Customer-Centered Development of a Viable Digital Service

Case Study - Service X

Minna Välke

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Customer-Centered Development of a Viable Digital Service – Service X

Minna Välke
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Laurea University of Applied Sciences **Abstract**
Degree Programme in Service Innovation and Design
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Minna Välke

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The objective of this thesis is to study how customer experience, user experience and design thinking theories can contribute to new service development with agile and lean frameworks. Furthermore, the thesis aims to utilize the information from the abovementioned frameworks in order to create a minimum viable product of a new service. Measuring the minimum viable product is also part of the project and is also included to the work.

This thesis is a case study commissioned by a company providing digital services in Finland. The empirical part of the case study goes through the process of developing a digital service for households to be used in Finland with the help of design thinking approach and tools. The co-creative methods were used together with customers in order to gain understanding of customer perceptions and innovate solutions for the topics raised. Mostly the qualitative co-creative sessions with customers were face-to-face meetings, supported with quantitative research to validate the qualitative findings. The empirical part of the thesis is supported with information from customer experience, user experience as well as agile and lean models. The development process towards the minimum viable product is described in the empirical part, with measurement methods in order to ensure the developed digital service meets customer demands and requirements, with a customer centric approach. The process is aiming to the launch of the new service.

The results reveal how measurements has developed over time, showing areas where the service meets customer's demands but also revealing areas for further improvement. The results also tell how the iterative process was working out well for the project, having an iterative approach with testing and validations. The success of the minimum viable product at described, but the final judges are the customers and their feedback. Therefore, the process continues towards customer experience measurement where the whole service is being evaluated by customers. Feedback is gathered with different customer and user experience surveys, both qualitative and quantitative to find out areas for improvement and further development.

The taken approach and information can quite easily be used in different software development projects, as the process can be copied and adjusted to fit to a specific target project, design thinking methods should be considered case by case as the customer problem space is very context dependent.

Further research could be conducted with the help of Futures Thinking methods to outline different futures for digital services in this field, in order to lead the change as the company is running in the forefront in the competitive landscape of the field.

Keywords: Design Thinking, Customer Experience, User Experience, Agile

Laurea University of Applied Sciences **Tiivistelmä**
Degree Programme in Service Innovation and Design
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Minna Välke

Elinkelpoisen digitaalisen palvelun asiakaskeskeinen kehitys – palvelu X

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Tämän opinnäytetyön tavoitteena on tutkia miten asiakaskokemuksen, käyttäjäkokemuksen sekä muotoiluajattelun teoriat voivat edesauttaa uuden palvelun kehitystä, jota tässä työssä toteutetaan hyödyntäen agile ja lean-malleja. Opinnäytetyö lähestyy yllämainittuja teorioita vieden oppeja palvelukehitykseen ja käytännön tavoitteena on luoda uudesta palvelusta ns. minimum viable product (MVP) sekä myös määrittää MVP-n mittaus onnistumisen varmistamiseksi.

Opinnäytetyön toimeksiantaja on suomalainen yritys, joka tuottaa digitaalisia palveluja monille eri toimialoille. Työn empiirinen osuus esittelee prosessin, jonka avulla uutta palvelua on kehitetty, käyttäen apuna muotoiluajattelun metodeja ja työkaluja. Uusi kehitettävä palvelu tulee käyttöön suomalaisiin kotitalouksiin laajasti, joten palvelua on lähdetty kehittämään yhdessä käyttäjien kanssa. Käyttäjien havainnointi ja havainnoista nouseviin asioihin yhdessä käyttäjien kanssa ratkaisujen miettiminen on olennaista käyttäjäkeskeisessä palvelukehityksessä. Suurin osa käyttäjähaastatteluista suoritettiin yksilötapaamisina, joitakin tuloksia validoitiin myös määrällisinä tutkimuksina internetissä suuremmalla joukolla käyttäjiä. Empiiriseen osuuteen on tuotu oppeja asiakaskokemuksen ja käyttäjäkokemuksen teorioista mutta myös ketterän ohjelmistokehityksen malleista. Kehitysprosessi kuvaa MVP-n kehityksen ja sen mittaamisen käyttäjillä, jotta voidaan varmistua, että uusi palvelu täyttää käyttäjien vaatimukset ja toiveet. Prosessin lopputulemana on uuden palvelun lanseeraus.

Palvelun kehittymistä ja käyttäjäkokemusta on tärkeää mitata asiakkaan silmin, jotta tuloksista ja palautteesta saadaan ymmärrys, mitkä alueet ovat palvelussa hyvällä mallilla sekä missä on vielä parannettavaa. Iteratiivinen lähestyminen palvelun kehitykseen osoittautui hyväksi menetelmäksi, sillä MVP-n testaus ja validointi asiakkailla on olennainen osa kehitysprosessia. MVP-n onnistumista kuvataan myös tuloksissa, mutta lopulliset tulokset onnistumisesta tulevat vasta lanseerauksen jälkeen asiakkailta, jotka ostavat ja käyttävät palvelua ja antavat siitä palautetta. Lanseerauksen jälkeen käyttäjät ovat asiakaskokemuksen mittauksen piirissä, jolloin uutta palvelukokemusta mitataan laajemmin koko asiakaskunnalta sekä asiakaskokemus- että käyttäjäkokemuskyselyin, jotta saadaan palautetta ja löydetään iteratiivisia parannuskohteita sekä jatkokehitysmahdollisuuksia.

Opinnäytetyössä käytetty prosessi on käytettävissä helposti muihin ohjelmistokehitysprojekteihin, sillä prosessia on helppo hienosäätää tarvittaessa. Design-ajattelun metodit ja työkalut pitää miettiä tapauskohtaisesti, sillä käyttäjien kohtaamat haasteet ja ratkaistavat ongelmat ovat aina hyvin palvelukohtaisia.

Avainsanat: muotoiluajattelu, asiakaskokemus, käyttäjäkokemus, ketterä kehitys

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1 Introduction

Customers today are surrounded by different digital services all over the world and they have more options to choose from than ever before. Whilst services are being used, also today's companies collect more data than ever from the customers' service usage. Companies collect different sort of data in order to analyse their digital services and improve their services in order to gain trust and loyalty of their customers and beat the competition. Whilst companies have plenty of collected data from service usage, many customers are still dissatisfied with the services they use. Companies in many fronts have challenges in taking advantage of the collected data and using it systematically to improve their services to meet better the customers' needs. Globally the focus has been shifting from the company-centric service development into customers' usage of the service and finding out how customers perceive the service they use. Companies have taken different approaches to manage the customer's experiences in their service context but going deeper into customer's life context is still an area in which many companies have a lot to gain on order to became truly customer-centric company and win the hearts and minds of customers, both old and new.

Customer Experience as a term has been a prevalent in companies for years, but what it means in different companies and how customer experience is managed in companies varies immensely. Usually customer experience is explained how companies are trying to understand their customer's experiences and perceptions about interactions with their company over customer lifetime. In order to stay profitable and provide customers' more reasons to stay one company's loyal customer, companies are actively looking into new ways of expanding business and provide new services to current and new customers. In order to do that, they need new tools and techniques to delve this deeper. Design thinking has been emerging solution to tackle these challenges the companies are facing in their strategy and customer experience management.

The environments, where businesses are operating, are changing constantly. It has been agreed that optimizing the customer experience is a key strategy to increase sales figures, market share and profits. Only companies that deliver desired customer experiences will survive in the next competitive battleground. Customers don't want to buy product or services, they want to solve their problems, they attempt to fulfil deeper emotional, sensory and hedonistic desires. (Klaus, 2015).

1.1 Background

Digital services' evolution has been strong for the past decades, the way forerunner companies like Google, Amazon, Netflix, and Spotify have been able to shift the customers and consumption from traditional channels into internet and while doing so, they have been able to provide user's better service with better quality and meet the user's needs in a timely manner. This major transformation has been heavily supported by focusing on the customer's needs and customer's expectations instead of companies' internal processes and service architecture. With help of digital transformation, the consumption of e.g. media or music services have changed the way they are consumed. Nowadays, consumption of a service is not tied to time or place, services are available and can be consumed at the time of the user's convenience. The future looks bright also for digital services, e.g. media or music as adoption rates are increasing, as also the users who are technically not so advanced notice the benefits of digital services and take these services into use. The challenge that many of users face is more towards overwhelming options to choose from, as there are many service providers and within their service, there are many different packages to choose from. The winners of the future are the ones that can meet the user's needs in the most efficient way, providing best solution to each target customer group, and give the users the best value in their experiences.

1.2 Introduction of the case company

This research is done for a Finnish service company, which is operating in B2B and B2C sector providing digital services for both sectors. The company has long roots in Finnish history, the company being more than 100 years old and it has been able to grow and renew its business along the long history. Currently the company is market leader in certain areas of business and developing continuously to be even stronger in all business fronts. This specific thesis is focusing on a certain business domain, which has one part of the service under renewal. The service has been existing for more than ten years now, and it has developed a long way compared to first generation of the service. The service has a combined hardware and software part, meaning customers have a hardware part at their homes, through which they transact with the service at their convenience. The service can be used also in mobile apps or online, untied to time or place. The service is widely used in Finland, demographics of the users reveal that all age groups and socio-economic backgrounds are consuming the service. As the service usage is mainly taking place in user's homes, it offers important elements of accessibility to all users, e.g. retired people, people working in shifts can have the service working for them and they can consume and enjoy the service at their convenience. The company wants to ensure the renewed service will attract users, both existing and new, the new service has to meet versatile user needs best possible way from customer's point of view. The future looks promising and service has a good growth potential amongst new users. Now with this new project, the company wants to take the service experience to a new level, develop

an upgraded service experience for its current and new potential customers. The current service is in need of updates both from customers' perspective as well as technical performance. The service currently is built on a 3rd party hardware and software, but all feasible parts of the service are under the control of company's own resources and administration. Having the 3rd party hardware part gives the service certain limitations in the innovation side; the company is willing to be open and find solutions outside the limiting 3rd party restrictions. The company is using Agile software development, namely Scrum model to develop software to this service in question, one Scrum team is dedicated to this work and this team is using two-week sprints to develop entities to service in question. The current service is base for the new development, although many parts of the current service need to be rebuilt to the new hardware. Whilst having the current service as a baseline, the company wants to ensure the new service meets customer's growing demands and expectations towards digital service. Therefore, customer centric approach is taken into use, developing hypothesis and validating them with potential target customers to ensure the service meets the demands of the future customers.

The company has been managing the customer experiences for many years by collecting qualitative data, the company has plenty of data from the current usage, users of the current service are sent questionnaires frequently to collect feedback regarding pain points and delights of the service they are using. The company is actively using Net Promoter Score to measure the recommendations of the service. The current service NPS varies from 25 to 35. Whilst the company has a lot of data from usage of the service, quantitative survey data with remarkable amount of free comments from the users and also specific data sets from a certain pain point, it is hard for the company to filtrate all the data into actionable insights without extensive manual labour. Data is stored in different systems and merging the data requires skills that are in demand in any company. The company is doing qualitative interviews more based on case demands, e.g. for persona work qualitative research was a used as a method. The company knows the users of the service are mainly households, single people or families are consuming the service, age ranging from 35 – 80 years old.

When planning the new service, hypothesis can be made based on the data sets available in different systems, but to take the new service development into a new level, co-creation together with current and future users is opening new ideas and innovations. Innovation is a remarkable competitive factor in business and utilizing users as a source of innovation is increasing (Ojasalo et al., 2009)

This thesis is focusing on finding out what should the first version of the renewed service consist of from the customer perspective, namely the service that is the going to be Minimum Viable Product, in order to be successful in the commercial launch. This thesis goal is to find ways of collaborating and innovating with users to ensure the user's aspirations and goals are

met in new service together with targets from the company to run a profitable and growing business.

1.3 Research and development objectives

This thesis is a research-oriented development project focusing on creating a Minimum Viable Product of the new service to be launched. This project is taking advantage of customer experience, design thinking and user experience theories, trying to find out how the theories can help a company help to create a new successful service to be launched. Target of this thesis is to find out what should the upgraded service baseline be, with help of theories and taking the process through a service design framework with iterative approach to create it together with customer. The initial service baseline will be the basis of the service in the launch and iterative co-creation with customers will continue after the launch. In practical level Design Thinking and Lean Startup methodologies are used with current and potential users, in order to validate initial findings and build upon previous research in order to establish the new baseline for the service.

The research questions are as follows:

- How Customer Experience, User Experience and Design Thinking theories can help to define the MVP of a service and ensure that the MVP will be successful?
- How to measure the success of the MVP?

The outcome of the thesis is the process and journey description to MVP of the new service development with help of design thinking tools and methodologies, brought together with research findings and validating business potential whilst taking customer's expectations and aspirations into account.

1.4 Structure of the thesis

The first chapter introduces the topic to the reader in general level, going through on general level why customer experience is such an important topic and why it matters when creating new services. First chapter also introduces the case company and service being developed in the case company in a general level, introducing also the goal of the thesis along with research questions. In the second chapter the goals of the thesis are approached with theoretical lenses, how different theories help to define a service that meets the criteria set from customer perspective as well as business perspective. Third chapter introduces the process taken with help of service design tools and methods as well as Lean Startup and Agile approach to find viable solution for customers as well as business. Fourth chapter goes through the findings. Fifth chapter goes through the research results. The sixth chapter discusses the

conclusions, triangulates the process and metrics from both customer and business perspective, and proposes new perspectives to be considered for further studies. Overall structure of the thesis is visualised in Figure 1: Structure of the thesis.

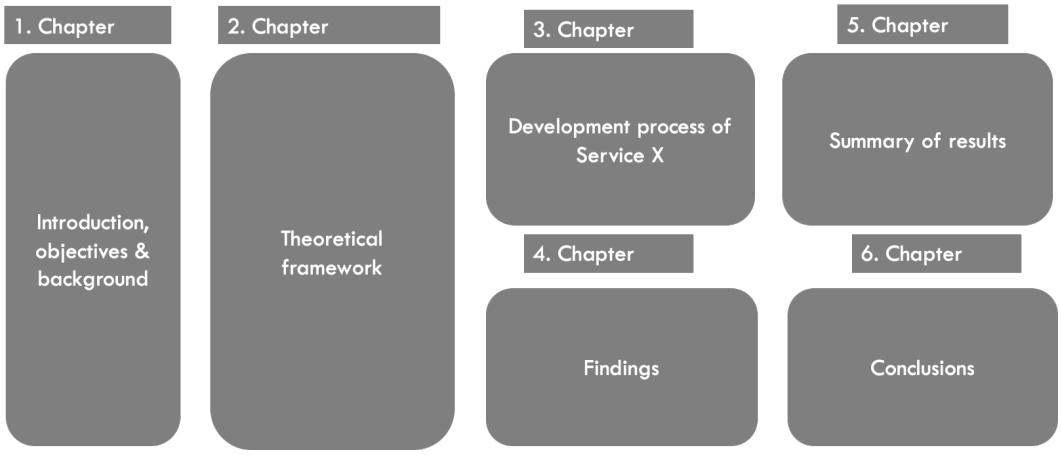


Figure 1: Structure of the thesis

1.5 Key concepts and delimitations of thesis

Key concepts are explained very briefly in this chapter. Additionally, they are more broadly explained in the theoretical framework part of the thesis.

- Usability means all aspects of developing products/services efficiently, effectively and to the highest customer satisfaction.

- User experience (UX) takes into account user's feelings, needs, attitudes and motivations towards a product or service use.

- Customer Experience (CX) takes into account customer's relationship with a business holistically, summing up how customer is engaging with the business or brand, meaning how customers think, feel and perceive interactions with a company over time

- Net Promoter Score (NPS) developed by Fred Reichheld, gives one figure to the management implying the loyalty of customer relationship. Customers are asked whether they would recommend a company or a service to their friends with a scale 0 – 10. Those who respond 9 or 10 are called promoters, 7 or 8 are passives and 0 – 6 are detractors. NPS is calculated by subtracting the percentage of customer who are

detractors from the percentage of customers who are promoters. NPS question always includes open feedback section where the respondent can argue why the score was given.

- Design Thinking is a process of creative problem solving (Ideo)
- Customer-Dominant Logic (CDL) is view where a customer is in the centre rather than a service or a product. (Vargo and Lusch, 2014)
- Goods-Dominant Logic (GDL) views the production and exchange of goods as the central components of the business and economics. (Vargo et al., 2014)
- Service-Dominant Logic (SDL) concentrates on service exchanges where customer is always value co-creator and value is determined by the beneficiary (Vargo et al., 2014)
- Agile development is a set of methods and practices were solutions evolve through collaboration between self-organizing, cross-functioning teams. ("12 Principles Behind the Agile Manifesto," 2015)
- Usability Metric for User Experience (UMUX) is a metric with 4 questions asking the users about usability from subjective perspective (Berkman and Karahoca, 2016)
- Jobs-to-be-done (JTBD) explains that all needs are satisfied with a certain purpose or target, a JTBD in person's life. This is described as JTBD and it used to hire either product or service to achieve the desired state. JTBD framework was introduced by Clayton Christensen. ("Jobs To Be Done,")
- Minimum Viable Product (MVP) is a version of product/service, which goes through the full cycle of Build-Measure-Learn with minimum effort and development time. (Ries, 2011).
- Customer or user have been used in this thesis interchangeably

This thesis focuses only to Customer Experience, Design Thinking, User Experience, Lean and Agile theories through vision, that helps to writer of the thesis to develop a service with a customer-centric approach combined with feasible offering and viable business solution. This thesis is concentrating only in development of a new service X all the way to the launch, all other potential clients that end user might to use to consume the service are excluded. Also measuring the service after the launch is excluded from this thesis.

2 Theoretical framework

2.1 Customer Experience

Fleming (2017) has a broad definition for Customer experience (CX) and is explained it as the totality of a customer's individual interactions with a brand over time. When figuring out what this means, this meaning should be considered in detail to understand the complexity and wide spectrum of the definition. "Customer" is understood as a current customer and also as potential customer, buyer or user. "Individual" means that each person has their own perception or impression of the experience. This means that it is more important how individuals perceive your provided experience rather than what you actually provide. "Interaction" takes place in reciprocal channels meaning e.g. a service application is responding fast to user's commands or customer service channels are embedded to service encounters to improve customer experience. "With" a brand takes into consideration only direct contacts to the brand. "Brand" represents all marketing, selling and servicing entities. It also includes dealers and retailers and many others like after-sales services. The brand covers all entities that the customer sees the company being responsible for, even though the company might have outsourced some of the services. "Over time" means long-lasting relationship with customer, each encounter is not an isolated experience, but it accumulates over time. "Totality" at the beginning of the definition means that it is impossible to improve CX without taking all these parts into account and summing them up together and figuring out how they impact each other when considering how to improve CX. On the other hand, Klaus (Klaus, 2015) claims the fact that researchers, managers and consultants have not agreed a definition of CX, all different stakeholders interpret CX in their own way which makes it harder to become an established practice. Companies have their own CX management programs, but scope of the program varies based on the company needs. Mostly CX management programs contain the company's brand values and provides emotional and functional benefits to customers thorough motivated personnel, consistent experiences across channels and touchpoints. What companies should really concentrate in the CX programs is creating positive emotions and memories for their customers while using company's services. The companies that have been able to create positive memorable experiences can see it clearly in the loyalty and bottom line.

From customer point of view, the customer experience builds from the interactions the customer has with the brand, what the customer is thinking about the interactions in different touch points with the brand, how the customer is feeling over the course of time in the interactions and how customer is perceiving the brand in different context, so the customer experience is very subjective and context-bound. From the customer point of view, all friction is

waste, all tasks that customer is doing on behalf the company, should be eliminated so that's good starting point for developing customer experience (Peppers, 2016). Customers should not have to go through extra trouble to achieve something, or nor communicate same issues faced many times to different stakeholders in different levels. To remove the friction, companies should invest in reliability, ensuring service meets the expectations set by the sales and marketing, meeting the customer's needs for the purpose it was sold to. Furthermore, the service should meet the value for money expectations, users are not happy when they feel they are paying too much for what they get in return. Managing the price-value relationship is tricky as users' expectations may vary for various reasons, depending if they are purchasing, what sort of e.g. status or quality they expect from their purchase, like if you buy a BMW vs. Fiat. The less friction the user has with your company's services, the higher the customer perceived the value of the services provided. Companies should create trust towards their customers, users. Users expect a company they are doing business with being trustworthy, proactively trustworthy, meaning company provides complete, accurate and objective information, helping customers to avoid making mistakes or oversights. Trustworthy companies remind customers when their warranty period is nearly up or advise customer if they are likely to purchase something by mistake. (Peppers, 2016).

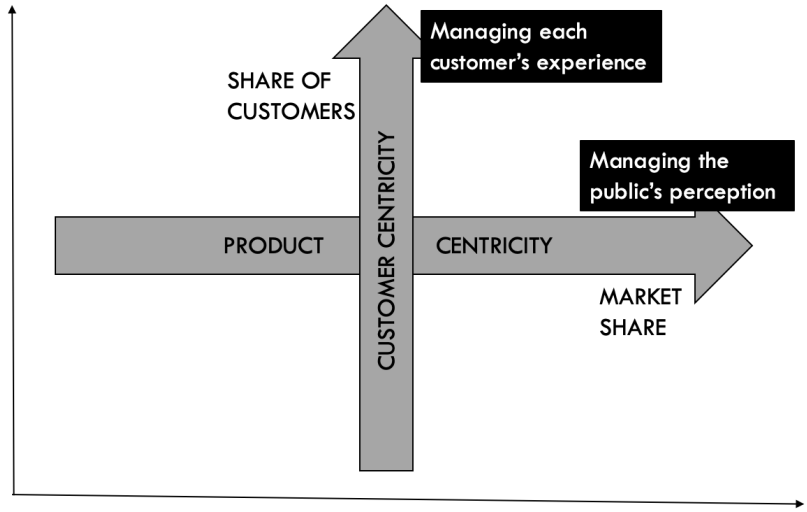


Figure 2: Customer centricity vs Product centricity (Peppers, 2016)

For a company to be able to successful, they must be able to satisfy a customer's needs and at the same time have a customer who wants to have the need satisfied. As visualised in the Figure 2: Customer centricity vs Product centricity (Peppers, 2016), Product centricity and customer centricity as strategies are not conflicting as they are not going to different direction. Both these strategies are very important to business, they can be pursued at the same time. It is important to acquire new customers by promoting the products and services that meet specific customer needs, but as soon as a business has a customer relationship, it is as

important to invest into the customer's needs in order to keep the customer long-term and satisfy even more of their needs. (Peppers, 2016).

Instead of considering the wallet share of a customer, reflection should be more focused on the share of customer's life that company is participating, what needs of customer is company actually meeting. When this is done holistically, a company most likely is able to increase the product and service offering to meet further needs of a customer. Customers remember interactions with a brand meaning it matters significantly how a customer experiences company's product or service today will have an impact on the future business both positively and negatively for long time. Focusing on a CX is qualitatively different kind of competition than focusing on products and services and they attract new customers. Focusing on a CX today has a direct link to profitability company is likely make tomorrow. (Peppers, 2016).

Companies often think the CX is the new battleground of their industry, yet many companies have very vague and broad statements of their CX practice. CX practice should be focused on individual customer answering customer's "jobs-to-be-done" perspective. Many companies concentrate on how they meet their sales targets, but truly customer-centric company focuses on answering strategic questions like "How our company integrate within lives of our customers? What capabilities the company have that the customer wants to use to his/her benefit? How can the company harness the capabilities to highest benefit of customer?" Secondly, the CX practice should extend outside of customer-company relationship into service ecosystem perspective, taking into account multiple parties involved in CX creation and its resulting value judgement. Parties like complimentary service providers, other customers, competitors, government etc. are involved in the ecosystem and therefore optimizing CX means balancing needs of interconnected parties. To extend a sphere a bit wide, the CX practice should have also dynamic long-term relationship measurement in different levels, ensuring company has an understanding how CX, value judgement and engagement evolve over time. Measurement of CX needs to be multi-method approach, more metrics than NPS should be used to understand the CX accurately and base the managerial decision making. CX metrics should be collected with combination of methods like survey research, focus groups along with new approaches like neuroscientific techniques to gain understanding of user's unconscious processes that take place at touchpoints. Managers should be equipped with CX insights in order to drive the offering in line of what their customers desire, ultimately driving company's performance. (Keyser et al., 2015).

All companies target is to get loyal and engaged customers, as according to research conducted by Roy, Shekhar, Lassar and Chen (2018) loyal and engaged customers are less price sensitive and resist switching to competition. They are also more willing to participate into development and co-create new services. On top of that, they are also more willing to

advocate the company to their peers. Yet, getting those loyal customers is a struggle for many companies as managing the customer engagement is hard through customer journey. In order to address and manage this complexity better, companies should have a process to create products or services that meet the customer's needs and while doing so, give customers satisfaction. To be able to create products or services, the company should have a process or framework to follow. One process is targeting to this with Figure 3: Product-Market fit pyramid (Source: Olsen, 2015). This pyramid starts from target customer definition, as it is vital to know to whom the company is designing and developing products or services. From the whole market base, company should decide which customer group is the most interesting for the company. The most interesting customer group should be the one that has the most underserved needs which the company can fulfil with their solution, in order to create good product-market fit. Target customer definition is very important as the whole development team should understand for whom the service being developed for, what kind of persons are going to be using the service. In order to bring customer live to development team, personas should be used to describe target customer. Personas are hypothetical archetypes of actual service users, not a precise description of one user. Personas tell the development team about the users' needs, goal, motivations, attitudes, frustrations or pain points of current service, level of expertise in the relevant field, product usage environment among other things. (Olsen, 2015)

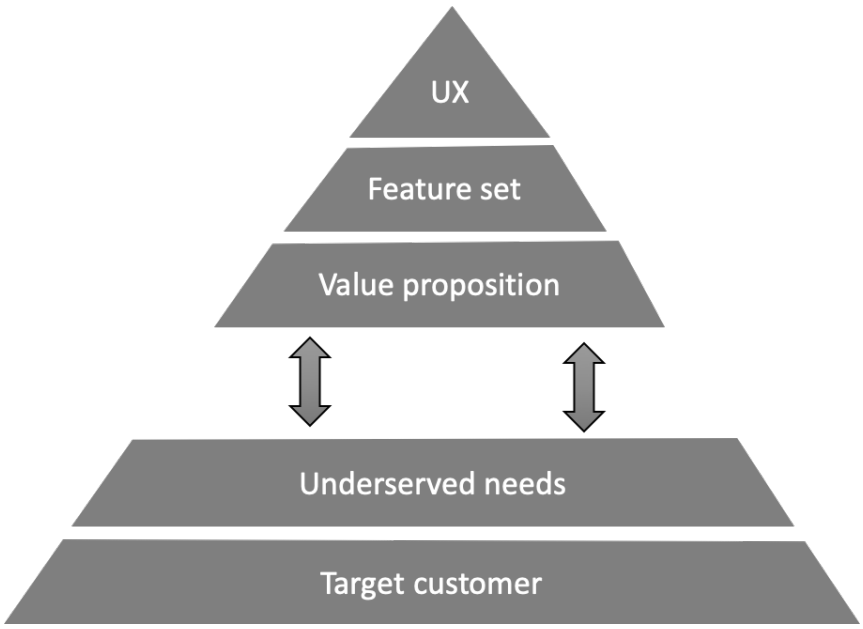


Figure 3: Product-Market fit pyramid (Source: Olsen, 2015)

To find out in detail about target customers' underserved needs, a good approach to analyse that is through customer value creation with help of design thinking.

2.2 Design Thinking & customer value creation

In short, Design Thinking (DT) approaches product/service creation through human, strategic and technological lenses, all of those elements should have an active role in the process of creating new products and services. It is important that all those have an active role as the product/service has to meet the criteria of desirability, feasibility and viability. (Brown, 2009). Design Thinking can be seen as exploring and creating potential solutions to customer problems. According to (Lockwood, 2010) Design Thinking is seen as a human-centered innovation process, that emphasizes collaboration, observation, fast learning, visualization of ideas, rapid concept prototyping and business analysis, which influences the innovation and business strategy. The Institute of Design at Stanford (d.school) is one of the forerunners of developing Design Thinking approach. They have created an easy to understand diagram to picture the process of Design Thinking (Figure 4).

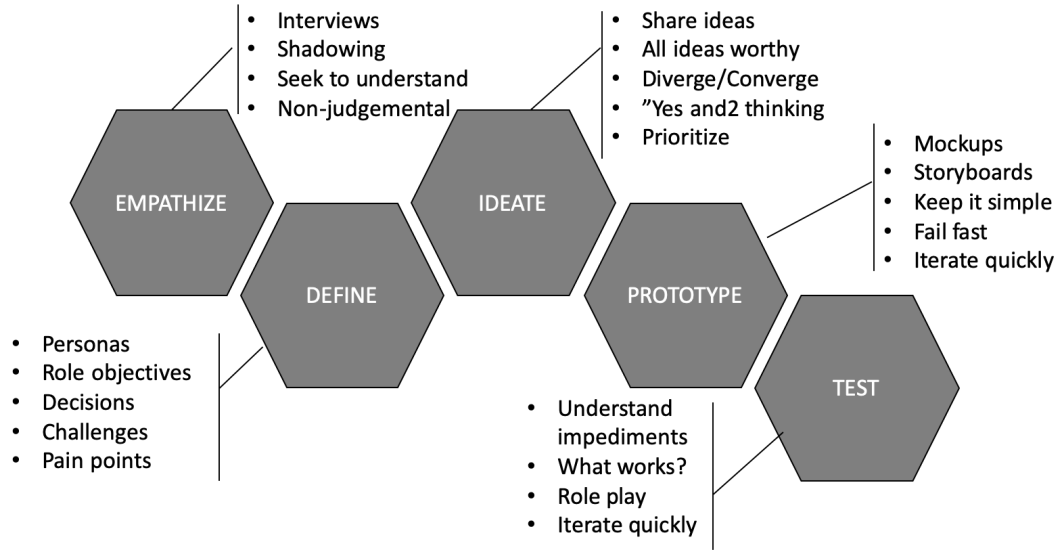


Figure 4: Stanford d.school Design Thinking Process (dschool.standford.edu)

Time has shifted from product-driven world to customer value-driven world. Previously goods were exchanged between company and customer (or in between companies) and value was used in measurement of exchange, which is called Goods-Dominant Logic (GDL). Design

thinking (DT) approaches the value formation from Service Dominant Logic (SDL), which terms has been introduced by Vargo and Lusch already in early 2000 (2014). Earlier, the focus has been heavily in company's service processes, which are involving the customer. Now the focus is shifting towards customer having an active role in value formation, which is involving the company (Voima et al., 2010). Customers are considered to be the value creators during their consumption process where company's role is to facilitate the interaction and support customer's ambitions. In this set up both customer and company are getting value, they are co-creating value, instead of customer deriving value from the company in exchange of goods or services. (Voima et al., 2010). "Value is always uniquely and phenomenologically determined" by the customer, value cannot be delivered by a company, it can only co-create and offer value proposition to the customer (Vargo et al., 2016). Provider Dominant Logic (PDL) is viewing interactions from the company perspective, value is exchanges in the interaction with a company. Therefore, as Vargo et al. (2016) argue, that "value is uniquely and phenomenologically determined by the beneficiary" meaning even if a company invests heavily into e.g. resources to engage better with customer, the customer might determine otherwise, and value is perceived by the customer.

When thinking how a company can stay competitive and relevant for the customers, GDL perspective is no longer responding to ever increasing targets of expanding business and customer demands. In Customer-Dominant Logic (CDL) the customer perceived value doesn't only limit to co-creation interactions with a company, or consumption of a service company is providing. Value creation takes place outside of the company sphere, it is accumulated chain of experiences in customer's ecosystem and reality. In CDL the starting point is not the company or its processes, not even the visible processes or relationship with the customer. In CDL the value is formed through different viewpoints, depending on the perspective. Heinonen & al. have identified the following aspects of value formation (2013):

- value created by either the company, by the customer and company together, or by the customer alone;
- value creation where the customer is an active or passive actor; or
- value creation as being an activity-based experience or mental experience.

Value formation takes place customer's subjective world, depending on customer's behavioural and mental processes, when customer is reflecting the experiences and reliving past cumulative events in her own reality where value is embedded, often outside of company's interaction or control (value in experience). The customer's real world, the experience is perceived in mixed realities in the past, present and future as part of the cumulated life and reality of the customer. Value is not a perception or experience company is providing to customer, it is more conscious or unconscious relation to something what has happen over a

period of time in customer's subjective world surrounded by her own ecosystem in a certain moment of time in a certain situation. The reality of customer's life is interconnected with other stakeholders such as family member, friends, colleagues and their influence from their own perspectives has also implications to user value formation. Customer's experiences are always influenced by customer's external or internal context. Customers might find it hard to answer why they value something, even though they know what they value. Value is highly dependent on attitudes, behaviour and limited memory space, life is changing constantly, and mental state is changing constantly, which all have an impact on how the customer thinks, feels or acts. In order for the companies to answer to customer value formation, understanding better customer's life and surroundings is extremely important. Companies cannot create value propositions and assume that customer will follow the way company orchestrates value creation. Focus is no longer on how service is consumed by customers, instead companies need to know how customers are living their lives. Customer's living context, values, health, way of life etc. have impact on customer's preferences resulting actions in decision making and buying behaviour in different occasions. Companies need to adjust to customer's processes, become proactive in understanding customer's life and then help the customer to solve their problems, fulfil their deeper emotional, sensory and hedonistic desires. If they fail to do so, customer most likely will find another service provider. (Heinonen et al., 2013).

In order for a company to become customer centric, they should find answers to challenges or change their approach described in detail in Table 1:

Provider-dominant challenges	**Customer-dominant challenges**	
How do the customers consume the service? How should the service be designed? How may the service process be developed? How do the customers want to co-create?	How do the customers live their lives? What routines do the customers have? What delights/irritates the customer in their everyday life? What do the customers enjoy and have an interest for?	HOW?
How/why do the customers make buying decisions? What influences the customers choices of service/distribution channel? Why are customers unsatisfied?	What are the internal and external living contexts of the customer? How mobile are the customers? What are the customers' life situations?	WHERE?
When do the customers want to be served? How do the customers want to be served?	What are the customers' timeframes? How hectic is the life of the customer?	WHEN?

What do the customers say? What motivates the customer? How can the new services be innovated?	What do the customers have a passion for and dream of? What are the challenges in the life of the customers?	WHAT?
How do the customers behave? What role do the customers have in the service process? Who influences the customers' decision-making process? How may the brand be developed? How may the customers be segmented?	Who are the customers? What roles do the customer have in their everyday life? How are the customers' social life structured? What do the customers believe in? What customer life profiles may be identified?	WHO?

Table 1: Customer-dominant challenges (Heinonen et al., 2013)

With the help of DT methodology and process, the customer value formation can be made more concrete by understanding and visualizing the customer-dominant challenges and opportunities in more precise manner. When designing a product or service hypothesis, development team should have high focus on the customer value formation and solve the underserved needs the target customer group has.

When linking the customer value formation towards concrete entities, User Experience becomes notion that should be explored in more detailed.

2.3 User Experience

A well-known definition of user experience (UX) is given in ISO 9241-210, where UX is defined as a person's perceptions and responses that result from the use or anticipated use of a product, system or service (Hinderks et al., 2019). UX has been defined by Pucillo and Cascini as a consequence of the presentation, functionality, system performance, interactive behaviour and assistive capabilities of an interactive system, both hardware and software. It also entails the user's previous experiences, attitudes, skills, habits and personality. The UX must consider user's personal goals, expectations and emotional dimension. In UX the trend is growing heavily towards finding out user's emotions, affects, motivations and values.(Pucillo and Cascini, 2014).

In service development the early identification of service opportunities and concepts that attract customers is essential, as customers are always willing to acquire attractive services that bring them superior experiences through interaction with service. (Yang et al., 2019).

When thinking what customers really want from any service, it is must be as simple as possible, as brains are surrounded by stimulus almost 24/7 nowadays. If a service is designed to be intuitive, receivable, simple and emotional, the service is likely to be brain conformed. Brain conform information means that information needs to be either simple or emotional, in other words, information needs to be either understood instantly or raise emotions in the recipient. The core idea of any product or service is to find solution to a problem or satisfy a need, thus product or service is targeted to change something for better, faster, more desirable, easier or more enjoyable. Furthermore, staying consistent with your service experience is crucial, as once users learn certain behaviour, it is hard to change it rapidly. If things change too much, users are dissatisfied and irritated. (Robier, 2016).

When considering a service by its functionalities or dimensions that make a different to the user, it can be divided into different layers. The layers visualized in Figure 5 below show that in many cases the service is designed and planned very carefully from the bottom up first triangle), meaning mostly the technical areas are well thought out but the areas which touch more user's feelings are not so well planned. In the initial MVP which will be introduced to users, all the levels should be covered to some extent (second triangle).

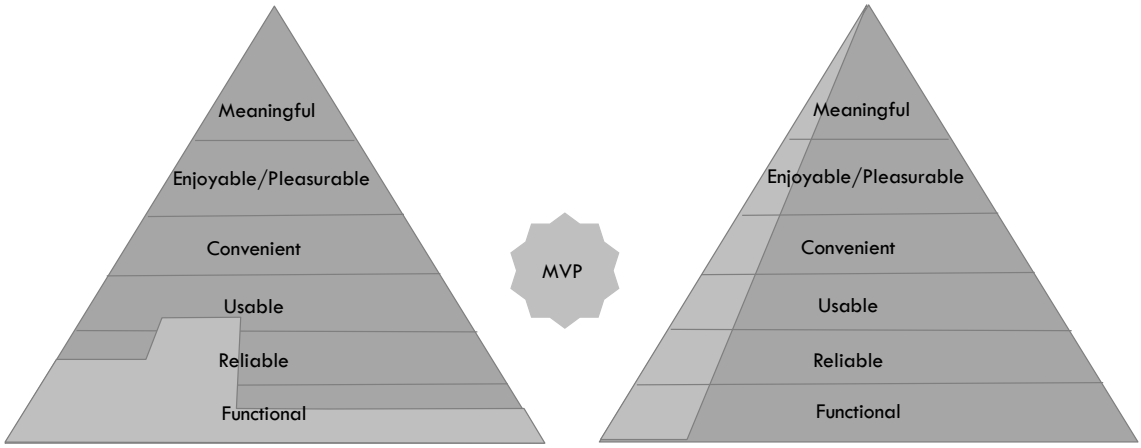


Figure 5: Service layers, modified from original e.g. (Pasanen, 2014), (Anderson, 2007)

In general, if the approach is bottom-up, the focus is more in the individual tasks, features of a service. If the approach starts from the top of the triangle, the approach is more customer-centric, focusing more on experiences. Going through briefly the dimensions and their meanings, functional is simple that a service works as planned for the user. When a service is reliable, it has no down-times, user can rely on it to be working accurately at any time. Usable service is super easy to use, it can be used without any difficulties. The usability hypothesis that has proven right many times is "The more user effort required to take an action, the lower the percentage of users who will take that action" (Olsen, 2015). Convenient service is

a bit trickier, as when a user gets the first two layers, s/he starts to figure out what is exactly what s/he wants just now, convenient service delivers that intuitively to the user. Enjoyable or pleasurable service gives the user memories that s/he is willing spread to peers. When a service is pleasurable, the user wants to come back time and again. Meaningful service has personal significance, user can relate to the experience and e.g. wants to tell stories that create change in a small scale or bigger scale. (Anderson, 2007)

Measuring UX is very important as development team needs to have guidance from the metrics. Companies are measuring their performance with metrics and key figures; managers are used to having metrics and key figures to monitor the performance against targets set. When measuring UX, one key figure doesn't cover all the aspects as UX is a multidimensional construct. For example, a good user experience should have qualities like easy to learn, efficient to use, aesthetics to consume, joyful to use and attract the users as well. The qualities can be divided into pragmatic quality aspects and hedonic quality aspects, or usability goals vs. user experience goals. The ISO standard doesn't provide any list of factors or methods for measuring the UX, but the field of UX professionals have developed several different usability metrics to be used for different purposes. What is common to all UX questionnaires is that they measure the subjective attitude of the user towards the test object. As an example, used in this thesis, Hindreks et al. have made research of making a UX questionnaire for digital services with analysis tools to provide UX KPIs covering different pragmatic and hedonic qualities. The questions measure the following topics:

- Attractiveness – looks attractive, enjoyable, friendly and pleasant
- Efficiency – user can perform the tasks fast, efficient and in pragmatic way
- Perspicuity – easy to understand, simple, clear and easy to learn
- Dependability – interactions are predictable, secure and meeting users' expectations
- Stimulation – usage is interesting, exciting and motivating
- Novelty – design is innovative, inventive and creative

In the questionnaire the respondent rate adjectives with 7-point Likert scale, example product/service is annoying – enjoyable, creative – dull, fast – slow, complicated – easy, motivating – demotivating. The questionnaire has altogether 26 claims to be filled in. This questionnaire is very good when comparing different products, giving statistical comparison for the UX. It is also good when testing if a product/service has sufficient user experience. With help of excel-tools provided, it is easy to make statistical diagrams to see how the UX is

performing in different areas being measured as can be seen in Figure 6: Example benchmark graph of hypothetical product (Source: UEQ-online.com). (Hinderks et al., 2019)

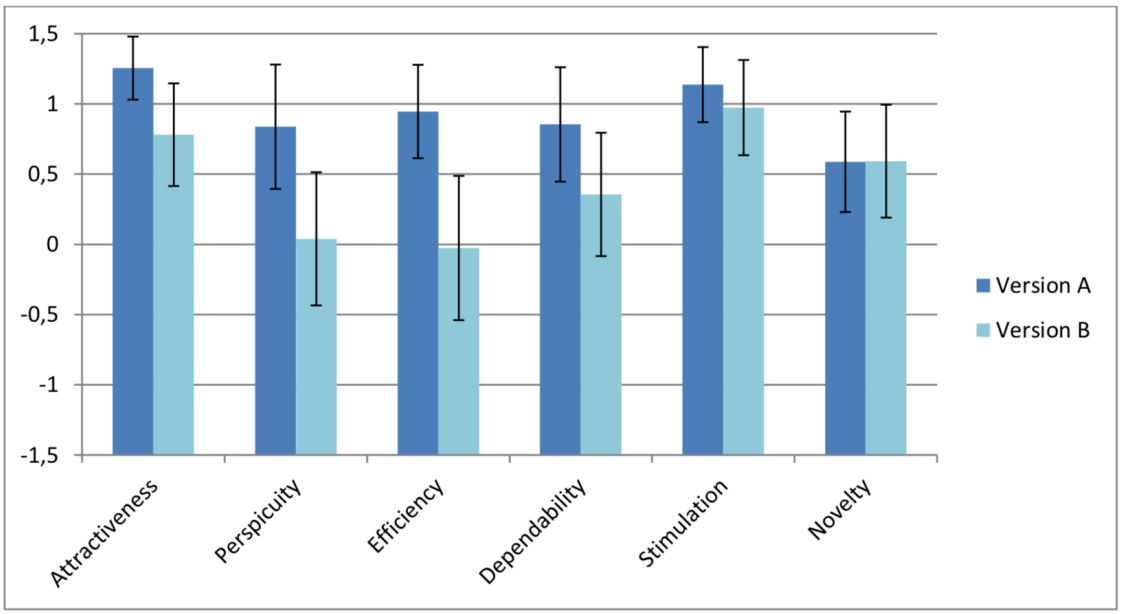


Figure 6: Example benchmark graph of hypothetical product (Source: UEQ-online.com)

Another approach is to use simple and fast measurement, called Usability Metric for User Experience. It has a light version which consist of four questions that measure the usability of a service. UMUX-LITE is using 7-point Likert scale and is very fast and easy to use in finding out about the usability, but is often criticized regarding its reliability, validity and sensibility. (Berkman et al., 2016).

2.4 The Lean Startup theory

The Lean Startup has was initially put together by Eric Ries, it is based on Lean production that was developed in Toyota Japan in order to improve delivery chains and production efficiency. In Lean thinking an individual employee is in a key role, each employee's capabilities and innovation is benefited to improve the company performance, remove waste and improve throughput times with improved quality of the products. In Lean thinking all processes are approached from customer perspective and if customer doesn't not get any value of a certain piece of process, then it is considered waste and should be removed. Eric Ries has taken the Japanese Lean approach and converted it towards entrepreneurship, where entrepreneur can be an employee in a company or start-up. (Ries, 2011).

In the Lean Startup approach starts from vision – all companies should have a vision and it should not change that often. Vision should be clear to all stakeholders developing the service. It is like the northern star that everyone is heading for. World is changing and circumstances of a company are changing, so should the company strategy, but still not very often. Strategy includes company business plans, product roadmaps, partners, competitors and customers. When a strategy is changed, e.g. due to changed circumstances, the route is pivoted towards the northern star vision. On the product level, optimization takes place all the time, the engine of producing products/services is refined constantly for better performance (Figure 7).

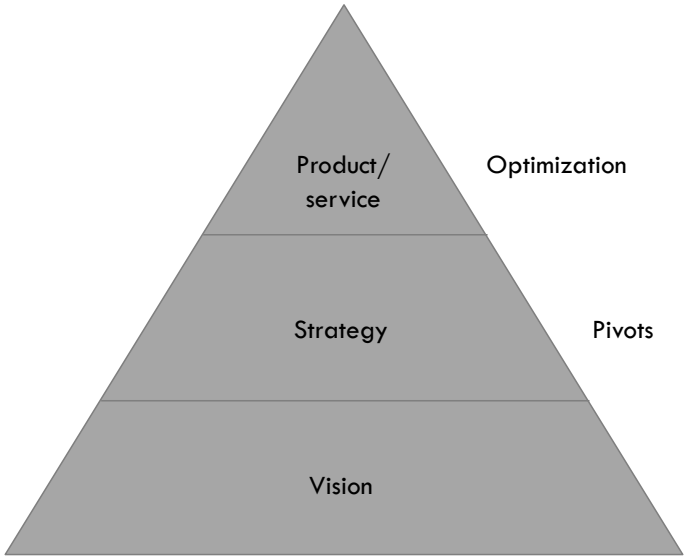


Figure 7: Lean Startup approach by Ries (2011) modified

To drill down to the Lean Startup in more detail, it contains these elements (Frederiksen and Brem, 2017):

1. User and customer involvement in product and business development
2. An iterative approach to new product development
3. Experimentation in new product development
4. The minimum viable product
5. Entrepreneurial thinking – planning versus doing

Usually companies are very good in doing incremental improvements to their products and services, which in is also called incremental innovation but to really find disruptive

innovations for exponential sustainable growth, incrementally approaching is not the remedy. Innovation, new ideas and new data are central elements in the Lean Startup, they form the basis for hypothesis. Hypothesis can be either value hypothesis, which examines whether product/service usage actually creates value to the user, or growth hypothesis, which examines how the new customers find the product/service. The target is to find the early adapters to growth hypothesis, since they are eager to use product/service at an early stage and are more forgiving to errors and usually willing to give feedback also. (Ries, 2011). The aim of Lean approach is to find out the most important value aspects to the customer as soon as possible and then keeping these aspects like guiding rules for the innovations in the process of innovation. (Ojasalo et al., 2018).

The Lean Startup's iterative approach offers benefits to do quick rounds of experimentation and building the minimum viable product (MVP). When this MVP is taken to users and customers with set target metrics, it can be reviewed and verified very fast. When measuring the MVP and validated learning takes place from the data sets produced, a company can recognize early on if a certain hypothesis is proven to fail, either growth or value hypothesis is not meeting the targets set and therefore a company needs to verify if the MVP in question needs to be pivoted or discarded as waste. Experiments are crucial, as they prove to the company if the company is on the right path to sustainable business. The whole cycle is visualized in Figure 8. The companies should keep the cycle as short as possible. After measuring and validated learning, a company should check whether the course of actions is going towards the vision and persevere with current track and continue iterations. If measuring and validated learning shows that targets are not met, company should pivot their plans towards the vision or discard the solution to avoid further costs. (Ries, 2011).

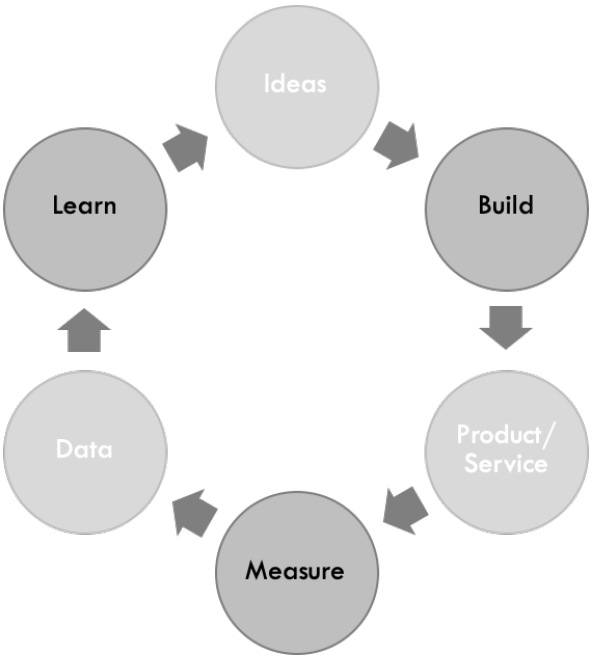


Figure 8: Build-Measure-Learn feedback loop (Ries, 2011)

In the MVP experiments it is important to find commitment from the users, ask for real commitment with their monetary input, because then the company can also test the core business hypothesis. Finding out who those first buyers are, what their use cases are and in what context they use the service gives the company further insights to develop the service. It also helps the company to build an iterative process of getting closer to the users. Prioritization of the MVP's should take place in the order that creates most impact customers and best return on investment to secure sustainable growth. (Ries, 2011).

"If you are not embarrassed by the first version of your product, you've launched it too late"

- Reid Hoffman, Co-founder and executive chairman of LinkedIn

Entrepreneurial thinking is something that is highly valued in the Lean Startup approach. As entrepreneurs or intrapreneurs, team members should have a clear and shared vision of the future path, cross-functional team to create something big together and also some willingness to take risks. It is important that the team spends a lot of time together in order to build a common understanding of a certain e.g. idea and is doing all the phases of the Build-Measure-Learn loop together, in order to build the common understanding further. This enables team to make less documentation and create faster new iterations after the validated learning takes place. Accountability is something an entrepreneurial thinking is calling for, if something is committed, then effort to effectuate is on top of the priority task list. In the Lean Startup the accountability comes through metrics that matter the most to the user or the business. Causal thinker would execute according the premade plan, but effectual thinker would look outside the received feedback trying to catch larger or bigger entities overarching a certain topic, hypothesis and measuring helping to optimize the path along the way as validated learning takes place, finding a solution that matches the product/service and user. With entrepreneurial thinking a continuous self-examination takes place to avoid assumption of user's reality and misconceptions based on assumptions. (Ries, 2011) (Frederiksen et al. ,2017).

When defining what should the MVP candidate consist of, it should all the must have features of the service which have been identified and prioritized in the research process together with customers. The MVP candidate should also have performance benefits that have been identified to beat the competition, those should be the ones that the customer could also recognize to some level. Delighter benefits would be crucial also in the onboarding face and

use phase in order to surprise the user positively. Delight benefits are the ones that wear out fast, those become basic requirements of the service very fast as the users get accustomed with delight benefits. (Olsen, 2015).

2.5 Agile Software Development & Scrum

Agile software development is a way of dealing with change in software development in uncertain and turbulent environment. Agile manifesto was agreed in 2001 with seventeen software professionals, agreeing in uncovering better ways of developing software by doing it and helping others to do it. They created common values as follows ("Manifesto for Agile Software Development"):

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

Agile software development is a mindset consisting of values which are led from the 12 principles. The values and principles for the ways of working for an agile team, development is led by the people and how they collaborate, solutions develop through working together autonomously in cross-functional teams which are utilizing practices needed for a topic they are working on. Autonomous teams capable of entrepreneurial thinking figure out themselves how to deliver solutions, management only ensures cross-functional teams have the right skillset available. ("What is Agile Software Development," 2015) Agile is concentrating is short iterations with clearly defined deliverables to minimize the risks. (Cervone, 2011).

Scrum is a framework that operates with iterative and incremental software development, enables things to get done at the planned time while maximizing value delivered. Scrum team has a Product Owner, Scrum Master and Scrum development team. Product owner's role is to bring items to the product backlog, a work list that a Scrum team is working together. Product Owner writes user stories, which tell what would like to be achieved from the user perspective. Scrum team evaluates the stories and give them points according to the complexity and estimated workload they include. Scrum teams work is divided into Sprints, which usually take 2 – 4 weeks. Sprint starts with Sprint planning, where Product owner is prioritizing work to the next sprint based on what brings be highest value to customers, whilst Scrum

development team accepts things that they think is feasible from the story point of view to be finished within the next Sprint. Scrum Master's role is orchestrating the Sprints, removing obstacles from the Scrum development team to achieve Sprint targets. Scrum team has daily meetings to increase transparency for the work done, explaining what was done since last daily meeting, what will be done until next daily meeting and what is stopping to get work done. At the end of the Sprint period, a review meeting is held to see how the Sprint targets were met, followed up with a Retrospective where the obstacles or success stories are shared amongst the team in order to improve for the next Sprints. Scrum team also has refinement meetings in order to understand what items are in the product backlog, the user stories that the Product owner has written. User stories are evaluated in terms of technical feasibility and how those could be delivered timewise. Often user stories are divided into epics or tasks to be more granular in order to be able progress work in smaller batches. When user stories are refined, they end up to Sprint backlog, from where items are taken to Sprints according to Product Owners prioritization and development team's understanding how much can be achieved within one Sprint. Development team makes constant software updates once they have tested and verified the code, so software is developing incrementally without big bang releases. (Olsen, 2015)

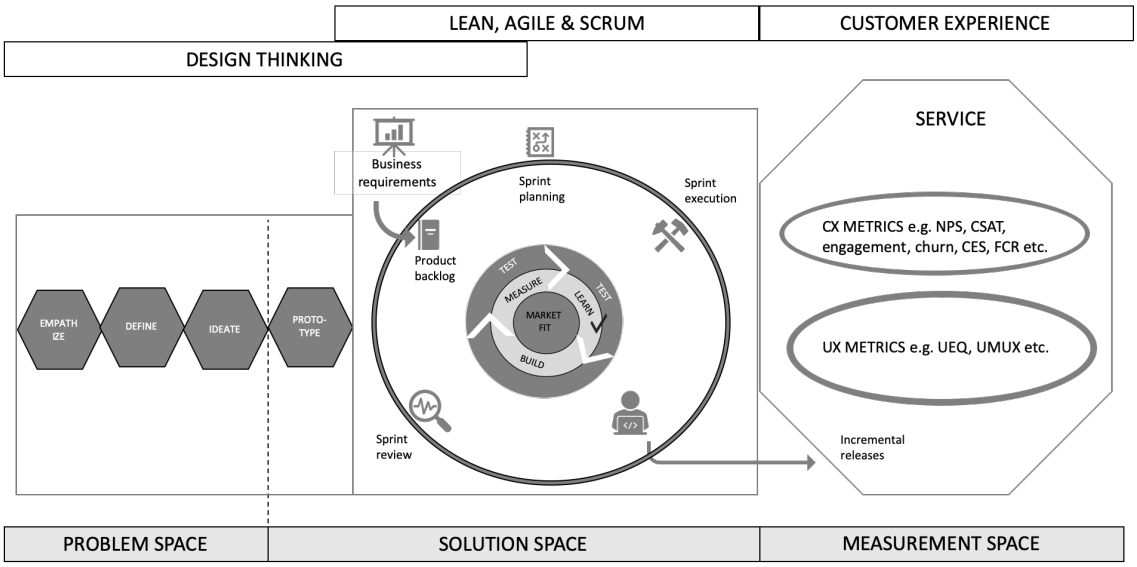
2.6 Converging theory to practice

When a company is working with Agile software development, converging theories from the CX, DT, Lean, Agile and Scrum can feel a quite a cumbersome. Traditionally the software development has been based on waterfall model, where first the requirements are delivered, then comes design, implementation, testing and then things go live. This might take a long time as one phase has to be completed until the next can start and the world might have changed dramatically meanwhile so in the worst case all the work goes to waste. In Agile way of working the time span and iterative approach will enable the team to respond to changes very rapidly, ensuring the development done always has also demand. The software development team should approach their work based on what value do they bring to users. The team should question whether the feature they are building really brings value to the users and once they have built a feature, also measure the feedback from the users in order to improve work done or scrap the work if users are not perceiving value in it. As Lean is approaching work in small batches, development team should concentrate to create the smallest possible representation of the idea in consideration, expose the idea to users to get feedback and validate early on either idea is worth investing further or should it be discarded. Many developers think they know how a feature should work, how users would like to use a service and what is actually good for the users, all of which is very bias as developers live in their own bubble too close to a service they are developing and don't necessarily understand challenges different users might have while interacting with a service. Therefore, development team should also

have understanding of Design Thinking approach and take this approach as part of the Agile software development. This could be done by engaging with users more regularly, taking user research on the agenda of every developer to gain deeper understanding of user's world, what challenges the users face, what is pleasing the user in a service and how could a service work better suit the user's needs. If developers would observe the users in regular manner, insight would be defined very fast on different opportunities found and new approaches could be ideated to be tested with the users. The user-centred perspective vital to software developers as the user value is key element in the service they are creating. To become an Agile software team with user-centricity, sprint assignments should have a metric measuring the user behaviour in some sense, is the customer behaviour changing due to development x, so measuring the change is a key element in the sprint. It is good to start with small steps, challenging the Agile team with one assignment with user-centricity including metrics defining the change in customer behaviour. As Agile teams are working with short cycles and not having long-term roadmaps, it means they able to iterate faster to create changes faster to the users. As learning from the users is crucial, it is important for the team to always judge what is the next most important thing they need to learn and figuring out what is the least amount of work they need to do to achieve what is the next most important thing they need to learn. Most companies make customer satisfaction surveys or other research about how customers perceive their services, but in many cases that data is only dealt with businesspeople and data analysts. In order for the developers to understand the customer better, it would essential to share the customer feedback also to the development teams in order to drive transparency and build better customer understanding. (Gothelf et al., 2016).

When combining the approaches together, the definition starts from a problem. Problems can be indicated by e.g. customers or metrics or the development team has found out amongst themselves from their monitoring systems that there is a problem in the service which is causing issues in customer experience. In order to get deeper understanding of the problem space, the Design Thinking approach is a good method for gaining deeper understanding of issues customers are dealing with. It is vital for the team to understand the problem and underlying issues customers are facing. By empathizing with customers, the problem area can be defined in more detailed and also innovate ideas how to solve the problem can be worked together with customers. In the problem space, identifying the right problem, potentially a latent problem, is critical as all the efforts to find solutions and co-create them further are waste if focus is in the wrong problem, so team should spend some time to ensure they have a common understanding of the problem they need to solve. With ideating together with customers for potential solutions are created or hypothesis for potential solutions, they are exposed to the customers to be validated. With Lean Startup approach the development team exposes the prototypes to validated and tested with minimum effort to gain understanding as fast as possible whether a certain idea is solving the problem, is it worth developing further,

pivoted to a new direction or discarded as the idea is not worth pursuing. In Lean Startup the MVPs develop incrementally and they are always exposed to testing and measuring with customers in order for the team to learn whether the development can continue or not. The same applies to Design Thinking methodology – ideas are tested with customers before they are taken further for development. The Scrum team has in the Sprint also "normal" development tasks to take forward within new Sprint timeframe but Lean Startup way of approaching things means that several iteration rounds can take place within one Sprint. Figure 9: Combining different approaches together is visualizing the approaches combined. The Scrum team is releasing new software to the service they are developing incrementally and continuously. At the same time, CX part of the evolving around different customer surveys, user experience surveys and feedback to find out in detail how customers are perceiving the service and what are the area that need improvement the most according to the customers. As CX metrics cover a wide range of company's functional environment, including brand, different channels that have customer touch points, the thermometer of the service experience is very important metric for the Product Owner and the Scrum team to follow. That can be done with some CX metrics, but also UX metrics provide good tools to be on the pulse of customer experience and collect weak signals that need to be worked on. Once service is live and can be used by customers, it becomes eternal circular loop, measurement space is feeding feedback towards problem space continuously from the researched performed in the measurement space. In the problem space the team starts to empathize with customers to gain deeper understanding of a problem in question and starts to solve in co-creatively in order to reach solution space and test the innovated hypothesis with customers, once a scalable product-market it is found, it goes to teams backlog to be prioritized and goes implementation in due course to be integrated into the service.



Combined by author from following sources : Standford d.school, Gartner, Ries, Board of Innovation, UEQ

Figure 9: Combining different approaches together

3 Development process of Service X

3.1 Chosen approach

This thesis views the new service development project as a case study. The development project is taking action research approach in finding out with help of Design Thinking methods how the customers perceive the service being developed. To find out what the service MVP should be and to establish a holistic view from the customer's viewpoint, a pragmatic and iterative Design Thinking methods were taken into use. The framework created by The Institute of Design chosen to find out best insights for this development project. The framework is visualised in Figure 10: Design Thinking framework by The Institute of Design. This framework was used iteratively when building on the service.

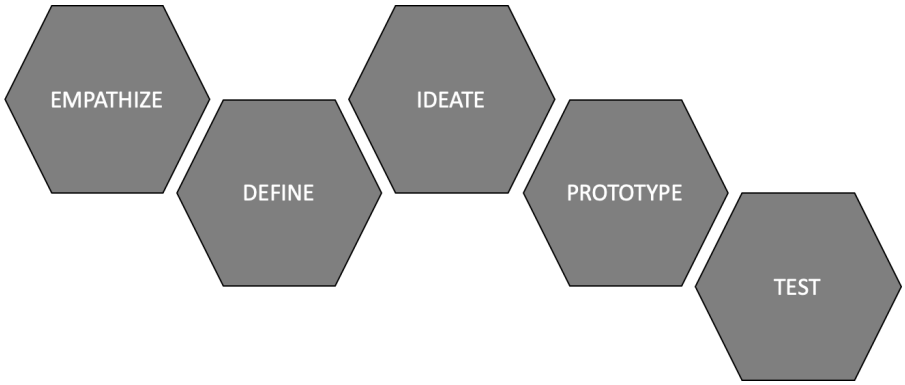


Figure 10: Design Thinking framework by The Institute of Design

This Design Thinking framework was chosen because it brings the customers into the centre of development. Design Thinking approach has good basis for collecting data from the customers and other stakeholders by different methods, revealing challenges in current service environments, showing potential gaps that prevent different customers to pursue their everyday usage of the service and ideate new opportunities to improve the service. Within the Design Thinking process there were many different methods used to find out different aspects of the service at different stages of the project and building up on the research results and analysis while the service was maturing. The writer of this thesis is working in Product Owner's role in this project, ensuring project is steered towards successful launch to customers with appealing and satisfying offer of service features and functionalities in the minimum viable product.

3.2 Building understanding

In the first phase of the research the target is to understand the current service environment. The company is making quantitative research on the users of the current service in frequent manner, targeting the questionnaires to different users in order not to exhaust the users by asking too many questions too often. To get started and build understanding of the current state, it was useful to gather and go through different analysis of existing questionnaires made for customers in different lifecycle stage, e.g. customers how had recently started to use the service, customers who had been using it for a longer period of time and also customer who had resigned from the service, to understand what was drawn and highlighted in these quantitative questionnaires. The qualitative data had been gathered for longer period of time, which gave a good first step to explore the service environment based on the existing research data.

To understand the customers' viewpoints and how they perceive the current service, a face to face interviews were seen a good approach. The interview guideline was designed to focus on the current usage of the service, understanding of current terminology of the service, how

customers perceived different top-level categories within the service, how they would group different subcategory items, etc. Face to face interviews were chosen since observation is a crucial element to build understanding of service usage. Contextual interviews is viewed as a powerful tool to gain deep insights from customers, gathering perceptions, behaviour and needs, and also get customers to reveal their values and opinions (Ojasalo et al., 2015). For the research team it is vital to understand the people and their motivation and behaviour in relation to the service they use, to empathize with the people in order to fully understand in what kind of context they are in with the service and also gain deeper insights in order to build more user-centric service in the future. (Stickdorn et al., 2018). The target customers for the service are households in Finland, anyone above 18 years old having his or her own household. In practice the majority of customers' ages are ranging from 35 up to 85 so the service is very much mainstream, just like banking service or alike, covering big proportion of people living in Finland. Defining the target customer is very important, as the development team needs to have a vision to whom they are developing the service and how they could fulfil the target customer's underserved needs (Olsen, 2015).

The interview guide was structured to start with little warm up to get the interviewees to the same page about what is going to happen, warm up questions about their current service usage habits and consumptions styles. At the beginning of the interview the interviewees were asked if the session could be recorded, interviewees were told that the recording would be stored until data is analysed and recording will remain in service provider's internal data storage systems. Interviewers were highlighting that all what is being said, is highly confidential, first names would be used only so tracing to a certain person would be impossible. The interviewers were emphasising that there are no right/wrong answers, only interviewees own preferences would matter. As Eskola and Suoranta (2000) define, two important factors exists with interview data – confidentiality and anonymity – which both are covered in research as only first names were recorded but no other personal contact data is maintained.

The team had a plan to interview ten customers, both existing and new potential service users. The targeted customers were recruited from the target customer group. Ten interviewees were selected by random from the customer base that had given a consent to approach them. In the interview the first actual exercise the interviewees were asked to group different sort top-level category items cards into different groups according to their own preference. The interviewees were given a set of content cards with picture and name describing the content. The interviewees were asked to think out aloud, as then researchers could follow the interviewees train of thought. Once interviewees had placed the content cards into categories or groups preferred, they were asked to place the categories into user interface on a paper layout as how they would like to have them placed in a screen. This exercise was done in order to get an understanding how they would like to group different kinds of content and in which order would they prefer to put the categories in a screen. Card sorting

technique is very powerful way to learn how customers think and understand different parts of the service and how they are related to each other in the user interface. This information should be used in UX design as service should be organized in a way that users find intuitive with labels that users can understand, enabling good findability and usability. (Olsen, 2015).

Second exercise was to ask the interviewees to draw the current user interface, where the target was to find out in detail what is important for the user in the interface. The target was not for the interviewees to have a memory test of the current UI, rather showing in practice how they remember the key areas, features and functions which they commonly use either with current service provider's UI or competitor UI. Questions were also asked, how the interviewees find content they'd would like to find, do they have any obstacles or pain points and how they overcome them, how they are used to navigating throughout the user interfaces.

Next exercise was to find out first ideas of preferred names for top level navigation, ideating together with users from basis of the current options for names or a new preferred one. The interviewees put their preferred top-level category into a paper with explaining reasoning why that would be a good top-level item in the main user interface. They were also asked to put the top-level items into order they display them in the key interest and how would they tailor it to fit every usage the best possible way.

Last exercise was to find out what is their understanding of premium experience in this service context. What are the key items effecting the experience, what makes it supreme? If interviewees were not users of current service, they were asked to benchmark the experience if they would have other services in use. Also, feedback to current service was asked, as customer experience and customer feedback forms crucial part of the development of the current service experience.

With these nine insightful face-to-face sessions, the quality of the research was determined to be enough for this first round, as there could be seen similarities and commonalities starting to form. The structure of the interview was a little bit different if the interviewee was a current service user, as then more detailed questions could be addressed to the current service. For those interviewees that used other service provider's services, more generic approach was used to find out interviewees' preferences and understanding of the service and terminology used. This was done in order to get results that could still be used to build on the existing framework of service and potential findings to further leverage insights into next phase.

After all the interviews were conducted, all exercise materials were put together, compiled first to post-it notes to be able to move them around for coding and categorization. When main codes / categorizations were found and determined, they were transferred to an excel

sheet, where all interview highlights were written down for further analysis Table 2: Interview data and theming.

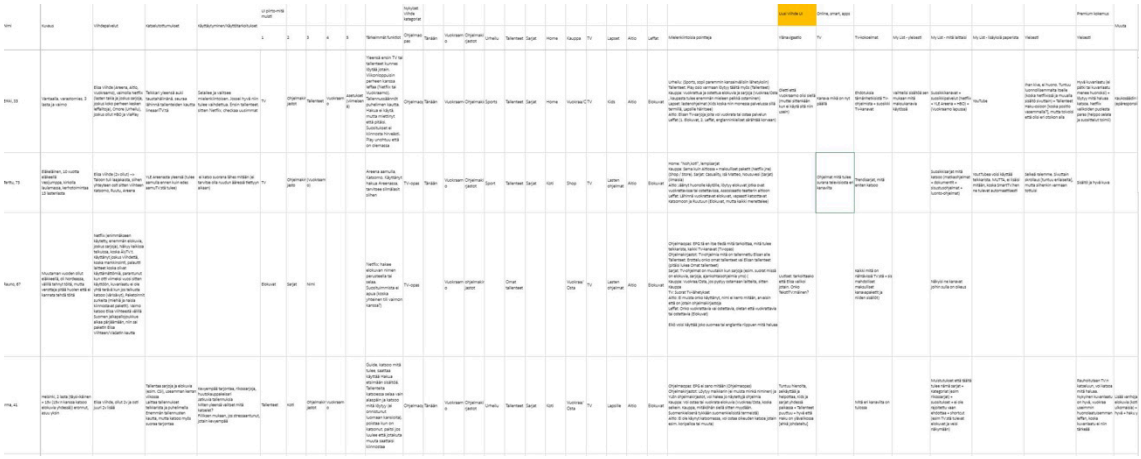


Table 2: Interview data and theming

From the categorization the main categories put in order, combining similar ones and rated according to the popularity they gained. In order to find out how the main findings would make it in a bigger group of users, the main categories where identified and used to the next phase of the testing.

3.3 Building understanding - analysis

In the first round of in-depth interviews, nine persons were interviewed, five females, four males. Six out of nine were had been using the current service, three persons were not familiar with the service but had been using similar services. Ages were ranging from 33 – 74. Interviewees had used a wide range of devices to consumer similar services, meaning TVs, mobiles, pads, video projectors and computers. It was clear from this sample that what and from where user used the service varies a lot by a person. Most interviewees used multiple services to get access a certain specific content. More than half of users have transferred their usage toward demand based, meaning interviewees don't use live services that much any longer, they either use recording and consume the service at their convenience or use different sort services available for this purpose, like independent service provider's services, like Netflix. All of the interviewees used the service on a daily basis, emphasis on the consumption is geared toward weekends when most time to relax and consume relaxing service content.

When reviewing the exercises performed by the interviewees, the first exercise was the card sorting exercise . In that exercise results showed that the users grouped the cards either

based on the service content type, which had subcategories divided into two, domesticity and genre. Other main categorization basis for the users was their own interest – do interviewees feel like they would like to use the service for certain type of content or found it interesting in certain context, e.g. grandchildren visiting, and some parts of the service could be used together.

Figure 11: Picture of card sorting exercise

Once the cards were asked to put on the user interface, domesticity rose to the main level and became a descriptive factor for a top-level category. Interest based content is important but only in the landing page of the service in order for the user to see right away content of interest (Figure 11: Picture of card sorting exercise). It was peculiar that in all answers the kids' content and sports content would be put as independent top-level items, no matter if interviewee had kids or not or liked sports or not.

The second exercise performed by the interviewees was user interface drawing exercise. In that exercise, the aim was to find out what was the most important and used functionality of the current service and cross check how those functions would work on the new service user

interface in the next studies.

Figure 12: Top level categorization exercise

When interviewees were placing top level items into a grid, their order and emphasis was on the general level display up the most valuable items first. In general, they wanted to have a clear and easy to understand user interface. The users would prefer to see what is live on TV currently and also what is coming up next. Recordings is one of the most used features in the service and that would need to have an item on the top-level categories Figure 12: Top level categorization exercise. According to the research, users would also like an interface that they can customize themselves, to fit their own needs instead of having a generic user interface for all users. Content reminders and recommendations was also raised as a wish that was seen valuable to users.

To find out what is important in the viewing and what would make the viewing experience a premium one, common themes were easy access and finding desired content easily. Other topics raised were good quality service, all basic functionality would work without interruptions. To be able to feel that the main landing page is close to the user's viewing habits, it should collect personalized content that user could continue watching or has been recorded lately.

3.4 Qualitative category validation in online

The team thought it would be good to validate the findings from the face to face interviews in order to get confirmation from bigger group of users. For this purpose, they set up a test comparing the terminology in between the current user interface terminology and new categories derived from the interviews. This test to validate the results was performed as an exercise in online, posing 14 different tasks to users, asking users to select the most appropriate category where they would place a piece of content in their opinion. The potential content categories were shown to the participants to choose from. The participants performed the

test only once, randomly selected by using categories from the current UI or new proposed categories. Tasks were like “You’d like to watch “XYZ” -program, where would search for or under which category would you find it?”. The participants were chosen randomly from the target customer base, half of invites going to answer the current set up, half of invites to the new proposed categorization. Altogether 750 invites were sent, from which current service got 73 answers and new proposed categorization got 69 answers.

For environmental scanning, the competitor services as well as other services in the same field/industry were viewed or used, in order to assess similarities and key differentiators across different services.

Having first qualitative in-depth interviews helped the team to first of all gain understanding of the current perceptions and motivations of service usage, giving more in-depth insights after which Confirmatory research was performed in form of quantitative questionnaire to see if preliminary hypothesis created after analysing in-depth in interviews can be validated and used in next phase of service development. (Stickdorn et al., 2018).

3.5 Online validation for categories - analysis

To validate the earlier qualitative research findings in different categories and verify terminology innovated by the interviewees, the researchers team wanted to get verification from bigger group of users. This quantitative part of testing was done as an online tree test. This test in online was sent to 500 customers and researchers got back roughly 70 answers each to current service category structure and new potential service category structure. Genre split was almost even in both groups, 50 % men and 50 % ladies. Age split was more distributed as can been seen in the Figure 13: Online tree test results - review of the respondents.

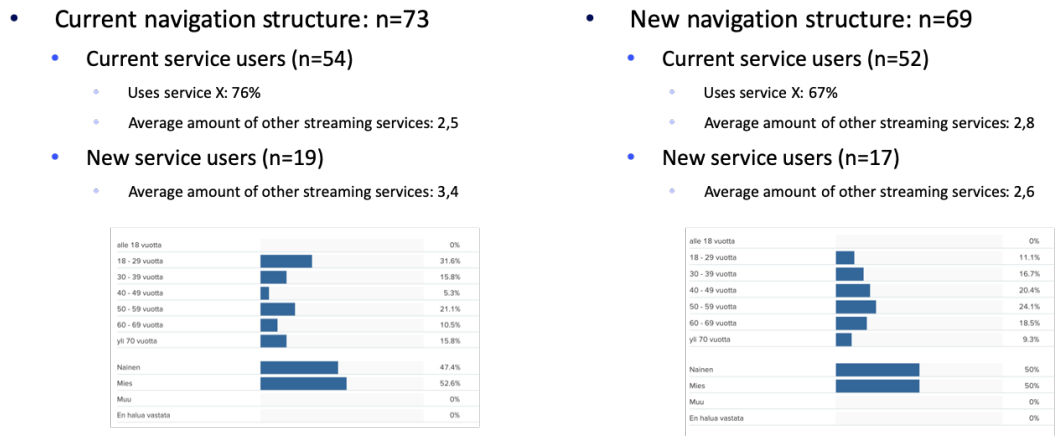


Figure 13: Online tree test results - review of the respondents

More in-depth results of the tests were gone through with all relevant stakeholders, but not shared in the thesis due to company regulations.

3.6 Functional and UX testing

In order for the team to address the needs and desires found out in the interviews, the value proposition of the service needs to be defined. In order to follow the product-market fit process, the value proposition should address the selected needs that customers have but only selected ones, as the development should target first only the ones that bring most value and satisfaction to customers whilst checking that the service they create is still differentiated from the competition for the better. (Olsen, 2015). It is important to note that company cannot deliver customer value, it can only offer value propositions (Ojasalo and Ojasalo, 2018).

The project progressed to a phase were main functionality and UX could the tested for the first time. For this, the team had a research objective of receiving overall feedback of the service at current state, including also the findings integrated into the service from the first round. Keeping the service proposition in mind, the team created hypothesis based on the first interviews and validation what the categorization should be including also sub sub-level categories in the service. The hypothesis were the options for first baseline of the new service scenario to be tested with customers. The testing plan was to show different mock-ups of the user interfaces on a paper in order for the testers to innovate around the mock-ups and come up with new approaches. As Stickdorn et al. summarize the evaluative prototyping, customers are exposed to mimic aspect of reality as closely as possible, and to get emotional experiences included to the evaluation, customers need to experience the service (Stickdorn et al., 2018). Additionally, the tasks also included actual usage of the service with a selected prototype user interfaces in testing environment and also current service user interface in the service to actually see how the users performed with a set of tasks given. This research target also included observation how users find content in different user interfaces and does the availability of the content have an effect into the usage. The plan was to give users certain tasks to perform in order to see actual usage of the service with both versions so performance could be compared in detail.

This research was planned to be conducted face to face in-depth interviews with 10 selected participants, 5 were users of the current service and 5 totally new to the service in question. The interview guidelines were designed and structured to address the main usability topics of the service together with findability and navigation perceptions from the prototypes. Same principles apply this testing as the previous one, their integrity and anonymity were secured, and they were asked to talk out aloud how they felt about ease of use of the service and satisfaction of the service.

In the first exercise the users where shown the mock-up versions of the different user interfaces created based on the previous research. The interviewees were asked to speak out aloud what words come to their minds when they see different versions of the user interface, what is appealing to them, what is not so appealing in each mock-up version and why. They were also asked how they would like to have the functionality; how would they see it working for them the best in ideal world.

The second task finding out from a prototype version of the service, how the users felt using the service, what was hard, what was intuitive and appealing, understandable etc. This was done through a series of tasks that the users were actually using the prototype service and tried to perform the tasks given. The tasks were like "you want to watch a Finnish crime movie, where would you find one?", "you want to record an episode of your favourite TV show "ZYX" – how would do it?" or "you want to watch a series "ABC" which is in service NN – how would you find it?" Total of 12 different tasks were performed and observed. Right after the usage of the prototype, the interviewees were also asked to fill in a User Experience Questionnaire designed by Hinderks et al. (2019), to find out usability and user experience metrics covering pragmatic and hedonic aspects of the UX. The users were next using the current service to be able to benchmark the services with each other and to also be able to measure the performance in User Experience Questionnaire. Additionally, the interviewees were asked about the most important features that the new service should have from the very beginning. This question was to ensure the development team had a clear understanding what the most critical features of the service are when building the service towards MVP.

3.7 Analysis on the functional & UX testing

In the end, 11 users were interviewed, both males and females age ranging from 21 to 67 years. Seven of the users were current service users, four were new to current service. Once finalized, the analysis of the test results gave a clear result for the categories of the top navigation were clear to the users and should be included to the service. The category names gave users a clear understanding what could be found under a category and encouraged to browse and look for content of interest. When results were compared to current service, the users found it harder to understand what could be found under which top level category name. With the new category names, users are more likely to explore different content and potentially also consume more content. When examining the sub-level categories, most users wanted to have genre-based offering available in the service. More in-depth analysis of the research is shared amongst the stakeholders in the project, but not presented in the thesis due to company regulations.

When analysing User Experience Questionnaire, the new service performed better in all attributes measured, all 26 adjectives were measured with 7-point Likert-scale and mean value can be seen in the Figure 14: UEQ comparison current vs new service.

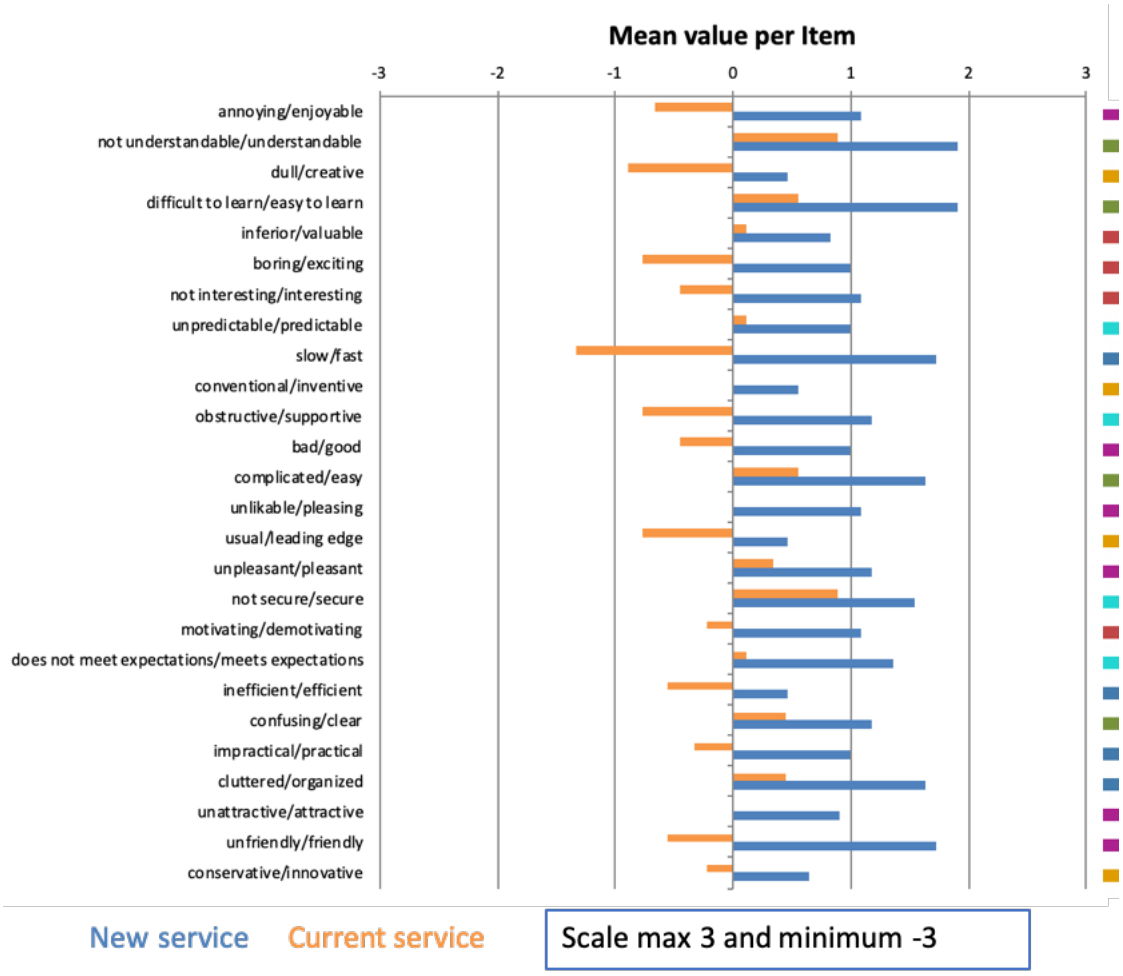


Figure 14: UEQ comparison current vs new service

All the findings were put together and transferred to the new service development, all changes that were relatively easy to apply, were developed and implemented into the service prototype. It is important to make the results to prototypes as it ground the work to reality, no on the assumptions the development team might have (Stickdorn et al., 2018). If some finding required more work, it was refined in the sprint planning and split into tasks, which could then be prioritized in the product backlog.

3.8 Towards the MVP with Beta testing

With two rounds of customer feedback, the team had a good perspective what the MVP should consist of for the launch but in order to gain deeper and boarder understanding from longer term use of the service, revealing aspect or things that could not be explored in in-depth interviews where users were using the service only momentarily, two different testing groups were established. One group of users consisted of company internal users who wanted to sign up for testing and reporting back to the development team of their findings. Second group of users were recruited through online community, having external users, real customers using

the service and reporting back to the development team. Both teams' recruitment was very easy and fast, many people were willing to participate into testing, altogether 70 users were recruited, both internals and online users. The testers were sent devices to be tested and once they received the devices, they had to go through the set-up process in order to get the service working and then start using the service as multifaceted as possible.

The Beta testing research target was to find out insights of usage and gain understanding of how the new service is perceived amongst the new users at their own context, while the users have a longer period of time to get acquainted with the service, highlight areas that are seen as valuable and also report back areas of improvement needed. The research of the user testing was split in three parts, first part quantitative survey concentrating on the service onboarding and usage, second part covering more usability aspects including how the users found interesting content in the service. In the third phase the survey focused more on the performance and delight areas of the service as well as shortcomings of the service including gaining overall feedback of different features and functionalities of the service with free text comments. All three phases included also UMUX-questionnaire to get a simple and straight forward understanding how the service is performing amongst the users as usage continues for over a couple of months.

Within a week after receipt of the devices, first questionnaire was sent to the users, finding out details of the onboarding process and instructions and initial feedback of service usage. The same questionnaires were sent to both groups in order to compare the performance of each group. Both groups also had a private discussion forum to ask questions or give feedback on things that would be occurring to the users, internal participants were using company's internal tools and online community users had a closed forum in online for discussions. Discussions started very vividly right away, almost all participants were contributing with questions or observations on service behaviour, ideating and suggesting new things to be included to the service and things to be fixed in the service. The Product Owner and Scrum Master were moderating the discussion in both forums and giving advice and instructions where needed.

The second questionnaire was sent out after approx. 6 weeks of service usage. The answering rate was clearly lower than in the first questionnaire, partly due to the fact that questionnaire was sent in the middle of summer holiday period. The second questionnaire consisted of open-ended questions which gave the participants wider range of answering possibilities, not just selecting a value from a pre-set scale.

The third questionnaire was sent to internal users only, as it was decided to ramp down the internal testing group. The external group was still continuing to use the service. The third questionnaire was more like a closing questionnaire, covering more detailed questions about

specific functionalities, performance and delight areas but has now limited number of participants, only approx. 35 people.

3.9 Analysis of Beta testing

When analysing feedback from the Beta surveys, couple of common themes occurred in the user behaviour. First of all, common theme raised by tester was the performance of the service, customers could be recognized in efficiency, the new service was fast in responding, practically arranged and organized, also perspicuity arguments were raised as a common theme. Another common theme was the users would like to tailor their own views according to their preferences or taste. They would like to hide irrelevant content categories from the screen, bring up certain categories or sub-level categories which they are keen to see. Sometimes customer thought the screens were seen cluttered and it was hard to find specific content, which was a clear indicator that areas of UX need improvement. Third common theme, indicated by couple of users was that if a user has used the current service, the same person is likely to try to use the new service with same logic. This means that those users would not use the new approach to categorization of content and might have click through several steps to be able to perform the logic that they are used to. This sort of behavioural change happens slowly and includes also some annoyance that things don't work the same way in the new service. This same pattern was not seen so much with new users, they were able to perform their tasks without previously learned patterns.

As the development team was working simultaneously with development tasks, it was easy to work on the ideas that came from the beta testing group and create a hypothesis in order to validate it again with the beta users. The beta group's active approach in highlighting areas of improvement and questioning some functionality gave the development team great opportunity to work really in agile way delivery incremental improvements in the service.

3.10 Are we ready to launch?

The development team has travelled a long way from the project kick off, after several iteration rounds the service is starting to fulfil the baseline needs for the MVP, service's basic features are there, performance differentiators are part of the service and even some delight factors are coded in to the service. With all the testing the team's fidelity toward the launch is growing. Now all the layers of the product-market fit pyramid should be present in the service, as displayed in Figure 15: Product-market fit pyramid (Olsen, 2015).

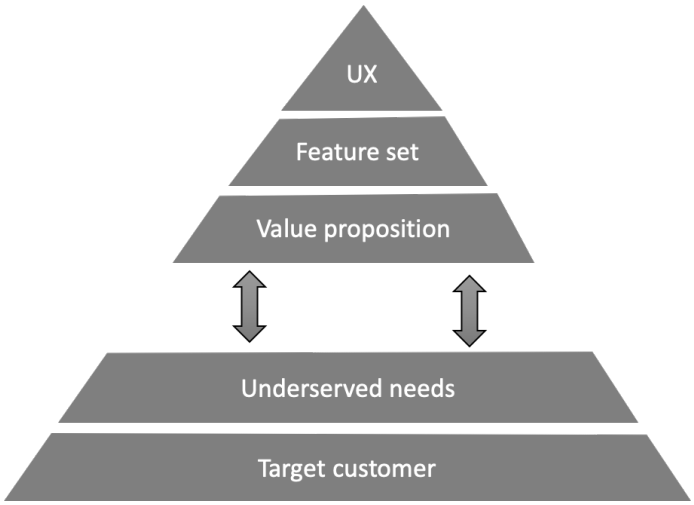


Figure 15: Product-market fit pyramid (Olsen, 2015)

At this stage it was decided that now the service is ready to go to be launched, yet the launch as done as a silent launch, no big marketing campaigns were done at this stage. The stores of the company started to promote the service to customers, after sales training had taken place to ensure the sales staff has the understanding of the product-market fit value proposition and differentiators in the key features.

4 Findings

4.1 Building understanding

The team started to build findings of the first in-depth interviews right way to feed the results and ideas as soon as possible to Scrum Sprints in order for them to create either a prototype of a specific finding or build a finding into the service right way in order to test and validate the new additions in next verification rounds.

Choosing what is being consumed is highly context dependent, if service content is watched together with partner, family or alone, the choice made is completely different in many cases. Also, mental state has an effect, being stressed-out, more likely something light is being chosen. This same aspect was found in research done for service providers alike (Ali, 2018). When talking about the service provider's service, the most appreciated element is that users can use the service when and where they want at the time they would like to. Also, the possibility to use recording was very appealing to many users. Users frequently use different on-demand libraries and appreciate that the service provider's service works as a platform for all different services and content.

4.2 Summary from online tree tests

From the online tree tests, the main findings supported the hypothesis that new structure would work better than the current service structure. New categorization structure worked better for users who had not previously used the current service but also with current service users the new categorization ranked better as well, so this sample confirmed that terminology used in categorization is one key element of understandable user experience, visualization can be found in Figure 16: Online tree test comparison findings.

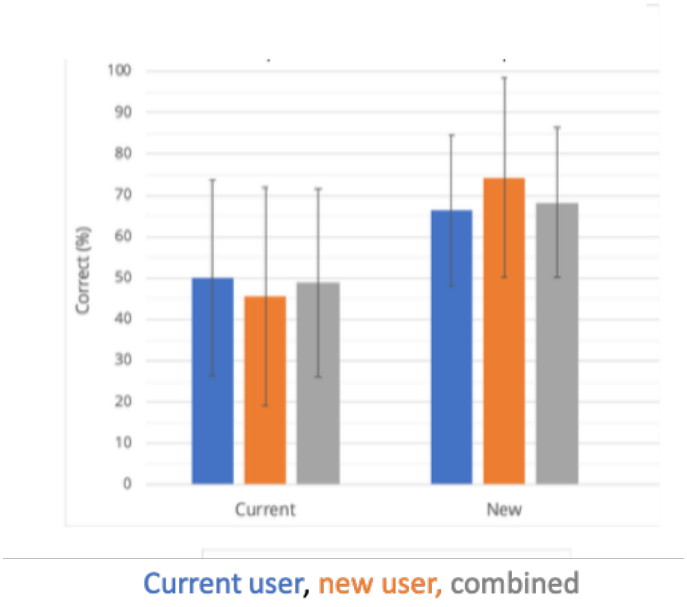


Figure 16: Online tree test comparison findings

4.3 Summary of the functionality and UX findings

Functionality and UX testing round concentrated heavily on the tasks performed by the users. The one of the main finding is that the more precise the service categories and sub-level categories match to user's perceptions, the easier it is to navigate around the service and find interesting content to consume. The users like to be exposed to different sub-level categories but having an option to tailor their own preferences to the user interfaces would be appealing to many users. When the users could not find or navigate around the service, they felt frustrated very fast. A common theme amongst the users was that they would like to see right away when new content is being published, if it happens to be in their interests, meaning if a new season of a favourite series has been released, they'd like to know it in order to start enjoying it, not to miss out on something that is important to them. Tailoring the user interfaces according to the user's subscriptions was also seen as beneficial, offering first the

service content which can be consumed without extra fees. When the interviewees were asked to compare the new and current services, visuals were mentioned to be positive in the new service, having more modern and refreshed looks. New service was also mentioned to be easier to use. Regarding the current service, some of the key features were performing better as it is a service widely used by customers all the time and the current service was running smoothly whilst new service is still a prototype. Some features were still missing from the prototype as well, users noticed them very fast and that gave clear indication that those need to be amongst the MVP features.

4.4 UEQ findings

When analysing the UEQ results, the research clearly shows that the new service is performing better with pragmatic and hedonic attributes measured in the questionnaire. The scale indicates the range of score – 3 means horribly bad and +3 means extremely good. In the results of the new service best scoring goes to Perspicuity with 1,659. Perspicuity also has low variance in responses, indicating all interviewees rated the Perspicuity attributes very close to each other. Perspicuity consists of attributes like easiness to understanding, easiness to learning, complicated/easy to use or confusing/clear to use. Novelty is gaining lowest scores in the new service, having also the biggest variance in the responses, meaning some of the interviewees found it new service being creative, inventive or innovative but other thought it was more conventional, usual and potentially conservative. The current service rated lower in all attributes having also bigger variance in the answers. All elements can be found in the Figure 17: Analysis of UEQ – current service vs new service.

Figure 17: Analysis of UEQ – current service vs new service

4.5 Beta-testing findings

Overall, the longer testing period proved to be very valuable, vivid discussion continued in the forums through the summer and good insights regarding usability and functionality was received. Moreover, the discussions forum was used as an innovation board when some features had different options for potential solutions, they were raised to the forums and development team could really fast gain the customer perspective and preference to the topic in question.

Analysing the survey results from the beta users, overall result look pretty promising. Beta users told that some of the main features/use cases for the users were easy to use, also new delighting features were brought to the service enabling users to have more value for the service. Many quality aspects were mentioned also in the delight context. UX also got mentions in the delight category as well as messaging of the service. Using the service a bit longer time highlighted areas that did not perform so well in testing, e.g. moving from one menu structure to another was found a bit hard and items displayed in one screen was limited due to rather big pictures displayed. Improvement ideas were also raised, many users would like to tailor the service according to their own taste and preferences, by hiding or removing areas which are not part of the interest or daily interactions. This would apply to top level menu items but also tailoring the views according to user preferences would be appreciated also on the sub-menu level, hiding irrelevant content according to user preferences or highlight higher user preferred content. This tailoring or customizing requirement came through in phases of the research and is something that should be covered in future research in more detail. Overall, all key features were included to the service scope, but one finding from MVP feature set was that the key features users are using the most should be brought up to a level where it would accessible with least effort.

As can be seen in the UMUX results (Figure 18: UMUX metrics over the course of usage) the longer the users were using the new service, the more they found some peculiarities in the usage, raising the points in frustration and easiness of usage. Over the testing period the testers were facing some technical issues as well, testers were faced occasionally with limitations to connectivity of the service, which is fundamental barrier for using the service and therefore it has high impact on the scores.

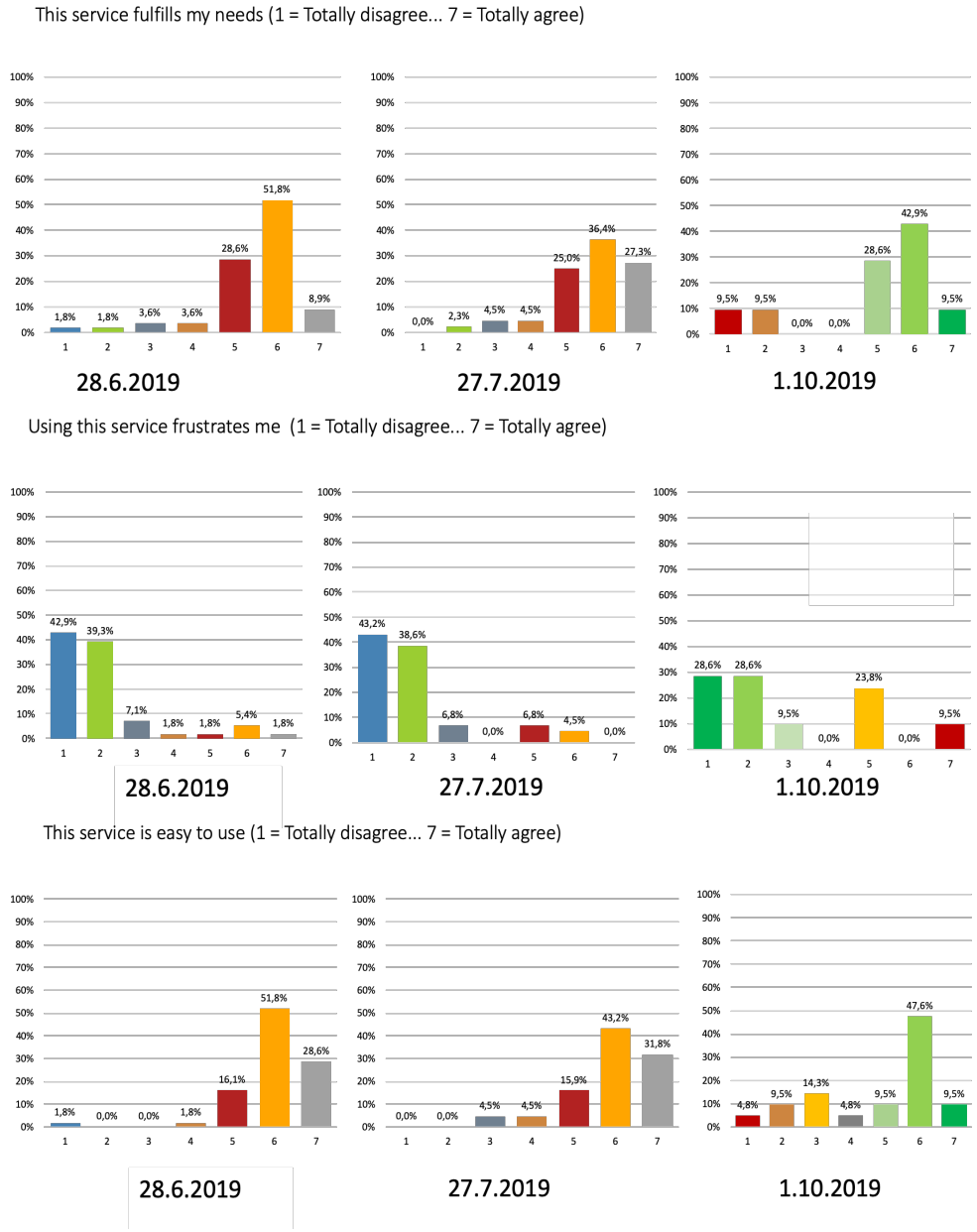


Figure 18: UMUX metrics over the course of usage

This trend was a good eye-opener to the development, the comments on the peculiarities were followed up and changes were made in the service where it was technically possible.

4.6 Continuous improvement with customers

After the launch of the service, iterative work of collecting feedback systematically continues with quantitative surveys. Quantitative surveys are good when team needs to find out how many users are doing something, but they will not tell why users were doing it. Qualitative surveys is better revealing the underlying reasons why users are doing something, but they won't tell how many were doing that. Therefore, both qualitative and quantitative research is

needed. From launch onwards the team gathers data on the service features, UX design and messaging of service, covering both positive and negative feedback. Other important data points to the team are finding out how valuable is the service for user and how easy is the service to use. (Olsen, 2015). These areas cover quite well how the service is perceived by users in regards of the product-market fit. With data gathered, the development team is focusing on improving areas that have been highlighted by the users and come from the measurement space metrics. Those items form motif for the problem space as illustrated in Figure 19: Iterative process for service development. In order for the team to work according to Agile principles of bringing customer value, in the problem space the design thinking tools should be an approach which is accepted by the whole team and it should be used to find out from the users in more details about the problem in question. This means that team should continue to have qualitative interviews with users, finding out more about the problem space and also innovate together with the users for hypothesis for potential solutions.

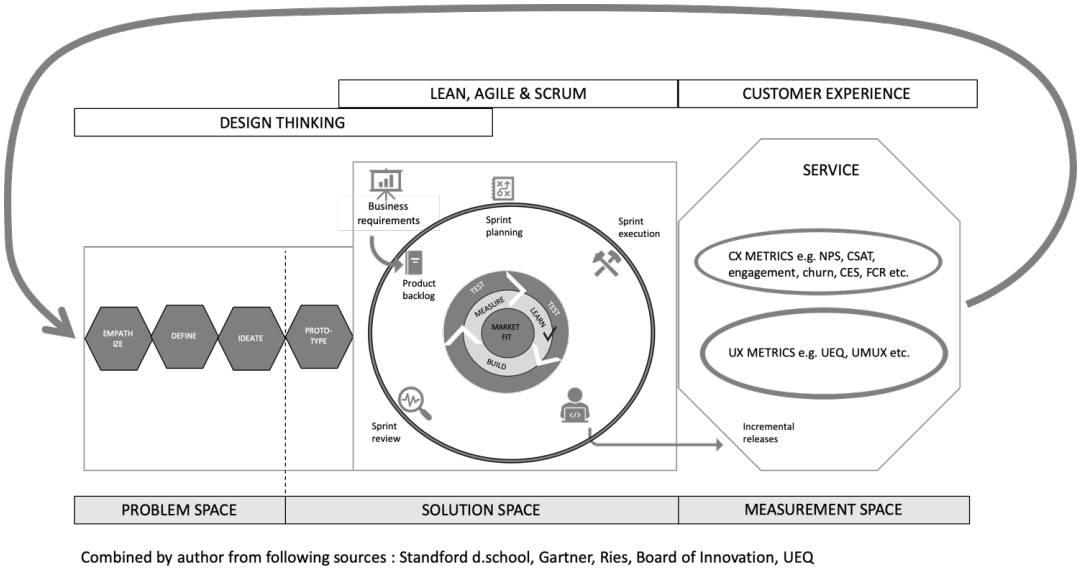


Figure 19: Iterative process for service development

Once a potential hypothesis is created, it needs to be designed or built in order to be tested with users. The hypothesis needs to have metrics in order for the development team to understand whether hypothesis is proven to improve the issue found in the qualitative testing, so measuring and learning phases are vital parts of the process in the solution space. If learning phase proves the hypothesis right, the improvement can be taken into development team's backlog in order to be prioritized with other backlog items. If hypothesis is proven wrong, it can either be pivoted or discarded as waste. Once a certain feature gets prioritized into development team's sprint, it is being developed further and when fulfilling user story's validation criteria amongst other company quality criteria, feature can be released to the

service to be used by customers, meaning it is entering the measurement space to be evaluated again in the quantitative surveys.

5 Summary of the results

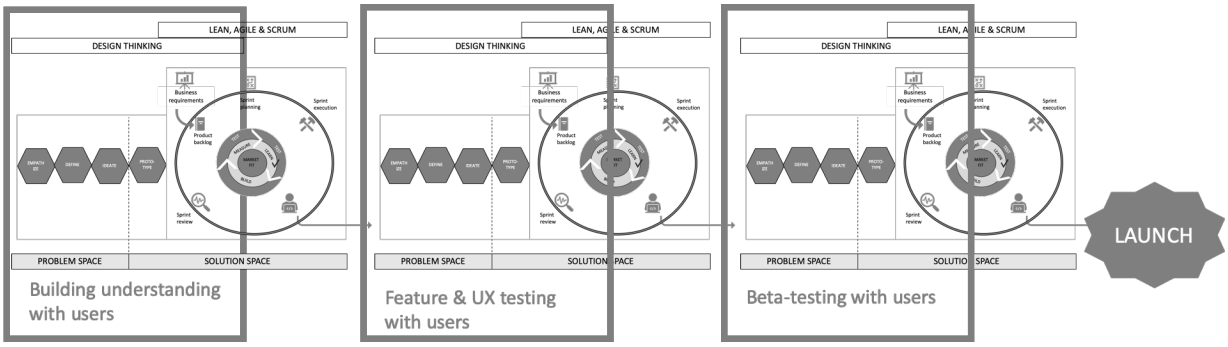
The thesis process has gone through the iterative steps of creating the MVP of the new service with help of Customer Experience, User Experience, Design thinking and Lean theories. The process has taken roughly one year to accomplish the service to the point, where the service has been launched and is live. The original research questions were:

- How Customer Experience, User Experience and Design Thinking theories can help to define MVP of a new service and ensure that the MVP will be successful?
- How to measure the success of the MVP?

To answer the research questions, understanding the main CX concepts is important in service development but in order to build a new service, it is essential for the development team to view the outcomes of the development pipeline through product-market fit lenses. In order to do so, understanding of the target customer and their underserved needs should be clear to all. In our team, we had a clear vision what the service should be like, based on the business vision that we all have, but going deeper into users' life context is something that should be still practiced. In the customer research, the approach was more on the Provider Dominant Logic, and not reaching Customer Dominant Logic as Heinonen et al. have defined (2013)(2019). With PDL the team was able to gain understanding for the hypothesis tested and build further on the service, but the approach is more on the level of how the current approach of the service could be improved. As can be seen in the consecutive UMUX results, there are some aspect of the service that still need polishing and potentially practicing CDL value formation, these edges could be polished. Overall, the UX side of research is vital when creating a new service and that was well covered, taking advantage of UX theories and practicing them in reality was done throughout the service development. Design Thinking approach provides good tools to gain better understanding of the problem space and building hypothesis on the different solution scenarios. Lean provides a good framework for the development team to work on the hypothesis or assumptions, do the least possible work to learn and validate hypothesis and if proven valuable to customer, taken forward to the Scrum teams backlog to be scaled in the service at prioritized timeframe. Setting target measures to each hypothesis is important, as otherwise the validation criteria might be vague, and validation happens through assumptions and positive thinking rather than set target measures. A successful MVP has to have all the key features that users would need to enjoy the service, together with performance benefits that are planned to be part of the experience and in

order to gain positive reactions from the users, the top delighters should be included to the MVP. (Olsen, 2015). In this project, we had all these areas covered, though some areas had only the minimum functionality, but as mentioned some UX parts still be refined and polished. As the customers are the judges of the service, their feedback really tells us whether it was a success or not. Gaining the understanding takes a bit of time, at the time of writing this thesis the feedback is still scarce and should not be used as basis of judgement in this thesis.

The chosen approach is divided into two different spaces, problem space, where Design Thinking methodologies are applied to gain understanding and find potential scenarios for solutions, solution space where different potential scenarios are built, tested and measured together with customers and implemented with Scrum Sprints. The iterative approach is illustrated in Figure 20: Iterative development process of the service X.



Combined by author from following sources : Standford d.school, Gartner, Ries, Board of Innovation

Figure 20: Iterative development process of the service X

The starting point for the research was form the customer understanding, finding out first about the terminology used in service context, then iteratively build the service further to be tested and validated again with customer was a good incremental approach, which gave the development team many opportunities along the development path to learn about the user perceptions, persevere with chosen plans or change the plans to better match the user's perceptions. Pivoting was not done in this project, mainly due to the fact that in the service overall, the basic functionality works in a certain way and with pressure to get the service out in the market, thinking completely out of the box and considering something completely new was not an option. Many features and functionalities were inherited from the current service or had some dependencies with current service, so having a completely new approach was not feasible in many areas. From the project's success point of view, the testing and validations were planned to be in such a cycle that development team would gain most value from the

results. Most of the development team participated into user research, they were observing the users performing the tasks and seeing themselves how the user's actually thought quite differently than the developers in certain areas. Unfortunately, not all developers were participating into research, attitudinal issues were seen amongst them and they were not forced to participate. Measuring the UX of the prototypes was performed throughout the process, starting right from the very first prototype versions shown to users. The research was also building on the UX with UEQ, finding out attractiveness, perspicuity, efficiency, dependability, stimulation and novelty of the service. With user research it was a great learning opportunity to compare the current and new service to each other in order to understand better how the UX performance is developing. Measuring the UX consecutively was important to gain better confidence on the service maturity development. In order to scale solution that has been verified and validated to be included to the team's backlog, the chain of events continue to a specific Sprint to be developed and scaled further and after testing, integrated into the main service for all users in production. Figure 20: Iterative development process of the service X is illustrating the actual process that took place to be able to launch service X.

When considering how well the whole process went through, and what could have been improved in retrospective, the overall process was very linear and suited very well for the purpose, the team was committed to make a service from a customer perspective, adhering results gained from the research findings where feasible. The qualitative interviews with face to face approach performed through different tasks gave the view in the contextual environment which was very good in gaining understanding through observation and co-creating new approaches to match better customer perception. In order to enhance the design thinking framework further, additional methods could have been used to elaborate with customer journey mapping in detail with emphasis on the emotional journey. This approach could have been valuable insight since the onboarding process is only from the service installation perspective is rather limited due to 3rd party hardware, but the flow of installation and usage for the first couple of hours or days could have given the team new perspectives to improve the service, as can be seen from the UMUX metrics with longer period of usage. This piece of work was not performed at the time but will be done after the launch as the service is agile and changes can be made with iterative customer-centric approach.

Once the service is live and enters the CX space for the first time, it enters the measurement space. In the measurement space a company should have a framework where the company is mapping CX with engagement and value. Customer value forms from reflection upon CX where customer answers the following question: "Do I get better in some respect, be it functional, economic, emotional, social, ethical or environmental?" If "yes", the customer values positively the CX and is happy about it. If "no" customer value is negative and feels dissatisfied. Taken further with positive value experience, it outweighs the corresponding costs of service exchange whereas negative value occurs when costs outweigh the benefits. Customer

value formation as a function can happen in the past, present or future anticipation. Customer engagement is a psychological state prominent with specific levels of cognitive, emotional and behavioural activity with a service. It is driven from experiences in the past, present and future anticipation with stems of positive or negative value experience with a service. So put together, if value experience with a service has been positive, it is likely to lead increased engagement with a service in question. People always have some goals to pursue and needs to satisfy to reach an end state. In process of pursuing their goals, the critical components are CX, value and engagement. (Keyser et al., 2015).

In the measurement space, in order to measure the CX, value and engagement, company should have a CX framework where it is approaching the CX in different levels, measuring it on individual customer level to gain understanding of how the company is performing against customer's jobs-to-be-done versus value formation and engagement. In the company the NPS measurement is used as a key metric, and it is used after the service launch, so that is the first time the scores are coming through. As NPS is an attitudinal measurement of customer satisfaction, it gives good indication of the product-market fit perception from the customers. To be able to understand bigger entities the company's CX framework should have service ecosystem to gain understanding how it is doing in relations with other players like competition, complimentary service providers or other customers. Both these levels are pretty well covered in the company, yet improvement areas exist especially in the value formation and engagement side. To be able to understand CX, value formation and engagement and take it constantly further, it is important to have various ways to listen to customers and gain insights to ensure the customer receive constant value and satisfaction from the service and while doing so, increase their engagement. In order for the development team to follow up the insights gathered from the quantitative surveys, a good approach is to collect the findings systematically with different categories, like features, UX and messaging. Once categories exist, the items in different categories should be prioritized according to customer value. A good tool to visualizing customer value is simple axis, displayed in Figure 21: Customer value visualization (Olsen, 2015). In the axis features or other missing items found in the research can be validated against customer value, meaning each need is scored against importance and level of customer satisfaction fixing the need would bring. Then list of features would compete with other items found in the research with their customer value score, giving better understanding of customer value formation in the service.

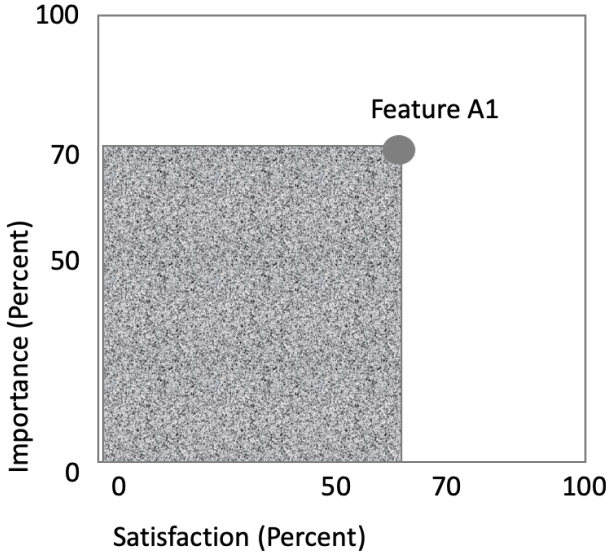


Figure 21: Customer value visualization (Olsen, 2015)

Whilst prioritizing backlog items and innovating new features with Design Thinking approach, it is good to keep in mind The Kano model (Olsen, 2015)(Stickdorn et al., 2018), explaining how customer satisfaction changes over time, the delighter features of a service became a hygienic features and basic requirement very fast. Also, if a basic feature is missing from a service, customers are very dissatisfied but bringing it to the service will not increase the customer satisfaction all the way to delighter area as basic functionality needs to be in a product.

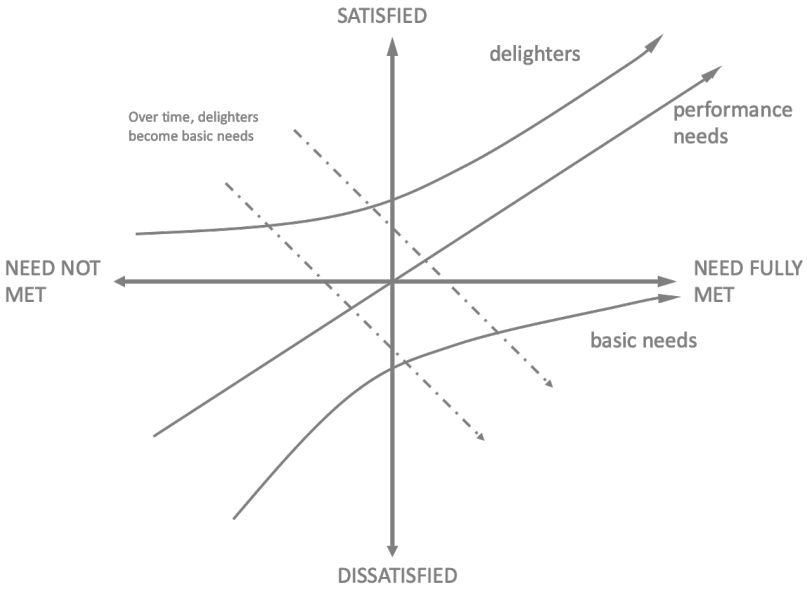


Figure 22: The Kano Model (Olsen, 2015) (Stickdorn et al, 2017)

Along with the feedback received from customers to be prioritized, bigger topics raised by all phases of the research was that tailoring or customizing the UIs to better fit the usage and subscriptions of the customers would be highly valued. This is good topic for problem space to be explored with Design Thinking approach. Other bigger topics would be reviewing areas that were inherited from the current service, taking those into focus areas to be innovated and improved together with customers with help of Design Thinking tools and methods, in order to go deeper into CDL and fulfil users' deeper emotional, sensory and hedonistic needs.

6 Conclusions

This thesis goal was to find out how Customer Experience, User Experience and Design Thinking can help to create an MVP of a service and furthermore how the MVP could be measured to be successful. Theories have given a good ground theory to the process of application, which in this case study has been tied very much in practical application of creating an MVP of a new service.

Customer Experience theories give very good overarching framework for the development team to follow – understanding the concepts of customer experience and what it consists of, going to a level of CX managements' ultimate goal is to optimize users' interactions with a company from the user perspective in order to foster user loyalty. Going further User Experience, gaining understanding of what are the elements of UX that a good MVP should consist of and how to measure the different version of the prototype with UX metrics give clear guidance to the development team to focus on right areas of improvement. With help of Design Thinking approach and tools the team can foster users' power and expertise to go into problem space that research has found out and co-create potential solutions together with users in order to crawl out of the problems space into validating potential solutions. With help of Lean, Agile and Scrum the team is able to produce multiple potential solutions that are easily taken into testing phase and verified with users and metrics set in order to learn about each specific solution.

The service creation process started from building understanding of customers' perceptions of higher-level categories and basic usability issues with help of Design Thinking tools and methods, both qualitative and quantitative. The development team integrated results of first findings and continued to service development with Scrum model in order to have bigger entities to be tested in functionality and UX testing phase. In the functionality and UX testing phase qualitative Design Thinking methods were used to find out about functionality performance aspects and different UX surveys were used to find out about UX performance of the service. Building on the service with findings of functionality and UX testing analysis, the service continued to mature with Scrum sprints. Beta testing took place over couple of months with two

different groups of users, using the service on daily basis and giving active feedback in form of quantitative surveys and open comments and ideas to be included in two different communication channels. Iterative development work continued throughout the process, feeding the Beta testing groups new version of the service to be validated in frequent manner. At a certain point of time, it was decided it is time to launch the service publicly in order to start the sales and gain deeper understanding how is the service perceived in CX context, how are the customers scoring it in the measurement space. Unfortunately, at this point of writing this thesis, the measurement space results are still very scarce, so drawing conclusions from them is too early.

The process' iterative nature has proven a very good way of building on the findings of research and test the gained assumptions with customers, both qualitative and quantitative approaches gave it a good view of the perceptions researched. When thinking about users' context, the improvement areas could potentially have been found more through lenses of Customer Dominant Logic, as the approach now as more geared towards in the Provider-dominant logic. Meaning customer research could have tried to go deeper into customer's life context, finding out more in detail what was the service competing against in customer's life situation. That is something that can still be done, and outcome of customer's life context analysis should be integrated, if feasible, to the service, in order to gain even better product-market fit and secure future success of the service.

The results of this thesis work can be applied to different software development project quite easily, CX, UX and Design Thinking theories are generic and they can be applied to all services, the chosen iterative approach to take process through towards the MVP is also applicable in large variety of software development project.

6.1 Possibilities for further development

Whilst this thesis covers a new service development process up to the launch of the service and also suggest iterative improvements to continue with applied approach and methods, it would be beneficial to research the topic of future service in this field meaning what sort of futures are potential and possible for this kind of service. Futures Thinking approach would help the company cope with fast changing uncertainties in business environments, allowing the company to transform the business in advance towards the desired lucrative future.

References

Printed sources

Brown, T., 2009. Change, how design thinking transforms organizations and inspires innovation. HarperCollins.

Eskola, J., Suoranta, J., 2000. Johdatus laadulliseen tutkimukseen, 4th ed. Vastapaino, Tampere.

Fleming, J., 2017. The Customer Loyalty Loop - why people buy, buy more and buy again. The Career Press, Inc, New Jersey, USA.

Gothelf, J., Seiden, J., 2016. Lean UX, Designing Great Product with Agile Teams, second edition. ed. O'Reilly Media, Inc, CA, USA.

Klaus, P., 2015. Measuring Customer Experience. Palgrave Macmillan, New York.

Lockwood, T., 2010. Design Thinking: Integrating Innovation, Customer Experience, and Brand Value. Allworth Press.

Olsen, D., 2015. The Lean Product Playbook - how to innovate with minimum viable products and rapid customer feedback. John Wilet & Sons, Inc, New Jersey, USA.

Peppers, D., 2016. Customer experience, what, how and why now, Reprint edition (April 30, 2016). ed. BookBaby.

Ries, E., 2011. The lean Startup : how today's entrepreneurs use continuous innovation to create radically successful businesses. New York : Crown Business cop. 2011, New York.

Robier, J., 2016. UX Redefined. Winning and keeping customers with enhanced usability and user experience.

Stephen Anderson, 2007. Creating Pleasurable Interfaces: Getting From Tasks to Experiences.

Stickdorn, M., Hormess, M., Lawrence, A., Schneider, J., 2018. This is Service Design Doing. O'Reilly Media, Inc, Sebastopol, Canada.

Vargo, S.L., Lusch, R.F., 2014. Service-Dominant Logic Premises, Perspectives and Possibilities. Cambridge University Press.

Electronic sources

12 Principles Behind the Agile Manifesto, 2015. Agile Alliance. URL https://www.agilealliance.org/agile101/12-principles-behind-the-agile-manifesto/ (accessed 11.9.19).

Ali, F., 2018. Netflix Discovery Experience — A UX/UI Case Study [WWW Document]. Prototype. URL https://blog.prototypr.io/netflix-discovery-experience-a-ux-ui-case-study-7bcd12f74db1 (accessed 1.3.19).

Berkman, M.I., Karahoca, D., 2016. Re-Assessing the Usability Metric for User Experience (UMUX) Scale 11, 21. (accessed 9.11.2019)

Cervone, H.F., 2011. Understanding agile project management methods using Scrum. OCLC Syst. Serv. Int. Digit. Libr. Perspect. 27, 18–22. https://doi.org/10.1108/10650751111106528 (accessed 10.11.2019)

Frederiksen, D.L., Brem, A., 2017. How do entrepreneurs think they create value? A scientific reflection of Eric Ries' Lean Startup approach. Int. Entrep. Manag. J. N. Y. 13, 169–189. (accessed 8.4.2019)

Heinonen, K., Campbell, C., Lord Ferguson, S., 2019. Strategies for creating value through individual and collective customer experiences. Bus. Horiz. 62, 95–104. https://doi.org/10.1016/j.bushor.2018.09.002 (accessed 8.3.2019)

Heinonen, K., Strandvik, T., Voima, P., 2013. Customer dominant value formation in service. Eur. Bus. Rev. 25, 104–123. https://doi.org/10.1108/09555341311302639 (accessed 17.3.2019)

Hinderks, A., Schrepp, M., Domínguez Mayo, F.J., Escalona, M.J., Thomaschewski, J., 2019. Developing a UX KPI based on the user experience questionnaire. Comput. Stand. Interfaces 65, 38–44. https://doi.org/10.1016/j.csi.2019.01.007 (accessed 4.11.2019)

Jobs To Be Done [WWW Document], n.d. Christ. Inst. URL https://www.christenseninstitute.org/jobs-to-be-done/ (accessed 24.11.2019).

Keyser, A.D., Lemon, K.N., Klaus, P., Keiningham, T.L., 2015. A Framework of Understanding and Managing the Customer Experience. Mark. Sci. Inst. 2015. (accessed 22.11.2019)

Manifesto for Agile Software Development [WWW Document], n.d. URL https://agilemanifesto.org/ (accessed 11.10.19).

Ojasalo, J., Ojasalo, K., 2018. Lean Service Innovation. Serv. Sci. Inf. 10. (accessed 26.11.2019)

Ojasalo, K., Koskelo, M., Nousiainen, A.K., 2015. Foresight and Service Design Boosting Dynamic Capabilities in Service Innovation. Handb. Serv. Innov.

Ojasalo, K., Moilanen, T., Ritalahti, J., 2009. Kehittämistyön menetelmät.

Pasanen, J., 2014T17.45. Minimum Viable Product: Build a slice across, instead of one layer at a time. #mvp /cc @aarron @benhyphenrowepic.twitter.com/0koefYMrpf. @jopas. URL https://twitter.com/jopas/status/515301088660959233 (accessed 5.8.19).

Pucillo, F., Cascini, G., 2014. A framework for user experience, needs and affordances. Des. Stud. 35, 160–179. https://doi.org/10.1016/j.destud.2013.10.001 (accessed 17.3.2019)

Roy, S.K., Shekhar, V., Lassar, W.M., Chen, T., 2018. Customer engagement behaviours: The role of service convenience, fairness and quality. J. Retail. Consum. Serv. 44, 293–304. https://doi.org/10.1016/j.jretconser.2018.07.018 (accessed 8.3.2019)

Vargo, S.L., Lusch, R.F., 2016. Institutions and axioms: an extension and update of service-dominant logic. J. Acad. Mark. Sci. 44, 5–23. https://doi.org/10.1007/s11747-015-0456-3 (accessed 17.3.2019)

Voima, P., Heinonen, K., Strandvik, T., 2010. Exploring Customer Value Formation - a Customer Dominant Logic Perspective. CERS Center for Relationshop and Service Management. (accessed 8.5.2019)

What is Agile Software Development? 2015. Agile Alliance. URL https://www.agilealliance.org/agile101/ (accessed 11.9.19).

Yang, B., Liu, Y., Liang, Y., Tang, M., 2019. Exploiting user experience from online customer reviews for product design. Int. J. Inf. Manag. 46, 173–186. https://doi.org/10.1016/j.ijinfomgt.2018.12.006 (accessed 3.8.2019)

Figures

Tables

Appendices

User Experience Questionnaire (Hinderks et al, 2019):

Please make your evaluation now.

For the assessment of the product, please fill out the following questionnaire. The questionnaire consists of pairs of contrasting attributes that may apply to the product. The circles between the attributes represent gradations between the opposites. You can express your agreement with the attributes by ticking the circle that most closely reflects your impression.

Example:

attractive	○	⊗	○	○	○	○	○	unattractive

This response would mean that you rate the application as more attractive than unattractive.

Please decide spontaneously. Don't think too long about your decision to make sure that you convey your original impression.

Sometimes you may not be completely sure about your agreement with a particular attribute or you may find that the attribute does not apply completely to the particular product. Nevertheless, please tick a circle in every line.

It is your personal opinion that counts. Please remember: there is no wrong or right answer!

Please assess the product now by ticking one circle per line.

	1	2	3	4	5	6	7		
annoying	○	○	○	○	○	○	○	enjoyable	1
not understandable	○	○	○	○	○	○	○	understandable	2
creative	○	○	○	○	○	○	○	dull	3
easy to learn	○	○	○	○	○	○	○	difficult to learn	4
valuable	○	○	○	○	○	○	○	inferior	5
boring	○	○	○	○	○	○	○	exciting	6
not interesting	○	○	○	○	○	○	○	interesting	7
unpredictable	○	○	○	○	○	○	○	predictable	8
fast	○	○	○	○	○	○	○	slow	9
inventive	○	○	○	○	○	○	○	conventional	10
obstructive	○	○	○	○	○	○	○	supportive	11
good	○	○	○	○	○	○	○	bad	12
complicated	○	○	○	○	○	○	○	easy	13
unlikable	○	○	○	○	○	○	○	pleasing	14
usual	○	○	○	○	○	○	○	leading edge	15
unpleasant	○	○	○	○	○	○	○	pleasant	16
secure	○	○	○	○	○	○	○	not secure	17
motivating	○	○	○	○	○	○	○	demotivating	18
meets expectations	○	○	○	○	○	○	○	does not meet expectations	19
inefficient	○	○	○	○	○	○	○	efficient	20
clear	○	○	○	○	○	○	○	confusing	21
impractical	○	○	○	○	○	○	○	practical	22
organized	○	○	○	○	○	○	○	cluttered	23
attractive	○	○	○	○	○	○	○	unattractive	24
friendly	○	○	○	○	○	○	○	unfriendly	25
conservative	○	○	○	○	○	○	○	innovative	26