolls-Royce support team regard the concept as a working interface, the relevant UX goals are explained as well below. They comprise of 'Empathy for Motivation', 'Controllability on Respective Progress' and 'Sense of Achievement for Pride'.

Empathy for Motivation

From internal study, the employees highlighted the importance of in-house understanding about customer and customer-related context during the UUC service journey. It will be valuable for internal staff to enhance their awareness and motivation when they are doing business with customers, they would know what are customers probably thinking and feeling at certain stage with empathy, and how the staff could help customers achieve better customer service experience. Besides, the Rolls-Royce staff should identify their roles involved in the customer journey as well as the relationship with other stakeholders, which also represents the UUC value network. In this way, the internal users would realize that they are not isolated unit, instead, their behaviors and performance would influence so much on the UUC customer service experience.

Controllability on Respective Progress

Through internal context research, I have already recognized that all of the internal users including sales manger and project manager usually work on many projects at same time. As the each project could last for several years, better in-house control over respective progress becomes very crucial. Especially for UUC project, the staff mentioned that the product itself is not with a complex structure or system,

but the application is quite demanding. As a consequence, Rolls-Royce employees require to control all steps of the UUC service process to ensure the quality in case of any error. If they do not do so, it will cause serious loss for both customers and Rolls-Royce Marine.

Sense of Achievement for Pride

Rolls-Royce Marine is always treating the internal employees as the company power. Their pride in what Rolls-Royce has achieved, their commitment to delivering excellence to customers and their vision of what the company could reach in the future are all fundamental for Rolls-Royce's continued

success(Rolls-Royce n.d.). Through doing the business with customers, the internal feeling of pride could result from their sense of achievement. For example, when the sales manager has completed a long-time negotiation with customers and finally get the contract done, he felt that the handshaking is a representative of milestone and reward for the previous efforts. Some internal employees also stated that they are very proud about what they are doing for customers and how they promote customer service experience through their work. Someone from Rolls-Royce Marine even claimed that he loves to wearing the Rolls-Royce short all the time because he is proud to the excellence Rolls-Royce is offering to the customers these years.

4.3 Shaping the User Profile

With setting each user experience goal, the ideation was conducted at the same time relying on defined intended experience for both customers and internal staff. As the original UUC customer journey is quite complex with many elements involved under a long-time scope, the work of reframing the journey from experiential perspective was done little by little. The procedure comprises of considering the user profile, trying to structure refined customer journey and illustrating the new story with detailed plots.

Creating a journey was by far the most common approach to visualize the insights into stories, and it is often in conjunction with the application of user profiles (Segelström 2013). Here, the user profiles were applied to help construct and reframe the experiential customer journey from the empathic perspective with indicating the possible missing spaces during the service development process. The profiles represent the typical

person's identity, characteristics, behaviors and his or her working situation in the UUC business. As the UUC service is formed with diverse channels connecting with different users, the user profiles could support for pinpointing and understanding how these users would interact, consider and perceive in the respective moments of new industrial service.

Simultaneously, the user profiles could be seen as the starting point for readers to view the following refined UUC service story. With the empathy of four important roles including both external and internal users, better interpretation about the story can be achieved. As follows, the four user profiles are presented. Two of them stand for the commercial manager and project manager from shipyard while rest of two represent the area sales manager and project manager from Rolls-Royce Marine. The profiles give an outline of the real context regarding users and their working

environment with respective illustration, the drawing could be also interpreted as the hint of understanding users' behaviors and personality. Expect for telling the users' names, ages, job position and experiences, the profiles also consist of the brief description on the person's working characteristic, responsibility and routine as well as the role he plays in the UUC service.

In order to better distinguish the in-house and external user profiles, the customer-related illustration was marked with yellow color while the internal-related graphics were filled with blue color, which were also utilized in the next section for storytelling.

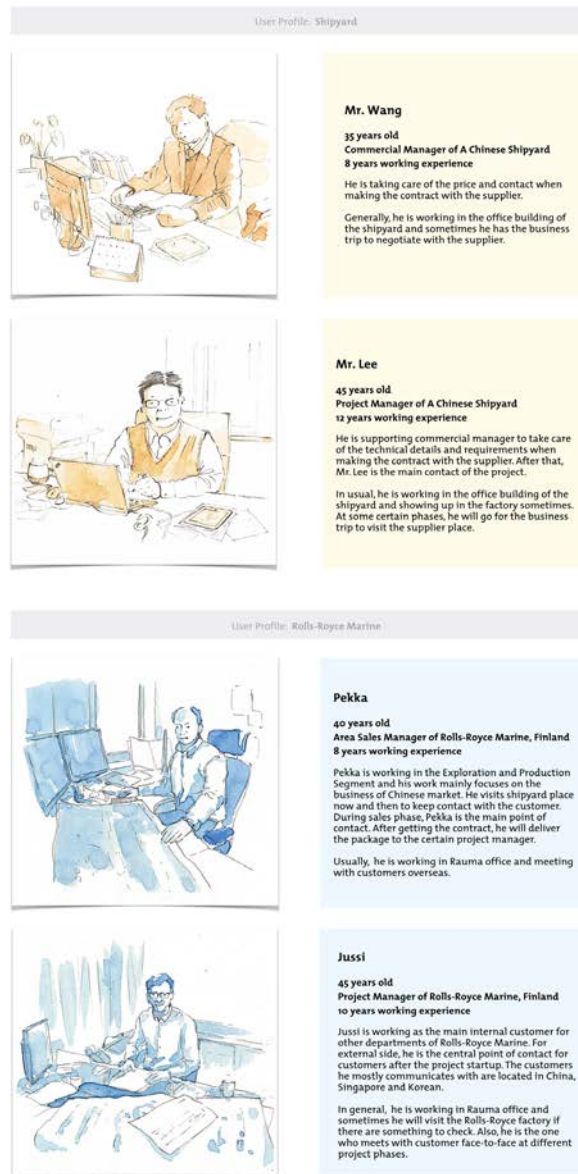


Figure 23: User profiles

4.4 Storytelling About Navigator

After building the user profiles, the reframing process was started to design for an experiential industrial service around UUC unit. I used the sticky notes to pinpoint and highlight the most important internal and external interactions that are associated with different targeted experience [Figure 24]. The process was not easy because different users possess respective behaviors, thoughts and emotion, and sometimes they meet in the

intersection points while sometimes they are standing in separate positions. Through several rounds of development, the final refined UUC service had been formed and defined to evoke the certain experience that had been set before through different reframed touchpoints. 'Navigator', as a new touchpoint in UUC service, it is the emphasis for further explanation on how the users' experience could be promoted in the near future.



Figure 24: Reframing the UUC service

In marine domain, the navigator is a common but very important reference for the helmsman during the sailing. The concept 'Navigator' aims to achieve the same targets as the original term tells, it could support internal and external people when they need the guidance and communication in the UUC business process. It could indicate where the potential crisis points are located under the surface and what the correct direction is for heading to the destination.

To better interpret the refined UUC service in detail, the storyboard was utilized instead of customer journey to provide a more focused version of the service in which the non-interacting moments often are disregarded (Segelström 2010). It illustrates how the UUC industrial service exchange develops over time with showing the drawing of key moments, and it puts the emphasis on the touchpoint and interactions. In the storyboard depicted below, it is the integration about telling how the customers interact with the developed UUC service along with how the new service had been improved for Rolls-Royce employees.

In detail, different colors were also applied to distinguish the internal and external interactions in the storytelling, which yellow still stands for the customers and blue represents the Rolls-Royce Marine. Compared to the user profiles, the storyboard would appear some moments with showing the two colors at the same time, that is to say, the intersection points. Also, the visualization of drawing continued to be used for maintaining viewers' empathic understanding on different plots. The developed UUC service began with expressing the story background, which depicts that the shipyard just got a contract about building a new drill ship while the Rolls-Royce Marine has published a mobile application called 'Navigator' and it starts to be used in the new business process. In general, The storyline includes the stages from making the contract about UUC to the unit in service.

Project Background

Shipyard

Five years ago, the shipyard purchased a UUC type unit from Rolls-Royce Marine. Recently, they just got a contract from one of their customers about building a new drill ship in 4 years. Consequently, Mr. Wang starts to look at the supplier list of azimuth thruster.

Rolls-Royce Marine

Recently, Rolls-Royce Marine just published a mobile application called "Navigator", it starts to be utilized in the new business process between the employees and customers.



Mr. Wang is giving a phone call to Pekka : "We need 8 UUC thrusters for our new building ship, but the details are a little bit different compared to our last purchasing. We want to discuss with you in a further step."

After receiving the phone call from Mr. Wang, Pekka goes to his homepage of "Navigator", searches the customer information and add Mr. Wang into his contact list. At the same time, he sends an invitation to Mr. Wang for joining the "Navigator" and add Jussi as the other contact of shipyard.



Mr. Wang is quite curious about the "Navigator" application after reading Pekka's email, so he downloads it from application store and login with the ID name and password that Pekka sent to him.

"Wow!" Mr. Wang says after browsing the app for a little while. Then he tells his colleague Mr. Lee "This is something we never use before, especially for the conservative marine field, it seems quite attractive." They starts to explore more information in "Navigator", they are surprised about their previous ordering has been already presented as a part of their profile. Also, they find that they could see the detailed information and working characteristics of Pekka and his support team in the contact list.

"Welcome to the Navigator Mr. Wang! We could start to define the needs based on the information from your previous purchasing." Mr. Wang receives a message from Pekka



After receiving the detailed package from Pekka, Mr. Wang begins to study the sales proposal and discuss with his colleagues by showing the technical specification and other details through "Navigator".



In two months, Mr. Wang has finished the communication with Pekka about the technical details, commercial quotation and contract negotiation through "Navigator". Wang feels that he is close to Pekka and easy to get answer from him even though one of them locates in China and the other one is in Finland. Except periodic face-to-face meeting, they are having the video call with each other to confirm some complex information.



The shipyard is very glad about communicating with Rolls-Royce Marine and their proposal about the contract. "We have decided to choose your product, shall we meet next week to sign the contract?" Mr. Wang send a message to Pekka. After agreed on time, Wang receives a meeting invitation through "Navigator". At the beginning of following week, Wang gets a reminder to prepare the meeting in advance. After signing the contract with shipyard, Pekka introduces Jussi to Mr. Lee: "Jussi will take care of the project after today, but you could also contact me anytime if there is any questions about the contract."



After the project has been officially started, Mr. Lee is getting better understanding about the project background through studying the details that recorded in his account.

Meanwhile, he finds that there are some changes happened in his "Navigator". Periodically, he is receiving the notification about what will happen recently, what the shipyard should prepare and pay attention to for a smooth process. Also, Lee could see clearly about what actions will be involved in rest of stages. As a customer without sufficient experience about UUC, Lee feels that he already have the big picture of the whole project.

Simultaneously, Jussi is studying all of the sales details that have been verified in the early phase with shipyard. Even he is working on the several project at the same time, he could find easily about the information of the certain shipyard. Jussi feels that he could better control the progress of different projects now.

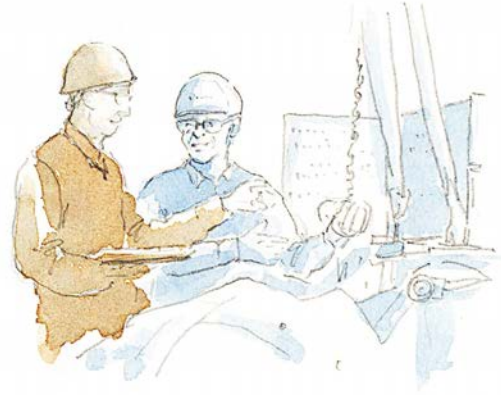
Through reading the module called "Experience Guideline", he realizes that there are a lot of points he actually should pay attention to during previous business with customers, but he never thinks about that they will have such bad experience at certain moment. But he is also proud about seeing some good feedback from customers. Jussi believes that the guideline will help him and his colleagues understand their customer better and offer better service for them in the rest of process.



During the engineering to order phase, Mr. Lee and Jussi are utilizing the specific page about negotiating drawing of "Navigator" to communicate with each other. In the meantime, they are confirming the technical details with their engineer respectively by showing the modification history of the drawing. Even though revisions happen several times, they are still pretty clear about what details has been changed before and what is the latest drawing.



After approved the final drawing, Mr. Lee receives a notification from his "Navigator" calendar on his way to home: "The purchasing component is just started. And the assembly will be immediately conducted when the components arrive." He feels quite comfortable about he could know the progress very well of this UUC project all the time.



When assembly is going to be completed, Mr. Lee comes to Rolls-Royce factory at Rauma to attend the FAT. Mr. Lee and Jussi are communicating about some assembly details, they are using "Navigator" as a reference material for their conversation.



The assembly is done, Mr. Lee is checking the storing and transporting progress through "Navigator". The ship line information is also showed in the module of current phase.

"I will be in a short holiday next week, please contact Anton if there is anything urgent. I have already add him into your contact list." Mr. Lee receives the message from Jussi, and he notices that his calendar has been marked by Jussi from next Monday to Sunday.



Mr. Lee is preparing the installation of UUC quite well based on the information offered in "Navigator", he feels that it helps them to avoid some mistakes which might lead to some serious chain of reactions and affect delivering the ship to their customer. After receiving the UUC, everything about installation goes quite smoothly.



When the installation is almost finished, Mr. Lee suddenly know that one of the UUC unit has been broken because several shipyard factory workers don't know the installation very well and they just did a wrong step that makes the unit stop working. At first, Mr. Lee is worried about reordering negotiation will waste a lot of times, but he is relieved after he finds that he could reorder the same product immediately from his ordering history, no more repeated communication needed.

After receiving the reordered unit, the installation has been done. The shipyard begins commissioning after two weeks. During the commissioning phase, Mr. Lee receives an invitation about joining the Rolls-Royce Marine anniversary online campaign, which called "Marine Time in A Week".



Mr. Lee is seeing the campaign page in detail: "To celebrate our theme week of this year, Rolls-Royce Marine invites you from all over the world to join us the anniversary online campaign. You could upload short video clip coming from your daily work to interpret your personal understanding and feeling about the theme of this year "Trust". It could be any kinds of expression, whatever positive or negative, we all accept them because that is real marine life. In the end, we will publish the incredible movie to the world which filmed by you. Really looking forward to seeing your story!"

From the campaign page, Mr. Lee notices there are already 98 participants and 126 video clips uploaded. "It might be quite interesting to see the final movie that marine people made together worldwide." Mr. Lee decides to join the event and see what will happen in the end.

During the same week, Mr. Lee takes a video about the moments that one of Rolls-Royce people actively helps them to take the oil sample without extra charge. Mr. Lee thinks the professionalism of the person's behavior and the attitude make him feel that Rolls-Royce Marine is worth to be trusted. After that, he uploads the clip to the campaign page.



Eventually, the sea trial of the new building drill ship has been completed, Mr. Lee is shaking the hand with the support team from Rolls-Royce Marine: "This is an extremely unforgettable experience I have never had during my previous working life, we are very satisfied with doing the business with you and we are quite surprised by using "Navigator" during our work. Just as its name tells, it marks dangerous coastlines, shallow and reefs, and make sure we have the safe entry to the final target - excellence." After the ship owner taking over the drill ship, Mr. Lee and Mr. Wang are still using the "Navigator" when the contact needed.



One month later, Mr. Lee receives a notification about the "Trust in A Week" movie has been released. He and his colleagues are watching it together and they feel that it actually builds the emotional connection for marine people all around the world. "Wow!" They said, "It really bring the marine industry into the public. In traditional image, the marine is just about machine and technology, but now it becomes more understandable, transparent and accessible. I definitely would join the campaign next year as well."

At the same time, Rolls-Royce has been updated the information of customer experience into their experience guideline. They really understand the customer's voice in the certain real context and they get the empathy from customers happy, tough or other complex moments. The customer experience database is being enriched all the time.

4.5 Values of Navigator

After exploring how the enhanced experiential UUC service works step by step through applying 'Navigator', the values were listed to summarize the benefits that the concept intended to deliver to different user groups within and outside the organization as well as to highlight the topics that required to be followed during the concept prototyping phase.

For Both internal & External Users

For two groups of users, the first value that 'Navigator' could deliver would be more flexible and convenient daily communication as well as maintaining its provable characteristics, and the refined channel will not be limited by different time and context factors. According to the Rolls-Royce anniversary online campaign idea, the second value is to build the emotional connection between the Rolls-Royce employees and customers, also, among the customers from diverse locations in the world. Moreover, the marine industry is brought into more public space, the idea could support the marine domain to construct its more understandable, transparent and accessible image.

For Customers

The value created for external users firstly includes more open and transparent information access for customers. Especially for new clients who are unfamiliar with the UUC service and product, they could perceive the holistic business scope in advance. Next, having better information management with different layers and blocks is the second value that offers customers a more professional guidance during their work, they can find the specific information easily based on certain progress and requirement instead of looking through original 900 pages of customer manual. After that, the refined UUC service could help to

decrease the extra workload and unnecessary loss for customers, for example, the reduction of negotiation about product details if one more unit is needed. In addition, some customer tribes could start to be formed among different clients all around the world. This value refers to the company online campaign idea, the activity could promote customers to become loyal and the marine dialogue is more open.

For Rolls-Royce Marine

In contrast, the first value for internal staff would be bringing wider and deeper empathic understanding about customer service experience for Rolls-Royce employees, the staff could start to rethink their previous behavior for better serving the customers in future. Then, the next value is to construct an assistant for in-house staff so that the working process becomes more manageable and controllable, and the internal working quality will be raised. Through attending the online campaign by customers, the company could collect more customer experience data recorded in a real context is the next value, the video format could help keep the empathy from different complex moments within a shorter feedback loop. Other than enriching the current UUC experience map and better internal understanding about UUC customers, the concept will also work as a good advertisement for Rolls-Royce Marine and strengthen its brand image and even competitiveness. Lastly, the concept could lay a good foundation for the company to work on the experiential service enhancement around other types of products.

4.6 Concept Prototyping

In recent years, people's living and working behaviors have become closely connected by using wearable device which allows people reach the valuable information easily and better manage what they are doing. Considering the real situation for marine business, the physical working environment for user groups is always changing, so the 'Navigator' in the new story is mainly defined as a mobile application concept. Moreover, the marine context also results in the large amounts of embedded information for browsing during the business, so the screen size of the tablet would be the best choice for prototyping. But of course, other kinds of mobile platform could also be developed in the future along with the web page access through the computer, which fit in users' diverse using circumstance. As the limited time that the thesis has, the prototyping focus will rely on the iOS design specification for the tablet product.

In this section, the concept prototyping process will be introduced from information architecture, flow of interaction, building wireframes to Hi-Fi prototype. With outlining and highlighting the key features of Navigator according to the storyline of refined UUC service, the information architecture had been completed firstly to organize the information into different hierarchies with logic. After structuring the content, the flow of interaction and wireframe were built for expressing the detailed actions and paths different users will take in Navigator and placing the organized information in screen layout. Lastly, the Hi-Fi prototype was created and presented together with the storyboard to the company for evaluating if the experience goals set before had been achieved.

4.6.1 Information Architecture

Before starting with the concept prototyping, the important features of Navigator were summarized and highlighted based on different plots that the new story described before around the experiential UUC service journey. For external customers, the key features consist of project information, customer manual, daily communication, user profile, timetable display, drawing communication, working notes, support team information and campaign participation. When it comes to the internal user of Navigator, the crucial features include project management, progress information, user profile, daily communication, timetable display, experience guideline, contact list and working notes. As it will be unrealistic to develop all of the features listed above under the thesis scope, the selection was made for further emphasized

prototyping, those are:

For customer:
 project information
 customer manual
 daily communication
 user profile
 timetable display
 drawing communication
 working notes
 support team information
 campaign participation

For Rolls-Royce staff:
 project management
 progress information
 experience guideline

Relying on the focused features, the information architecture was designed to give a top-down structure for organizing information into hierarchies and logic. As the combination of organization, labeling and navigation schemes, information architecture could be seen as the structural design of an information space to facilitate task completion and intuitive access to content (Rosenfeld & Morville 2002). Also, Garrett (2011) argues that information architecture is connected with how people cognitively process information, and decisions require to be made about how to structure the content so other people can understand and utilized it when considering to convey the information. A well-designed hierarchy is the basis of a good information architecture, and the work demands the knowledge about the context and recipients for better managing the implementation process.

features and context that are concerned with respective user group. But at the same time, there is still a close relationship between two interfaces which can not be overlooked, for example, the daily communication feature should be modeled from both internal and external perspective. Furthermore, the next action is to define the first hierarchical section of the home page as well as managing subordinate secondary hierarchies. Meanwhile, more detailed functionalities for different feature were considered according to targeted user experience. The emphasized sections had been marked with yellow color which represents to aim for further development through this thesis.

During the information architecture for Navigator, the primary work is to decide to develop customer interface and internal interface separately. The reasons could directly result from the differences between the

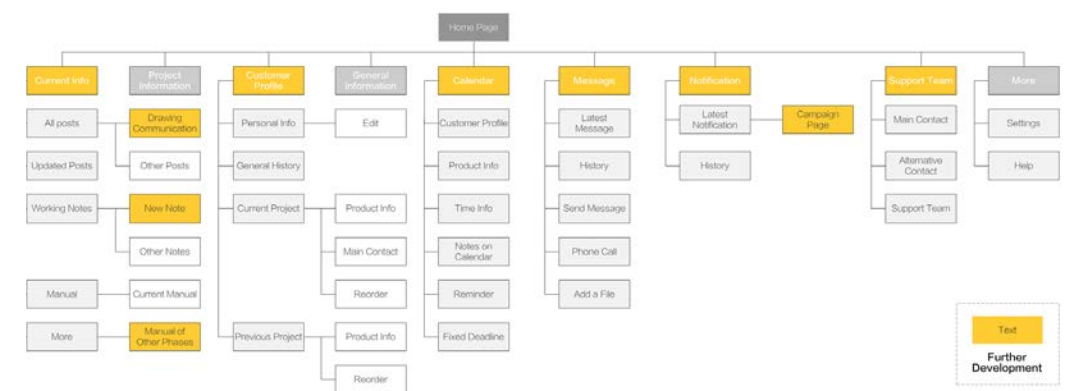


Figure 25: Information architecture of the external user interface

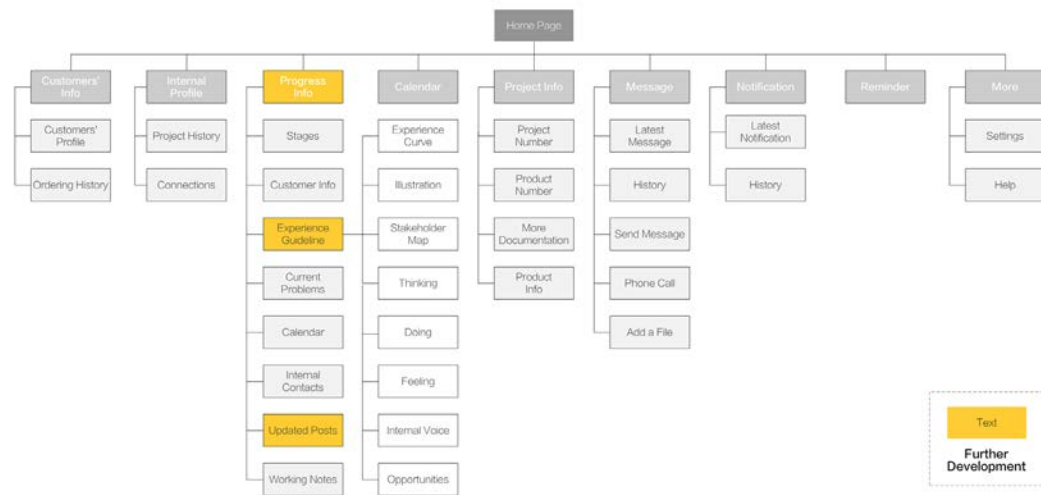


Figure 26: Information architecture of the internal user interface

4.6.2 Flow of Interaction

After the information architecture, the flow of interaction began to be created. The flow approach could help to identify the paths and complex process the users will take as they interact and progress through using the application (Unger & Chandler 2009). For the flow of interaction concerning each user group, it started with modeling how the different users arrive at the login page and enter into their Navigator home pages after doing certain actions. With interpreting sequential interactions through users' angle, the basic flow diagrams are presented below to give a foundation and guidance for building the wireframes. Apart from that, it also could be regarded as a key reference for internal

understanding about this concept if the company plans to implement the Navigator in practice for future.

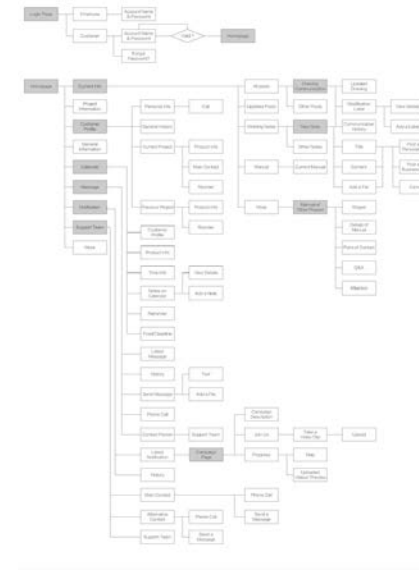


Figure 27
Interaction flow of external user interface

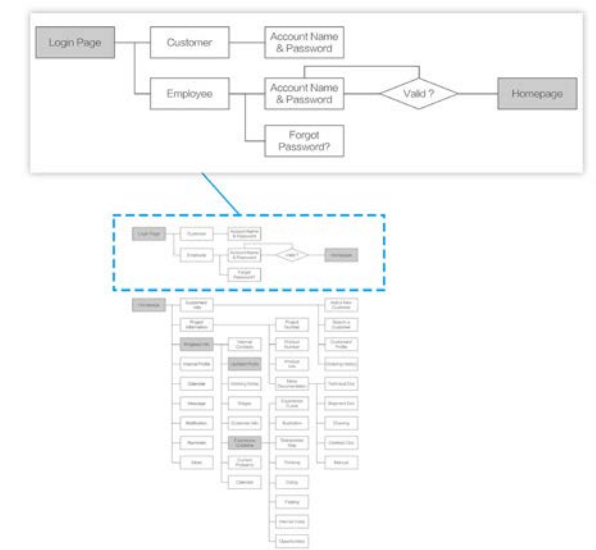


Figure 28
Interaction flow of internal user interface

4.6.3 Wireframes

So far, the second outcome of this thesis 'Navigator' remains in the abstract level during the concept development, the wireframe construction was conducted to make the concept more concrete and tangible within a screen interface. Wireframe is a schematic drawing to support considering the product or service if it is being presented in the right way, how the content will be structured, where the data will come from, how the functionality will be developed, and visually how the page will be laid out and where the emphasis is required (Caddick & Cable 2011). when constructing wireframes, it is important to ensure that each adding component has a useful role (Allen & Chudley 2012).

In general, the wireframes were built by

outline filled with different shades to represent respective component's weight along with utilizing the real data, annotation and placeholder. The modeling process focuses on prioritizing information, allocating different blocks, identifying functionalities and navigation, and also communicating among different pages.

Under the thesis context, I firstly sketched out the framework on the paper, which allows quick construction of the big picture of interface and easily adjusting small details involved. Starting from the considering of wireframes for the home page, the template had been transferred and seen as a reference to rest of pages. After having set of well-developed wireframes in the paper draft, the digital format of Navigator



Home

In the homepage of Navigator, a tabbed navigation bar situated in the bottom of the interface comprises of the most common features for users: latest project information, online message, creating a post, notification and setting and help.

From the holistic perspective, the customer interface is segmented into three sectors. The top left block represents brief customer

information, project progress as well as ordered product name and type. To better depict the rate of business progress for customers, the number of percents is utilized for highlighting which service journey stage the customer is locating at this moment, the block also estimates how many days left for customers before he/she stepping into next service phase. Moreover, the bottom left sector is constructed with a secondary tabbed navigation bar and a scroll window for displaying the updated information about current customer journey stage. For example, the product drawing requires to be negotiated a lot in the engineering to order phase, so the present posts are mostly connected with UUC drawing communication. For the navigation bar, it supports users to switch browsing information among all posts, posts from Rolls-Royce, personal posts as working notes, customer manual and checking the information for other journey stages. In addition, the right area of the customer homepage presents the features concerning the reminder, user calendar, Rolls-Royce contact point information and general project introduction.



Working Note

With viewing the posts, the user could also create a new working note by inputting the post title, content and embedding preferred attachment. The customer could decide if the note is exported through a business channel as a shared file to internal contact or through a personal channel as a private documentation.

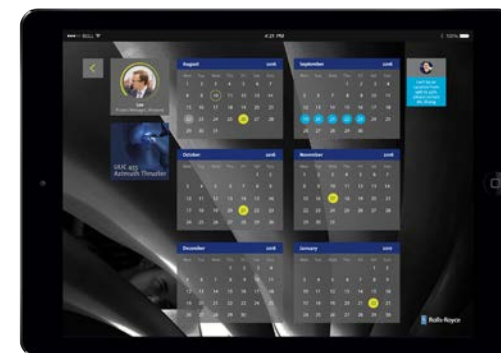


Drawing Communication

During engineering to order stage, the product drawing communication happens a lot, the negotiation page appears when the customer presses the drawing-related posts. Through this shareable page, the customer and internal support team could discuss the engineering details by giving comment labels to the certain place of the product structure. Also, the user could look back the negotiation history if needed.

Customer Manual

Except for looking through the manual of present journey stage, the customers also could know what knowledge they need to understand in advance, what actions they will take and what they should pay more attention to during rest of service process. In the customer manual page, the information has been reframed into different hierarchies based on sequential customer journey stage and information classification. Furthermore, respective support people have been listed for each phase, and there are two blocks situated in the bottom of the page to give customers answers about some common questions and share some open knowledge to them about how to avoid potential loss during their work.

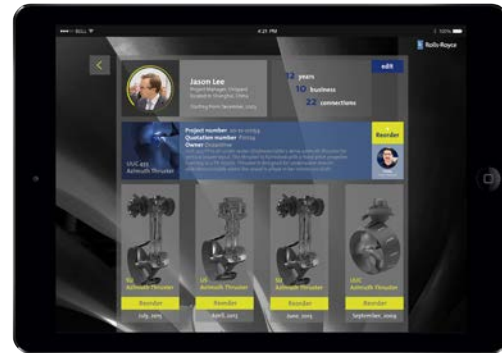


Calendar

In the calendar page, different deadlines for each UUC customer journey stage have been marked as event reminders. At the same time, the customer's calendar can be labelled by his/her contact person from Rolls-Royce Marine. For example, the staff could leave a note to customer beforehand if he/she plans to have a holiday for a couple of days and informs who is the alternative person in charge.

Customer Profile

After pressing the user photo, the customer profile page will emerge to tell more detailed customer information as well as personal business history with Rolls-Royce Marine. The block in the middle of the page is presenting the ordering information of the current project, present responsible person and the reorder option on a touch button. In this way, the customer could easily reorder a same unit through the system if there is an emergency happened and extra components are required soon. In the same page, customer's previous ordering history has been recorded here for users to check early technical specification for a smoother contract negotiation process.



Contacts

In this page, all of the internal employees from the project support team are uncovering that include both direct contacts and back office staff. The user could choose to send online messages to the contact person or invite him/her for a video call communication. And the alternative responsible person is also showing to customers in case that they cannot get expected response from main contacts.



Message

In the prime tabbed navigation bar of home page, the message feature is designed for better conversation through sending text with internal points of contact. The communication history could be reviewed and the window is also available for sending photos or video call invitations to in-house employees.



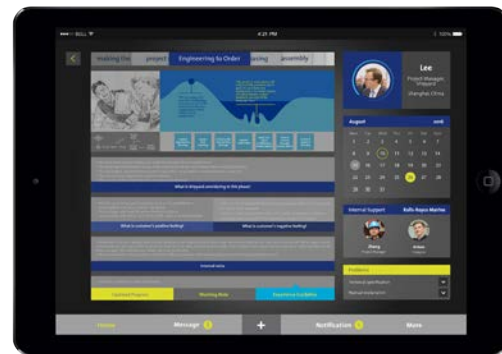
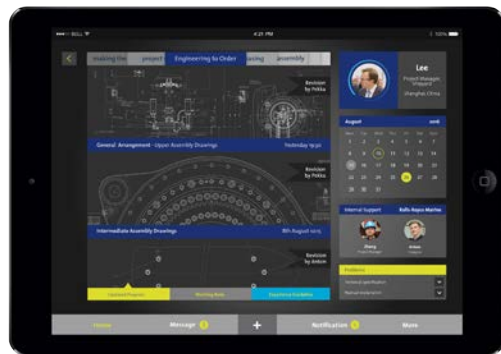
Marine Time in a Week

Through looking at the notification on the navigation bar, the Rolls-Royce Marine anniversary campaign page is showing up to customers. The top sector of this page introduces the online activity 'Marine Time in a Week' and also the theme for this year. With telling the attending dates and more explanation about what could be considered by the customer for taking a video of his/her marine life, the page also presents the statistics of others' participation to promote the user for joining this collaborative filming event. Those statistics involve the number of participators and uploaded video clips, video preview and the locations of different customers all around the world. The map block standing in the bottom represents that the online campaign could build the emotional connection among these worldwide dots.

Hi-Fi Prototype of Internal Interface

Home

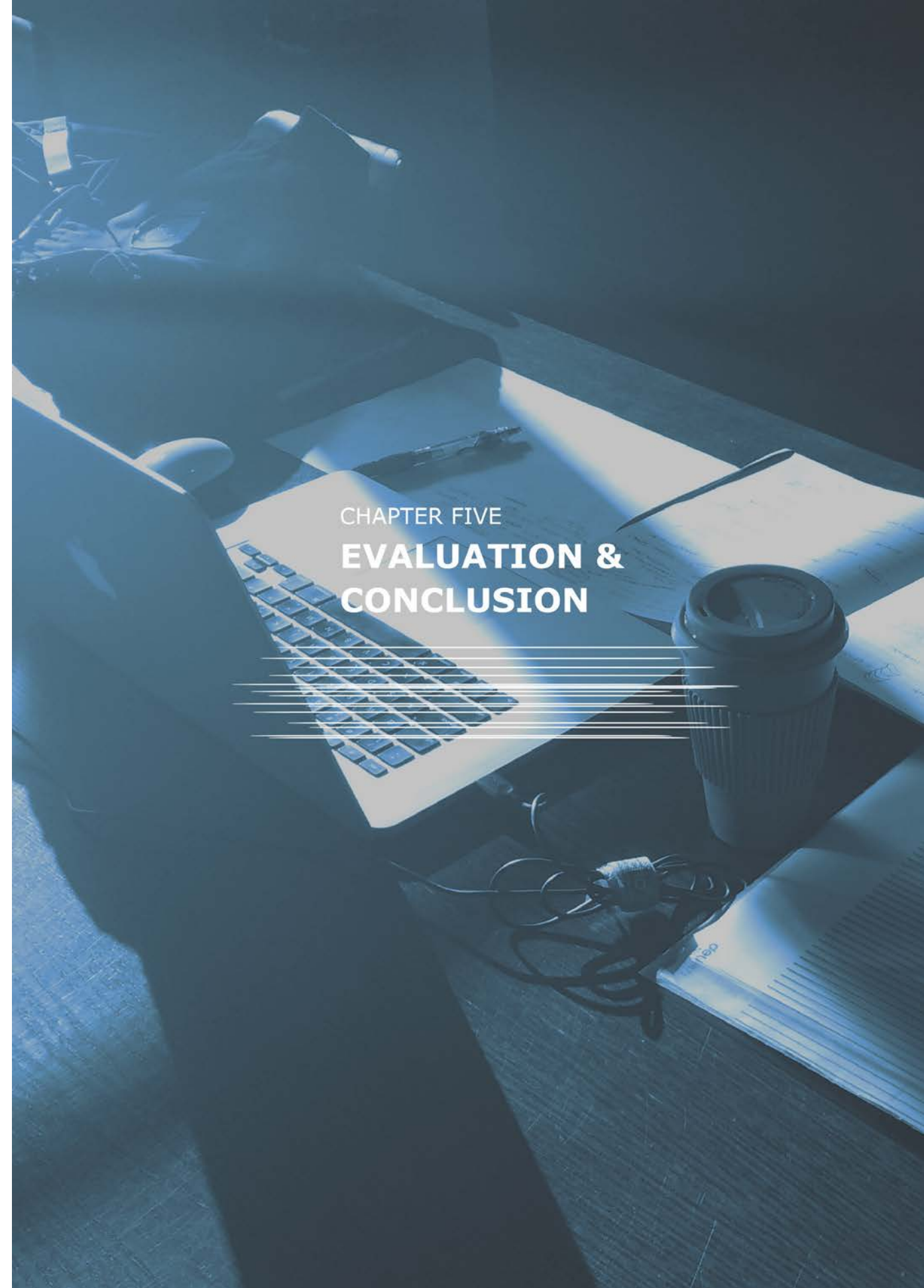
For internal interface, the principal navigation bar in the bottom of home page is same as that existing in the customer interface. The key feature in here is to manage different projects simultaneously by Rolls-Royce internal staff. Each project block consists of the overview of the customer and his/her ordered unit type, project basic information, project progress and touch buttons for checking more related documentation and detailed work. The in-house users could find the certain project easily by utilizing the 'search' feature. Apart from that, the user profile block, reminder and calendar sectors are also situated on the right side of the page.



Project Information with Experience Guideline

After selecting to check more project information with specific customer, the page is switched to describe the work of different service stages, project calendar, other internal support information and the problems need to be solved urgently. When it comes to the secondary navigation bar located in the bottom of the left sector, it covers a block called experience guideline, which aims to offer internal users for deeper understanding UUC customer service experience at each service stage. With better knowing customers' behaviors, thoughts and emotions from previous business, the Rolls-Royce employee could perceive how to strongly support and serve customers in the future for strengthening their positive experience together with decreasing the negative aspects.

CHAPTER FIVE EVALUATION & CONCLUSION



Chapter 5 / Evaluation & Conclusion

As the two results of this thesis have been already presented, this chapter aims to firstly introduce how to conduct the evaluation for the project outcome and how to interpret those feedback in the discussion. Then, the conclusion section will demonstrate the answers to three research questions that were determined at the very beginning of this thesis as well as discuss the benefits the outcome could potentially bring out for internal and external stakeholders and the possible limitations require to be indicated. As a summary of this thesis, my personal recommendations for further study of this topic will be given together with the self-reflection on reviewing the whole process.

5.1 In-House Evaluation

The objective of conducting the evaluation is to see the thesis outcomes from not only designer's point of view but also the perspectives of experienced people who have been located under the application context for a long time. Through their eyes, the opportunities and directions for further improvement and final implementation around the results could be identified with sufficient practicability for the future.

The evaluation session were organized for two times, one was conducting earlier when the first outcome UUC Customer Experience Map had been constructed while the other one was conducted together with the final presentation for the company to assess the second outcome Navigator. Each of the session was lasted for around 2.5 hours. As for the participants, only in-house staff joined the sessions because customers are mainly situated outside Finland thus it was quite difficult to arrange the appropriate time for further discussion or get enough feedback in a limited thesis schedule. Under this situation, Rolls-Royce employees were regarded as the recipients of the project outcomes and also the customer experience experts to give the evaluation for the thesis results in the sessions.

For the first result UUC customer experience

map, the evaluation and reflection have been already described in Chapter 3, which comprises of how internal staff understand the map result, what they have been surprised, where they could most benefit from and how they would utilize the UUC customer experience map in the organization. Through the conversation, the participants expressed their quite positive and optimistic attitudes on the outcome, and they really expect how their colleagues from different departments would react and be influenced after reading through the map content. Thus, the first outcome of this thesis still requires time and staff involvement for gathering more feedback from different angles in the near future.

When it comes to the second session, the evaluation part followed after giving the final presentation to 5 internal employees. With the brief introduction about the first outcome, I demonstrated how the refined UUC service was generated through utilizing experience-driven design approach and the meaning for each experience goal. After presenting the storyline and Hi-Fi prototype of the concept Navigator, an evaluation questionnaire was provided to each participant for collecting their voices concerning the quality of user experience.

5.1.1 AttrakDiff Evaluation

The motivation of having the second evaluation was to determine if the experience goals defined at the very beginning of the experience-driven design process had been achieved through applying the second outcome, that is to say, the quality of user experience. Meanwhile, to find out the space for future improvement around Navigator was the other key objective of the assessment. The AttrakDiff (Hassenzahl et al. 2003) methodology was chosen here to support the evaluation procedure, the key reason is that the approach could measure perceived both hedonic and pragmatic quality of interactive products. In detail, the questionnaire was adapted and framed based on the project context, various word pairs with opposite meanings for each set had been selected to interpret respective experience goals with semantic differentials. For example, the five groups of

words 'manageable-unruly', 'clearly structured-confusing', 'practical-impractical', 'confident-insecure' and 'be in control-being controlled' were utilized to measure if the 'Controllability on Respective Progress' internal user experience goal had been reached. The basis of selecting these certain word pairs for evaluation is traceable back to the interpretation of each targeted user experience.

As one kind of the Navigator users and also the UUC customer experience expert, the internal staff were invited for measuring the user experience of refined UUC service from both internal and external angles. Apart from that, the reframed AttrakDiff questionnaire encourages employees to use two kinds of marks for giving the contrastive evaluation between the current UUC service and the enhanced service journey [Figure 32].

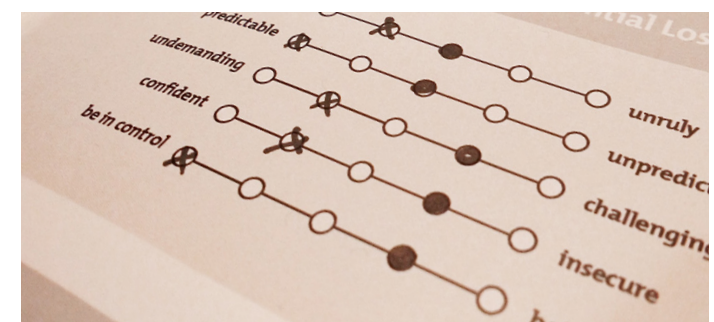


Figure 31: Evaluation session
Figure 32: AttrakDiff evaluation

5.1.2 Result & Discussion

After gathering the questionnaire result, I tried to integrate the evaluation data into one diagram with showing the average assessment information [Figure 33]. For each word-pair set, there was one brown dot that stands for the user's current service experience while the green one represents the new service experience for customers and Rolls-Royce employees. When connecting the dots in the same color, the linear graph could tell obviously if the Navigator concept had promoted the user experience when users are involved in the refined UUC service and where the idea mostly succeed, where it demands more enhancement for better achieving the goal.

From the in-house perspective, the refined UUC industrial service could better supported the users to generate aimed experience compared to the current one, just like the linear trend indicating the result - the green lines are always closer to the left side of the word pairs. For customer interface, 'Professionalism for

Trust' and 'Access to Information for Openness' are the ones that had been greatly reached, where the evaluators considered that the UUC customers would appreciate and rely on the well-structured service support with adequate practicability and specialism as well as the more transparent information system with better accessibility and straightforwardness. In contrast, the balance between bringing human-related or technic-related experience was the concern from internal angle, they expected to deliver more 'being closer to Rolls-Royce people' and 'being cared by internal contact' emotion to UUC customers through the remote communication channel. When it comes to the internal interface, the targeted experience 'Controllability on Respective Progress' and 'Sense of Achievement for Pride' had been successfully attained by in-house users because they felt that they could easily control and manage different projects at same time with confidence, and the durable pride will be gradually increasing during their work

process. On the other hand, the improved UUC service could make them strongly connected with the customer and be motivated through empathic understanding about customer experience. However, the internal staff still look forward to uncovering more understandable and emotional information to stimulate organizational awareness in the future.

Apart from managing the AttrakDiff evaluation, I also received many valuable comments from the session. For example, one departmental manager stated: "I would like to deliver the Navigator concept to the Research & Development (R&D) department of Rolls-Royce headquarters for further consideration, it could be applied for not only UUC industrial service but also the service journey revolving other types of units." Moreover, the other staff said: "I think the Navigator would greatly support us and our customers a lot, it could

also help to reduce extra workload for both parties where some frustrating moments happen during the service process." The outcome was regarded as a very feasible idea for internal and external stakeholders, but one employee was also concerned about the changes of users' behaviors when the idea will be implemented. As the marine business process has been fixed for many years, the users already get used to the traditional service journey, so the answer about how to support people from inside and outside the organization to preferably adapt to the new service with less learning time involvement requires to be figured out in a further step.

5.2 Conclusion

To sum up, the thesis was carried out by relying on a case study for a business-to-business company in marine domain. It aims to explore the UUC customer journey through utilizing the experience lens within a targeted industrial service scope, which also represents the integration of conducting the service logic with experiential thinking.

At the very beginning, the UUC service process was mapped with Rolls-Royce staff to identify the key service interactions through different touchpoints as well as understand the service actor network inside the company and gather UUC customer service experience through internal eyes. Then, the customer study was continued for supporting to construct the final UUC customer experience map with first-hand customer experience expression and enriched journey context. By presenting the UUC customer journey map in a visual way, in-house

better understanding and realization on the customers' behaviors, thoughts and experience could be achieved. Meantime, the map helped to uncover and pinpoint key problems and opportunities of UUC customer journey for company's future service development. In this thesis, one possibility was offered to refine the UUC service from experiential angle in the near future, which not only enables to benefit the customer experience during the UUC business but also better support internal users' working experience.

At this phase, the holistic process of constructing the two outcomes of this thesis could support to answer summarily the three research questions defined earlier:



How to support internal employees of Rolls-Royce Marine to understand and perceive the customer journey under UUC context?

For managing the complexity of the industrial service in B2B company, the customer experience map was the tool to bring a shared understanding about UUC customer journey for Rolls-Royce Marine with different hierarchies.

In the map, various blocks interpret the customer journey from respective aspects and the content of the map is derived from internal and external studies. By describing the customer classification and regrouped service stages, the internal staff could begin with perceiving the UUC customer journey on the basis of time dimension and customer data distinction. For building the vertical coordinates of UUC customer journey map, the blocks of Doing, Thinking, Feeling were determined for explaining the sequential actions of UUC customers, clients' thoughts and expectations on certain moments along with the positive and negative emotions the customers have for different journey phases. Moreover, the stakeholder relationship and touchpoints existing for each journey stage had been considered in the map to demonstrate the service context for internal readers. Except for highlighting the first-hand CX through experience curve and experience tag, the in-house standpoints and expectations regarding UUC customer experience are also involved in the map for organizational wider and deeper realization on customer journey. In the bottom of the map, the opportunity block states the space where the company could drive the innovation and improvement for better customer service experience in the future.

By uncovering the UUC customer journey little by little to internal employees, the visualized UUC customer experience map could support staff from different departments to digest the importance of knowing what customers are facing to in the daily work. To better

understand where the internal staff are standing at in the service network, what impact the position might lead to and how the impact would reflect to the customers. The in-house awareness about customer service experience could be raised, and everyone can take the personal improvement point to rethink his/her own way of working for better serving the clients through their contributions.

How to utilize customer journey map to bring Rolls-Royce the big picture of UUC customer experience?

Through applying the experience curve in the UUC customer experience map, the chronological order of experiences had been highlighted in visualization to bring Rolls-Royce the big picture of UUC customer experience. The horizontal axis of the wave stands for the transformation of customer experience based on time dimension while the vertical axis describes the intensity of the experience. After browsing the map, the readers could easily classify the quality of the customer experience throughout the UUC customer journey, and the customers' quotes marked on the wave could help internal staff perceive the reason behind certain experience with empathic understanding.

Based on the research inside and outside the company, the experience tags had been listed in the map to specify the customer experience in current UUC service instead of just grouping them into positive or negative category. The experience labels could be seen as the reference when the experience goals require to be defined for enhancing the UUC customer service experience.

By constructing an understandable and shareable frame of UUC customer experience for Rolls-Royce Marine, the crucial moments of up and down about customer experience had been seized and uncovered. Looking at the experience information with both entirety and part through different blocks of the map, the

company could truly realize where it has attained success, where it has not and where the new chances are located.

How to enhance the UUC customer journey from experiential perspective in the near future?

To generate the bridge between what I have learned about UUC customer service experience and what I aimed to provide to customers in the near future, the experience-driven design approach was utilized in this thesis for refining the UUC customer journey from experiential angle. It started with capturing the key opportunity from the information included in the UUC customer experience map, and then the general focused orientation had been decided after several rounds of brainstorming and communication with the company.

After that, experience-driven design methodology could start to support setting the experience goals for the refined UUC service. According to the data characteristics and

project context of this thesis, the empathy and brand approaches were selected for framing the intended experiences. With having the targeted experiences as the innovation objectives and directions, the concept development could be continued to figure out how to map and make meaningful connections between the company and UUC customers, and how to reduce the pain points from experiential angle for better CX and UX in UUC service. In the end, the 'Navigator' concept had been constructed as the ideation outcome that is expected to evoke the intended experiences, and it brings different values to both internal and external stakeholders.

After presenting the concept with user profile and storyline, the Navigator prototype was created from information architecture, the flow of interaction, wireframes to Hi-Fi prototype. For the evaluation stage, the experience goals defined through experience-driven design approach could support to assess the quality of user experience around the refined UUC service together with to identify the room for future development.

5.2.1 What are the benefits

To apply the experience design thinking into UUC service enhancement process, new customers would have more trust in Rolls-Royce Marine based on the transparent information access, professional information management and user-centered service guidance in the experiential customer journey. Meantime, the loyalty of old UUC customers would be lasting according to the refined communication channel and the more open marine dialogue that is constructed by Roll-Royce. In the end, the UUC type unit itself is no longer the only important thing for customers during the business, the user experience and customer experience could be the selling point for the

company to strengthen its competitiveness in the sales stage rather than just focusing on the price negotiation. Furthermore, the customer experience could be spread through word of mouth in the marine customer network, which is greatly beneficial for Roll-Royce future marketing. In addition, the brand image is getting increasingly impressive for customers and the company will earn more reliability and reinforce the relationship with customers based on the personal emotional connection established through the improved service journey. Even though the thesis is mainly working on the new shipbuilding case, it could also promote to extend better CX and UX in the

maintenance stages.

When it comes to the benefits for Rolls-Royce internally, the two outcomes of the thesis could firstly bring more empathic understanding and awareness about customer service experience to the staff from different positions, the organizational experience mindset could start to be framing. With enhanced working experience through Navigator concept, the in-house working quality and satisfaction will be increased and their trust and pride on company's performance will be enhanced at

5.2.2 Limitations

Simultaneously, the limitations of the thesis outcomes should be considered. As mentioned in chapter 3, the first outcome UUC customer experience map cannot be utilized to stand for UUC customer voice in the global market. As the research time is restricted, the qualitative data gathered from the external study should be seen as the starting point for the company to enrich the experience map in the future. Moreover, the two results are constructed under the context of certain product, so the experience map and Navigator idea demand

5.2.3 Recommendations for Further Study

For continuous study in the future, more consideration concerning the customer research for enriching the UUC customer experience map has been illustrated in Chapter 3, such as rethinking the time arrangement, interview scope and way of information transfer. The principal suggestion for further work on this thesis is to conduct more evaluation by Rolls-Royce Marine. For the first outcome, the map requires more reflections from internal staff who are standing at different positions in the stakeholder network,

the same time. In this way, the improved internal user experience would interweave with the customer experience, they are interactional and could affect each other towards a better service. Apart from that, the Navigator outcome shows a possibility for Rolls-Royce to develop their UUC industrial service through experience lens, the company could consider other exploration and innovation in the future around UUC service or the services relying on other types of products, more experience-related decision making and actions could be supported inside Rolls-Royce Marine.

further adjustment when the experience study will be expanded in the organization according to different customer base and project context, and of course, another round of test and evaluation will be needed then. Besides, the thesis results should be viewed and assessed by more internal staff and external customers for collecting the standpoints from various angles. For example, the refined UUC service concept should be presented to customers outside Finland to gather the first-hand user experience feedback.

the value created by UUC experience map should be verified with a long-time observation instead of only presenting the content in one session, that is to say, the organization should find the right way for encouraging people to interact with the map in their working process.

As for the second outcome - the refined experiential UUC service through Navigator should also be sequentially assessed in the following study. For example, the wireframes require to be tested about the functionalities

of the interactive product by external users, and the Hi-Fi prototype should be offered to customers as well as in-house users as an actual application in the mobile device during the evaluation for further service development.

5.2.4 Self-Reflection

The thesis has provided me with the opportunity to collaborate with Rolls-Royce Marine for the second time, but it is a quite different journey compared to the project I did before. Through the months of work, I have acquired a better understanding about the complexity and natures of the Industrial service in business-to-business context. The holistic process taught me how to integrate the theoretical knowledge with the marine context and how to balance between the academic and practical aspects under the thesis work. If I would depict my thesis journey in a visual way, it would not be a straight line, but rather a curve filled with diverse experiences.

Starting from the internal research, I have learned the importance about considering the characteristics of study in Marine domain into the working process, such as the preparation on interview script should take into account the respective background and understanding about customer experience that different interviewees have, consequently plan B is always necessary to be predefined. As for the customer study, the way of coordinating the work with design company is what I never experienced before. I appreciate that the people from Idean could contribute to the part of this thesis work and exchange the thoughts with me on planning the customer research.

On the other hand, the thesis has taught me a lesson concerning time management, which includes how to factor in the extra waiting time and how to deal with the change of project schedule. Also, sufficient

Additionally, the company could work on considering how the existing internal working system and Navigator idea could coordinate with each other in practice.

and effective mutual communication is quite essential because I am acting as an outsider for company and it is crucial to ensure that there is less misunderstanding on both parts. During the conversation, we should be open to different voice as everything has a root, to figure out the reason behind what the interviewees expressed is the key for the thesis. All in all, the thesis journey has definitely been unforgettable for me, and I know that what I have experienced and attained from past seven months would bring more possibilities in the future.

This is not the ending but a perfect start.

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Image Sources

[Figure 1] Application on the drill ship. Rolls-Royce Marine.

[Figure 2] UUC azimuth thruster. Rolls-Royce Marine

[Figure 8] Adaptive Path, 2011, Rail Europe Experience Map <http://adaptivepath.org/uploads/documents/RailEurope_AdaptivePath_CXMap_FINAL.pdf>

[Figure 14] Customer in-depth interview, Rolls-Royce Marine. Taken by Idean.

[Hi-Fi Prototype - Navigator Interface] Attached product photos, engineer drawings and user photos. Rolls-Royce Marine.

The rest of figures are created or adapted by Yue Hu.

Appendix

Internal Interview Plan

Research Goal

- To figure out detailed service steps for each stage
- To highlight key interactions and interfaces between the customer and employees
- To generate first image of customer and understand different roles of internal stakeholders
- To gather internal thoughts of current customer experience and expectation around respective touchpoints
- The internal study results enable to be integrated and compared with the external study outcomes

Interviewee / staff from different business areas

Time / 40 minutes - 1 hour

Format / Individual semi-structured Interview with application of touchpoints cards

Icebreaker

The interviewer introduces briefly the project background, interview objective and meaning of experience.

- Could you please introduce yourself and your working characteristics?
- Which stages of service process are you involved in from making the contract to product in service?
- Who is your customer? Please tell more details about them, such as personality, working position and key interactions.
- Who is the internal stakeholder that closely work with you for customer? Please describe your working experience with them.
- How did Rolls-Royce collect the customer data normally?

Service Process Mapping with TouchPoints

The interviewer introduces the toolkit to employee and shows an example if needed.

- From now on, please switch your role to the UUC customer that you mentioned before, describe each detailed step in a sequence the customer is going through during this selected stage, e.g., making the contract.

The interviewer is responsible to write down each step in different sticky notes, and put them on the service journey board one by one.

- By choosing the touchpoint cards, please explain the customer interactions as they do business with you over time and map the certain touchpoint card under related step. Some questions could be inquired, e.g., what is the most important interaction?

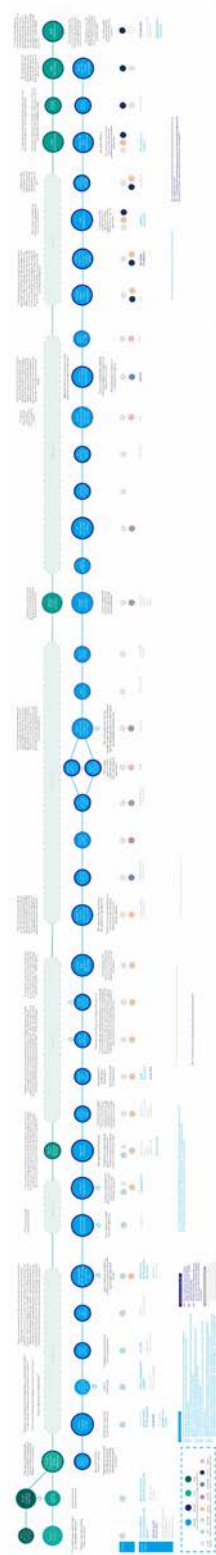
Blank touchpoint cards could be filled in if needed.

- Please recall the previous business in general and give the red or green dot to the touchpoint that brought the customer good or bad experience during certain interaction, and illustrate their possible expectation the customers reflected before.

Always remember ask WHY & WHAT HAPPENED. The interviewer moves the service step to the proud or inadequate area based on summarized explanation afterwards.

- Do you see any other challenges or opportunities that might affect your customer experience during this service stage?

Service Process Map from In-House Study



Customer Research Plan

Research Goal

- To enrich the understanding about customer persona
- To perceive the stakeholder network outside Rolls-Royce Marine
- To find out possible missing service steps and touchpoints
- To identify the key moments and interactions for customers
- To grasp customers' positive and negative experience through different touchpoints
- To see customers' expectation for their better service experience
- To recognize key problems and opportunities of UUC customer journey from experiential angle

Interviewee / customer from Asia and America including shipyard and ship owner

Time / approximately 1 hour 30 minutes

Format / in-depth Interview with customer experience mapping

Warm-Up Questions

The interviewer introduces briefly the project background, interview goal and structure.

- How many years have you been in this company? What are your key responsibilities
- What are your key responsibilities related to working with Rolls-Royce?
- How would you compare working with Rolls-Royce to other vendors you're working with
- As a partner company, what kind of brand image does RR have in your opinion?

Service Process Discussion

The interviewer introduces the service process cards to customer.

- Do you agree with these phases? Could you select and shortly summarize the project phases that requires your participation? Which steps are the most relevant? Are there some steps that are relevant for your job, but are not mentioned in the cards?
- Could you briefly explain each of these selected phases and what was the main objective of it?
- Could you describe your workload of each step? Which of these steps cause the most work?
- Who were you working with from your team and from Rolls-Royce? What was your role in this? How was the stakeholder map changing during the project?
- How did you handle communication within the internal and external team? What kind of channels are normally used to share information and communicate? What kind of information is shared in each step of the process?
- Are the current communication channels sufficient for sharing the needed information and making decisions? Is there something that could be improved?

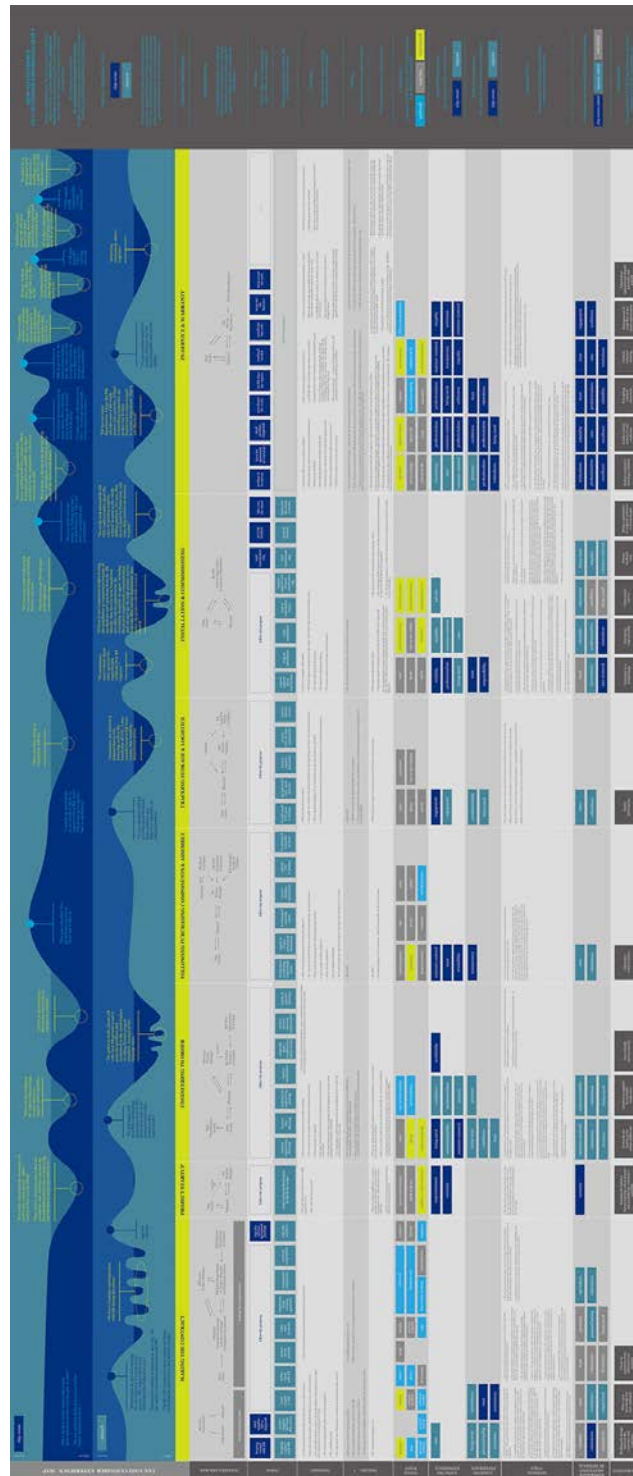
Experience Mapping

- Could you address the "HI'S and LOW'S" of the project? What parts went surprisingly well, which parts were just routine work and which parts were problematic?
- Let's talk about these Hi's and Low's. What happened here?
- Is there something in the process that always happens and which cause you extra work or stress? Why?
- Is there something in the process that always gives you a relief or a good, positive feeling? Why?
- If these Low's you mentioned would be fixed, how would that affect to your work?

Wrap-Up Questions

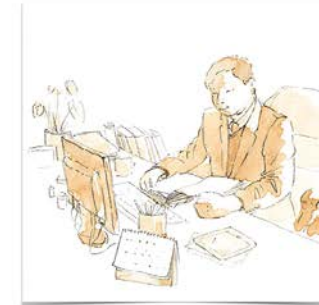
- Could you tell your expectations on working with Rolls-Royce in the next project. What kind of hopes and concerns you have?

UUC Customer Experience Map



User Profiles

User Profile: Shipyard



Mr. Wang

35 years old
Commercial Manager of A Chinese Shipyard
8 years working experience

He is taking care of the price and contact when making the contract with the supplier.

Generally, he is working in the office building of the shipyard and sometimes he has the business trip to negotiate with the supplier.



Mr. Lee

45 years old
Project Manager of A Chinese Shipyard
12 years working experience

He is supporting commercial manager to take care of the technical details and requirements when making the contract with the supplier. After that, Mr. Lee is the main contact of the project.

In usual, he is working in the office building of the shipyard and showing up in the factory sometimes. At some certain phases, he will go for the business trip to visit the supplier place.

User Profile: Rolls-Royce Marine



Pekka

40 years old
Area Sales Manager of Rolls-Royce Marine, Finland
8 years working experience

Pekka is working in the Exploration and Production Segment and his work mainly focuses on the business of Chinese market. He visits shipyard place now and then to keep contact with the customer. During sales phase, Pekka is the main point of contact. After getting the contract, he will deliver the package to the certain project manager.

Usually, he is working in Rauma office and meeting with customers overseas.



Jussi

45 years old
Project Manager of Rolls-Royce Marine, Finland
10 years working experience

Jussi is working as the main internal customer for other departments of Rolls-Royce Marine. For external side, he is the central point of contact for customers after the project startup. The customers he mostly communicates with are located in China, Singapore and Korean.

In general, he is working in Rauma office and sometimes he will visit the Rolls-Royce factory if there are something to check. Also, he is the one who meets with customer face-to-face at different project phases.

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