

THE USER EXPERIENCE EVALUATION OF CORPORATE CUSTOMER ONLINE SERVICE

Case collection company X

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Tämä opinnäytetyö keskittyi tutkimaan ja arvioimaan toimeksiantajan yritysasiakasverkkopalvelun käytettävyyttä ja käyttäjäkokemusta. Tutkimuksen tavoitteena oli ymmärtää, miten käyttäjät kokevat kyseisen verkkopalvelun, tunnistaa sen vahvuudet ja heikkoudet sekä ehdottaa käytännön parannustoimenpiteitä käyttäjäkokemuksen optimoimiseksi.

Tutkimuksen metodologia perustui käytettävyyden ja käyttäjäkokemuksen periaatteisiin, jossa käytettiin laadullista tutkimusmenetelmää eli syvähaastatteluja. Teoreettisessa viitekehyksessä käytettävyyssperiaatteita ja keskeisiä käyttäjäkokemuksen osa-alueita tarkasteltiin syvällisesti.

Opinnäytetyössä esiteltiin tuloksia ja analyysejä käyttäjien kokemuksista verkkopalvelun käytöstä. Tulosten perusteella kirjoittaja antoi konkreettisia suosituksia, joiden avulla toimeksiantajayritys voi merkittävästi parantaa verkkopalvelunsa käyttäjäkokemusta ja vastata asiakkaidensa tarpeisiin. Näitä suosituksia ja tuloksia voidaan käyttää verkkopalvelun jatkokehittämiseen ja asiakastyytyväisyyden maksimointiin, ja ne voivat parantaa yrityksen kilpailukykyä tarjoamalla erinomaisen verkkopalvelukokemuksen tulevaisuudessa.

Opinnäytetyö tarjoaa myös arvokkaita näkemyksiä muille yrityksille ja organisaatioille, jotka pyrkivät optimoimaan ja parantamaan digitaalisten palveluidensa käyttäjäkokemusta.

Avainsanat käytettävyys, käyttäjäkokemus (UX), verkkopalvelu

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Abstract

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This thesis focused on researching and evaluating the usability and user experience of the client's business web service. The aim of the study was to understand how users experience the web service, to identify its strengths and weaknesses and to suggest practical improvement measures to optimize the user experience.

The methodology of the study was based on usability and user experience principles, using a qualitative research method, i.e. in-depth interviews. In the theoretical framework, usability principles and key aspects of user experience were examined in depth.

The thesis presented findings and analyses of users' experiences when using the web service. Based on the results, the author made concrete recommendations to help the commissioning company to significantly improve the user experience of its online service and to respond to their customers' needs. These recommendations and results can be used to further develop the web service and maximise customer satisfaction and have the potential to improve the competitiveness of the company by providing an excellent web service experience in the future.

The thesis also provides valuable insights for other companies and organizations seeking to optimize and improve the user experience of their digital services.

Keywords usability, user experience (UX), online service

Pages 33 pages and appendices 3 pages

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1 Introduction

The user experience of a company's online service is a crucial factor in modern business. This thesis explores the fundamentals of usability and user experience, various definitions, key concepts, and their significance in the development of companies' online services. In the theoretical framework of the thesis, the author addresses usability as the core theory throughout the entire study and presents the views and definitions of Dr. Jakob Nielsen, who has extensively researched the subject. (Norman & Nielsen, 1998; Nielsen, 2012)

The realms of usability and user experience have been extensively investigated, particularly within the domains of websites and online services (Nielsen & Loranger, 2021; Hassenzahl et al., 2021). However, within the specific collection sector that the client company X operates, there is a noticeable dearth of studies examining the user experience and usability of such online services. The thesis aims to fill a theoretical gap from the perspective of the user experience and usability of the online service for the corporate customer of a company providing collection services, and to provide researched information on how company X benefits from developing and improving the user experience of the online service, considering the perspectives of the customers using the online service.

Many have researched the user experience and usability of online services, such as Jakob Nielsen, a pioneer in the field mentioned above (Norman & Nielsen, 1998; Nielsen, 1994). However, in doing the background research, the author was unable to find any directly researched material on the user experience and usability of online services for debt collection companies. For its part, this thesis aims to fill that gap.

1.1 Objectives of the research

The commissioning company, referred to as company X, has designed its online service to provide a comprehensive service experience for its B2B clients. The primary purpose of the service is to enable clients to manage their customer relationships and receivables, registration, and independent report generation to facilitate business monitoring tasks. The purpose of this research is to comprehensively evaluate and analyse the user experience of the commissioned company's online service for its business clients.

The core of the study is to identify and understand the challenges that customers may face in using the service and provide concrete suggestions for improvement based on these issues.

The need for the study arises from the fact that a significant part of the staff of company X is currently allocated to instructing and training corporate customers using the online service on a significant weekly and monthly basis. The online service is specifically designed to enable customers to manage their receivables and invoices independently through the online service.

Based on the data collected in the thesis, the company X aims to collect information for further development of the service, which will enable it to make the online service more user-friendly and efficient. This is expected to have a direct impact on the increasing number of customers using the service and to reduce the need for personalised guidance for customers using the service.

If the above is achieved, it will facilitate the optimization of human resources and operational work in company X in a more cost-effective manner. By using the results of the study in the further development of the online service, company X will not only be able to improve its operations, but also to develop a clearer, easier to use and more user-friendly service package. The thesis is based on various theories related to usability and user experience.

1.2 Research questions

The first research question aims to understand how customers perceive the online service so that the gathered information can serve as a basis for redesigning the service to be more attractive for future use. This continues as a discussion on the reasons and obstacles identified among current users. The second research question focuses on determining the challenges customers face when using the online service and the reasons they may have for not utilizing the offered service. This provides the client with information about aspects and shortcomings that do not function from the customer's perspective. The third research question provided an opportunity to contemplate what areas of improvement customers who have used the online service deem necessary. These areas of development are considered crucial for encouraging increased usage of the service.

In summary, the research questions create a comprehensive understanding of customer behaviour and the utilization of the online service thus far. The aim of the research was not only to identify current challenges but also to offer practical solutions that can enhance the attractiveness of the service and increase its usage among the customer base.

The following are the research questions that the author aims to address in this thesis:

- How do users perceive the user experience of an online service?
- What are the challenges with the online service from customers perspective?
- How can the online service be enhanced to provide better user experience?

2 Theoretical framework

The introductory chapter of the theoretical part of the study introduces the concept of usability. The author begins the discussion by reviewing the basic definition of usability and clarifying its meaning and components. The author highlights the importance of usability guru Jakob Nielsen's definition and heuristics as a basic theory of usability. The study also discusses usability in the context of web design. Through the above, the author introduces the basic principles of usability and examines its implications for business. The theoretical framework also examines how usability and user experience are related.

2.1 Usability

There have been multiple definitions proposed for usability. According to ISO 9241-11 standard, usability indicates how well specified users can use a product in each usage situation to achieve the defined goals effectively, efficiently, and pleasantly. (Jokela, 2010, p. 18)

Usability refers to the user's experience and efficiency in using a particular system, service, or product. It encompasses a broad range of elements that impact user interaction and satisfaction. Usability is typically assessed using various metrics such as ease of use, efficiency, and satisfaction. The central goal is to create a user experience that is pleasant, efficient, and accessible to all users (Mifsud, 2018). One component of usability is the ease of use, manifested in the user's ability to perform various tasks effortlessly. Ease of use is a multifaceted concept covering the clarity of navigation, site structure, and the comprehensibility of functions (Smith, 2017). To enhance usability, designers should consider user diversity and ensure that the interface is intuitive for all user groups.

The ease of using online services is one aspect of usability (Nielsen, 2012). Typically, during the design phase, efforts are made to avoid bottlenecks in usability and make the service usage straightforward. Another crucial perspective is efficiency, measuring the user's ability

to complete tasks quickly and effortlessly. Factors such as fast loading times, clear navigation, and well-presented information are all significant factors affecting the user's experience of the service's efficiency (Lee, 2019). Companies can benefit from investing in optimizing the performance of their websites to ensure users have a swift and seamless experience.

User satisfaction describes the user's experience and satisfaction after usage (Alam, Rehman, & Ullah, 2020). A positive user experience typically leads to increased commitment and customer loyalty. Collecting feedback and making changes based on it is crucial for optimizing the user experience. Accessibility is also an essential part of usability, meaning that the system is designed to be accessible and usable by everyone, including physically restricted users (World Wide Web Consortium, 2018). Ensuring accessibility not only promotes equality but also broadens the user base.

This thesis focuses on usability and user experience, and both areas have their own ISO standards, while accessibility, for example, has its own legal requirements (Accessibility Laws and Standards, n.d.). Krug (2006, p. 5) summarises the definition of usability as follows: "Usability means only that ensuring that something - say a website, a jet fighter or a revolving door - can be used by an experienced person of average (or supporting) skill for its intended purpose without a hopeless sense of frustration".

Concerning the evaluation of usability, ISO 9241-11 standard underscores the significance of context. The user's identity, environmental factors, and the nature of the task, in conjunction with the tools employed, influence usability. When the context is partially recognizable, one can assess the product's efficiency, cost-effectiveness, and user experience. Efficiency is gauged by measuring how much superior the performance of the product is compared to a situation without the product or a competitor's equivalent. Cost-effectiveness examines how much time, money, and resources are saved by using the new product as opposed to the old one. The pleasantness of the service aligns with Nielsen's concept of user experience satisfaction (Parkkinen 2002, 31–32).

2.1.1 How do usability and user experience merge?

Usability and user experience are often confused with each other, although these two have a close relationship. However, fundamentally, these two concepts are different. In short, UX is a broader design practice that ensures the usability of a solution, but it also focuses on broader goals such as usefulness and overall engagement. Usability is the output of UX, and

within the framework of UX, efforts are made to test the solution's performance. (Nichols & Chesnut, 2014, p. 13)

Distinguishing between usability and user experience is a topic approached in various ways. Some liken usability to science and user experience to art, while others compare usability to a freeway and user experience to a winding mountain road, among many other analogies. Crucially, it's essential to recognize that usability is a component within the broader spectrum of user experience. A solid foundation in usability is necessary to deliver an outstanding user experience. However, exclusively concentrating on usability is insufficient to achieve excellence in user experience. (Fitzgerald, 2020)

2.1.2 The model of the attributes of system acceptability

According to Nielsen (1994, p. 24-25), usability is a component of system acceptability that indicates whether the system is comprehensive enough to meet user preferences and requirements. Social acceptability and practical acceptability make up the acceptability of the system (Fig.1.) Practical acceptability can be considered through different categories, including utility, reliability, compatibility with existing systems and price. Usefulness refers to whether the system can be used to achieve the desired objective. Utility can be further subdivided into the categories of usability and usability. Usability is the memorability, correctness, learnability, efficiency, and pleasantness of the use situation.

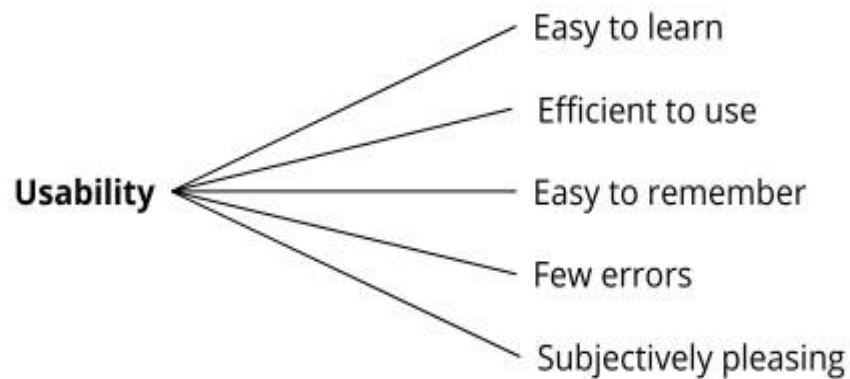


Figure 1. Usability as part of a model of system acceptability attributes (Nielsen, 1994, p. 25)

According to Nielsen usability can be divided into five different elements: learnability, efficiency, memorability, correctness, and pleasantness.

Learnability refers to how easily the user learns to use the product or service. Learnability is the most important aspect of usability, since almost all systems need to be easy to use and easy to learn. In principle, users do not learn the whole interface before they start using the system, but rather start using the system as soon as they have mastered some part of the interface. (Nielsen, 2012; Nielsen, 1994, p. 28-29)

Efficiency refers to how quickly users perform tasks after learning to use a specific service or product. In complex systems, reaching an expert level may take several years, and efficiency is typically assessed by selecting pre-defined experts and measuring their time spent on test tasks. (Nielsen, 2012; Nielsen, 1994, p. 30.-31)

Memorability relates to how easily users remember the use of a service or product without relearning after a break. Users are classified into novices, experts, and occasional users, with the latter able to use the system based on their previous experience. An easily memorable user interface is particularly crucial in situations where users return to the system after a long hiatus. (Nielsen, 2012; Nielsen, 1994, p. 31-32)

Error-free operation encompasses the number and severity of errors made by users, as well as error recovery. Users can immediately correct some errors, merely slowing down their actions, while others may lead to more serious consequences, such as system failures or loss of user work. Minimizing the recurrence of errors is essential. (Nielsen, 2012; Nielsen, 1994, p. 32–33)

Satisfaction reflects how pleasant, enjoyable, and comfortable it is to use a specific service or product. In some systems, the enjoyability of the user experience may be more important than speed. Pleasantness can be investigated, for instance, through satisfaction surveys (Nielsen, 2012; Nielsen, 1994, p. 33-34).

2.1.3 Heuristic evaluation of usability

Usability testing is widely recognized as the most comprehensive and effective method for assessing usability and reducing the risks associated with its use. However, due to the relatively small sample size and the nature of the testing event, certain types of usage errors are unlikely to occur during usability testing. Therefore, usability verification methods such as heuristic evaluation are recommended.

Jakob Nielsen's (Nielsen, 1994) ten-point list of usability rules and principles, or heuristics, defines the factors that a successful user interface or system should follow.

The usability of a system can be assessed during the design process using the usability principles discussed below. It is also worth noting that these principles can be fully applied to the usability assessment of an existing product.

Visibility of system status	The user should easily discern their location within the interface and understand the system's status.
Match between system and the real world	The system should employ everyday language rather than specialized terminology, emphasizing effective usability through communication with the user in familiar terms and concepts.

User control and freedom	The users should have the capability to effortlessly revert to the original state, for instance, using "Cancel" or "Retry" buttons, in the event of an error occurrence.
Consistency and standards	Messages and functions of the system should consistently convey the same information, adhering to established standards.
Error prevention	Emphasizing the prevention of errors is more crucial than providing error messages. Identifying and proactively averting potential error situations should be a priority.
Recognition rather than recall	The users' cognitive load should be minimized by presenting information, functions, and options clearly within the user interface.
Flexibility and efficiency of use	The system's operation should be flexible and efficient for all user groups, allowing customization of views.
Aesthetic and minimalist design	The interface should embrace simplicity, incorporating only essential information
Help users recognize, diagnose, and recover from errors	Error messages should articulate errors in a comprehensible manner and offer constructive solutions
Help and documentation	While system usage should ideally be intuitive, guidance and instructions are often necessary. These should be easily accessible, concise, and supportive of the current usage context.

Figure 2. 10 Usability Heuristics for User Interface Design (Nielsen, 1994)

2.1.4 Usability in website design

Kuutti describes as follows: "Usability as a product characteristic describes how smoothly the user uses the product's functions to reach the desired goal. Usability is therefore about the interaction between machine and human". (Kuutti, 2003, p. 13)

A smoothly functioning user interface provides users with a pleasant experience and encourages them to return. On the other hand, interfaces that lack good usability can lead to user frustration and time wastage. In such cases, users often seek out another, more functional interface. According to Nielsen (Nielsen, 1994, p. 2-3), investing in usability can result in significant cost savings as errors decrease, the need for technical support diminishes, and the learning curve accelerates.

User-centered design is a crucial approach in interface design. Key aspects of this approach include understanding user needs, defining requirements, and conducting evaluations with users. The goal of user-centered design is to develop a system that aligns as closely as possible with the needs and requirements of users. (Oulasvirta, 2003, p. 102)

2.2 User experience (UX)

In the second chapter of the theoretical part of the thesis, the author begins by introducing the basic idea of the concept of experience. Following this there is an in-depth exploration of the fundamental concept of user experience, providing an exposition on the nature and formation of the concept. User experience is examined from the perspective of Marc Hassenzahl's definitions, emphasizing essential aspects of user experience design and its various stages, illustrated with explanatory models.

2.2.1 What is experience?

To address user experience as a concept, it is crucial to first understand what experience entails. When examining the definition of user experience, it is important to consider the perspectives of Jodi Forlizzi, a significant influencer in usability research. Forlizzi's insights categorize the interaction between humans and products into three distinct levels of experience. (Forlizzi & Battarbee, 2004)

On the first level, there is "experiencing", which describes a continuous flow of thoughts. This level is related to how we consistently set goals in relation to other people, products, and the environment. Forlizzi's and Battarbee's examples of experiences at the first level include everyday activities such as walking or using a messaging application.

The second level is the "individual experience level", characterized by an experience with a clearly defined beginning and end. This level may induce changes in the user's emotional state or behaviour. Examples of second-level experiences include watching a TV show, interacting with websites, or reading an interesting story. The third level is the "co-experiencing level", which involves experiences within a social context. The social situation influences the experience, making it more diverse and unpredictable. For instance, a situation perceived as unpleasant when experienced alone may become enjoyable when shared with others. (Forlizzi & Battarbee, 2004)

2.2.2 User experience

When talking about user experience, it generally refers to the thoughts, emotions, and experiences people have when using a product or service. This concept can be defined in various ways, and the precise content varies depending on who you ask. For instance, the definition by Bill Albert and Tom Tullis emphasizes the breadth of user experiences and how they impact the user's thoughts and emotions (Albert & Tullis, 2013, p. 51). Well-known definitions of user experience are also provided by Nielsen Norman Group and the ISO 9241-210 standard.

In simple terms, UX stands for user experience. It is a design approach that concentrates on crafting experiences, primarily digital ones such as websites, to be user-friendly and fulfilling. This practice revolves around prioritizing the user, ensuring that the eventual experience offers intuitive, helpful, and even enjoyable interactions. (Nichols & Chesnut, 2014, p. 8)

The UX is commonly used when discussing the features and experiences generated by a product or service. User experience is a crucial factor in terms of purchasing decisions and the adoption of services, and it can be based on initially positive, negative, or neutral experiences. A unique user and customer experience cannot be replicated; rather, it is always formed individually. (Matihaldi & Sinisalo, 2020)

In his diploma thesis, Rytkönen presents his interpretation of the definition of user experience according to the ISO 9241-210 standard (ISO 9241—210:2019) as follows: "The perceptions

and responses of a person that result from the use or intended use of a product, system, or service". (Rytönen, 2014, p. 8–9)

The standard comprises three annotations. The first annotation emphasizes that user experience encompasses users' emotions, beliefs, preferences, perceptions, physical and psychological reactions, behaviour, and achievements occurring before, during, and after usage (ISO 9241—210:2019). In the second annotation, it is stated that user experience is a consequence of factors such as brand, presentation, functionality, system efficiency, interactive behaviour, and features of the interactive system. Additionally, it is influenced by the user's internal and physical state arising from prior experiences, attitudes, skills, personality, and the usage context (ISO 9241—210:2019). The third annotation asserts that when interpreting usability from the perspective of users' personal goals, similar observational and emotional aspects related to user experience may be included. In this context, usability criteria can be employed in evaluating user experience. (ISO 9241—210:2019)

In the era of the internet, as markets have expanded globally, competition for customers has intensified significantly. Consequently, user experience and usability have become increasingly pivotal factors for businesses. The ease of use and smooth functionality of a service are now critical in attracting customers. The better a service is designed and the more seamlessly it operates, the more it attracts and retains users. (Ritter & Winterbottom, 2017)

2.2.3 Hassenzahl's perspective

Professor Marc Hassenzahl introduces comprehensive definition of user experience and according to his perspective the consequences of user experience arising from the use of a product include satisfaction, pleasure, and attractiveness.

Satisfaction is often considered a key metric and goal in user experience. Satisfaction occurs when the user has expectations of the product, its functions, and other features, and these expectations are met. The user's functional goals are thus strongly linked to satisfaction. Pleasure arises when the user experiences positive moments that they do not expect directly, leading to delight in individual events. Attractiveness, the third element, arises when a product somehow succeeds in attracting the user and evokes positive feelings. The attractiveness of the product is related to its characteristics. However, the usage context has

a significant impact, as the product can attract the user, especially when it provides the user with a means to achieve meaningful goals. (Hassenzahl, 2005, p. 8-9)

It is impossible to provide a universally applicable definition for user experience, as it is strongly tied to the prevailing usage situation and the subjectivity of the experience.

Rytkönen emphasizes that user experience is in constant flux; it is not bound by time but begins to take shape even before the actual use of the product. User experience changes during use and may continue to evolve even after use. Therefore, there is no general definition for a good user experience; it depends on the product, its intended use, and the environment in which it is deployed. (Hassenzahl, 2005, p. 5)

2.2.4 UX design

In the business world, as the shift towards increasingly leveraging digitization and automated functions takes place, it is crucial to remember to consider user experience in the design of applications and interfaces. As stated in the previous chapter, it is impossible to provide a single general definition for user experience. The concept of user experience needs to be approached from various angles to be more comprehensively understood.

UX design comes from the words "user experience." UX design refers to user experience or usability. The international standard ISO 9241-210 guides user-centered design. The standard specifies that the user's perceptions and reactions are influenced by the anticipated use of the system. "Achieving an excellent user experience requires that software is seamless and even unobtrusive part of the user's work" (Jussila 5.9.2022). Loading speed, accessibility, and security are factors that enhance the user experience of all websites. Loading speed makes website usage comfortable, and in web design, it is crucial to keep the sizes of web pages moderate to ensure quick loading times. In accessible websites, the navigation is clear for all users. Security ensures that users stay on the site without being disturbed by browser warnings or error messages, improving the overall user experience. (Heikkilä, 2021)

Peter Morville is a seasoned Information Technology pioneer. He has worked with companies such as IBM, Microsoft and Ford and is Chairman of the IT & Discoverability consultancy. Peter Morville's approach is to divide the user experience into context, content, and users - and find the right balance between them. (Käyttäjäkokemus Verkkosivujen Suunnittelussa - Design Inspis, 2022)

According to Peter Morville, the user experience can be divided into three different sections. Based on Morville's thinking, these are context, content, and users (Koirikivi, 2022). The term "context" refers to the environment in which an organization operates, encompassing business goals, funding, politics, culture, technology, resources, and constraints. For instance, if a company aims to expand globally, the context involves considerations of international political climates, cultural differences, financial opportunities, and technological requirements. The content includes content objectives, document and data types, volume, existing structure, governance, and ownership. For example, if an organization's content objectives involve enhancing employee training, the content would comprise training documents, multimedia materials, and the governance structure overseeing the creation and distribution of this content.

The users encompass the audience, tasks, needs, information-seeking behaviour, and experience. In the context of a website, for instance, users may include customers looking for specific products (audience), their tasks may involve product research and purchase, and their needs may range from detailed product information to a seamless online shopping experience. Understanding their information-seeking behaviour and providing a positive overall experience is crucial. (Usability.gov, 2019)

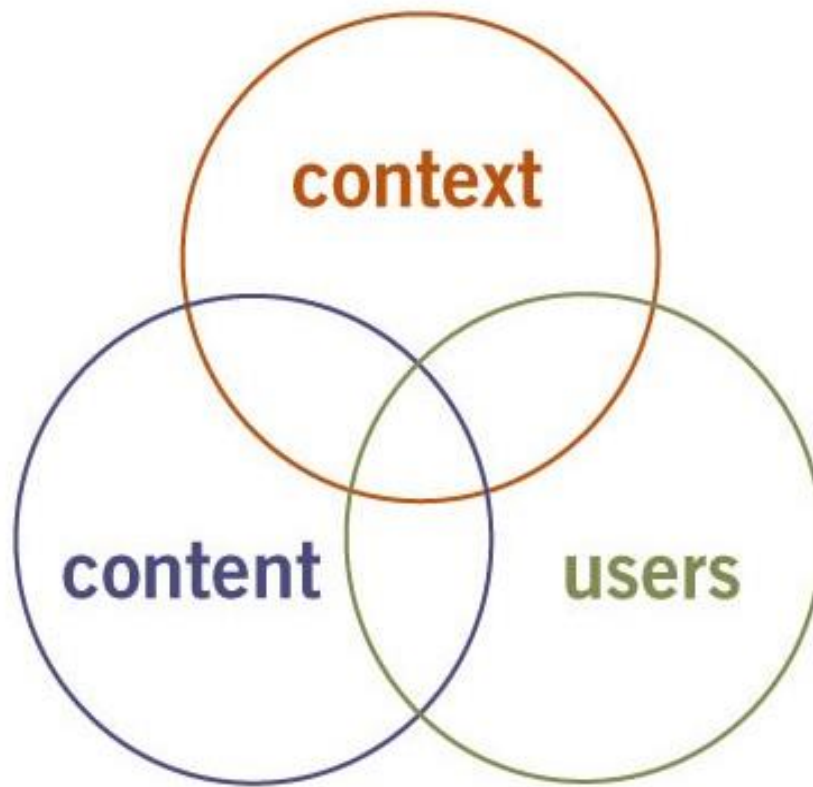


Figure 3. Three Circles of Information Architecture (Morville, 2004)

After creating the above diagram, Morville wanted to extend the visualization of the different aspects of the user experience to help customers understand why they needed to go beyond usability.

According to Morville's definition presented in 2004, user experience is built on seven different facets that are interconnected in a honeycomb-like structure (Fig. 4.). User experience can be evaluated and studied by addressing these seven facets presented in the honeycomb. (Tecinspire Oy, 2022)



Figure 4. User Experience Honeycomb (Morville, 2004)

Ensuring a positive user experience (UX) encompasses various critical considerations. Firstly, the usability of a product stands as a fundamental aspect. The product must be easily utilizable, allowing users to accomplish their intended tasks without encountering unnecessary challenges. A user's ability to navigate through the interface seamlessly is paramount for the product to be deemed effective. Furthermore, the findability of information within the product is crucial. This entails evaluating the coherence of the navigation menu and the placement of search bars. If the process of locating essential information demands excessive cognitive effort, the overall UX is compromised. Additionally, findability extends beyond the digital realm, encompassing the product's accessibility through online searches or alternative means. (Tecinspire Oy, 2022; DeRome, 2022)

An indispensable criterion for evaluating UX revolves around the product's ability to fulfill specific user needs. Regardless of its aesthetic appeal or user-friendly interface, a product's value diminishes if it fails to address the user's requirements effectively. Users should find the product aligning with their objectives and contributing positively to their experiences. Engagement is a pivotal element in UX assessment. The design of a product should be

intuitive and enjoyable, encouraging users to willingly engage with it. Conversely, a lacklustre design can undermine the user experience, even for highly functional products, if there is a dearth of incentives to use them regularly. Intrinsic value is another key consideration in evaluating the effectiveness of a product's UX. The product must contribute meaningfully to users' lives, whether by saving time, money, or aiding in the achievement of personal or professional goals. The perceived value enhances user satisfaction and retention. Credibility plays a central role in UX, particularly in online interactions. Users are less likely to share sensitive information, such as credit card details, if a website fails to instill trust. Establishing credibility is imperative for fostering a secure and positive user experience. (Tecinspire Oy, 2022; DeRome, 2022)

Lastly, universal accessibility is a non-negotiable aspect of effective UX. For a product to be truly impactful, it must cater to users of all abilities. Consideration for individuals with disabilities is essential to ensure universal access, aligning with principles of inclusivity and usability for diverse user demographics. (Tecinspire Oy, 2022; DeRome, 2022)

These factors not only guide the design of an excellent user experience but also determine how they are tested, researched, and measured. All these components must operate in concert to achieve the optimal outcome. Neglecting one or more of these elements leads to a sub-standard user experience. Each aspect of the user experience is significant, but collectively, they shape either a positive or negative experience. (Morville, 2004)

The honeycomb concept brilliantly manages to achieve multiple objectives concurrently. In the first place, it serves as an effective instrument for elevating discussions beyond mere usability, fostering a deeper comprehension of the imperative to establish clear priorities. The perpetual dilemma arises: should one prioritize the allure of a website or its accessibility? And what about the delicate balance between usability and credibility? The veracity of the matter lies in the contextual interplay of factors such as content, context, and user dynamics, emphasizing the significance of making conscious trade-offs rather than navigating them unconsciously. (Morville, 2004)

UX design comes from the words "user experience". UX design refers to user experience or usability. The international standard ISO 9241-210 guides user-centered design. The standard specifies that the user's perceptions and reactions are influenced by the anticipated use of the system. However, there is no single and correct definition for user experience (Ahonen, n.d.). "Achieving an excellent user experience requires that software is seamless and even unobtrusive part of the user's work" (Jussila, 2022).

3 Methodology

3.1 Qualitative research introduction

Qualitative research focuses on non-numerical data and utilizes a narrative approach, as opposed to quantitative research which deals with numerical information. The primary objective of qualitative research is to gather diverse opinions, perspectives, and experiences through various means, such as text and sound. In qualitative data, the emphasis is on obtaining authentic and truthful information, highlighting the importance of a neutral and natural environment in this context. Qualitative research methods include observation, interviews, surveys, and focus groups, serving as primary tools for research (Bhandari, 2020). In this thesis, the author opts for a qualitative research method and implements it through in-depth interviews. Qualitative research delves deeply into the subject matter, and the choice of this method is driven by the need to acquire rich and diverse information about the research topic.

3.1.1 Primary research: in-depth interviews

The author conducted in-depth interviews via phone calls for the thesis. The respondents participating in the survey were specifically chosen from customers of company X who minimally utilize their online services. The interview questions were meticulously crafted as structured questions to ensure a systematic and comprehensive exploration of the chosen topics. See interviews questions in more detail in appendix 1. The average interview time was approximately 30 minutes per interview. The interviews were conducted on two different dates, 25.1.2024 and 29.1.2024. A more detailed interview schedule is presented in appendix 2.

The in-depth interviews collected a total of 4 excellent answers from respondents. The interviews for this study took approximately three weeks to complete, as the structuring of the questions in collaboration with company X required several planning meetings to construct the final questions. The author then began calling the interviewees, among which were numerous failed attempts at calling. However, conducting in-depth interviews as requested by the client company, company X, through direct calls proved to be a very laborious task. Despite some preliminary research, it was difficult to find enthusiastic respondents and the author made tens of phone calls without reaching a significant number of them. The author

made notes of the questions and answers discussed in the interviews immediately after each contact.

The in-depth interviews were conducted with the purpose to gather and evaluate more in-depth information about the user experience of the online service of company X's business customers and to answer the following research questions: "how do users perceive the user experience of an online service?", "what are the challenges with the online service from customers perspective?" and "how can the online service be enhanced to provide better user experience?".

The participants in the survey were selected from existing small business customers of company X who use their provided corporate customer online service minimally. In the in-depth interviews, the author focused on finding answers to the research questions chosen for the study. See Appendix 3 to receive more insight of the data management plan and safety of the research.

Referring to the participants in the in-depth interviews, the author uses the terms "respondents", "he/his and "she/her". The phone interviews provided an opportunity to deepen the interaction with the respondents and gather their experiences and perspectives on their minimal use of the online service.

During the interviews, the author also had the opportunity to verbally promote the positive aspects of the online service and encourage respondents to use it more in the future. This encouragement aimed to enhance their proficiency in using the service, potentially speeding up their daily work. It is important to note that the promotion and encouragement were conducted in conjunction with the interviews based on the specific request of company X. This approach allowed the author to not only gather valuable insights into the participants' experiences but also align with company X's goals of promoting and increasing usage of their online service.

3.2 Commissioning company

As the industry in which the thesis was commissioned is itself sensitive and it is very important to recognise the sensitivity of the research topic and to respect the subject of the research, in this case company X. For understandable reasons, the commissioning company has asked to remain anonymous, and for the purposes of this study will be referred to as company X only.

3.2.1 Company X

The commissioning company for this thesis is a debt collection company that is part of an international group, later referred to as company X. The company specialises in assisting other companies in the management of receivables and collects receivables on behalf of creditors and sellers of services and products. The author of this thesis works in the collection department of the company. Company X is a Finnish company specialising in credit management and collection services.

This thesis analyses the experiences of company X's business customers using the web service from the perspective of usability and user experience. Company X has developed an online service to help corporate customers manage their own receivables. It also provides a wide range of reporting tools that corporate customers can use to help them with their accounting. With the rise of digitalisation, the potential of the online service has been recognized and there is therefore a need to hear from users of the online service about their experiences. This study provides information, experiences and useful insights that can help companies to improve the design and functionality of their online service.

4 Results and analysis

The author uses a deductive approach to evaluate the results, which means that the author starts from the most general principles, theories and concepts and applies them to explain the user experiences of business users of online services.

The first question of the in-depth interviews conducted by the author explores the respondents' previous experience of company X's online service in general terms. The aim is to find out whether the interviewees had used the online service before and how familiar they were with its basic features. The author set the first and opening question of the in-depth interview as follows: "have you used the online service before? Are you familiar with it as a service?".

The responses show that 57% of respondents had used the online service before, while 43% had not. Four out of seven respondents had used the online service and were familiar with it at the time of the interview. With these responses, the author was able to follow up the interview with the following questions. With the non-respondents, the author ended the interview as they had no user experience of the online service. In figure 4, the results are presented.

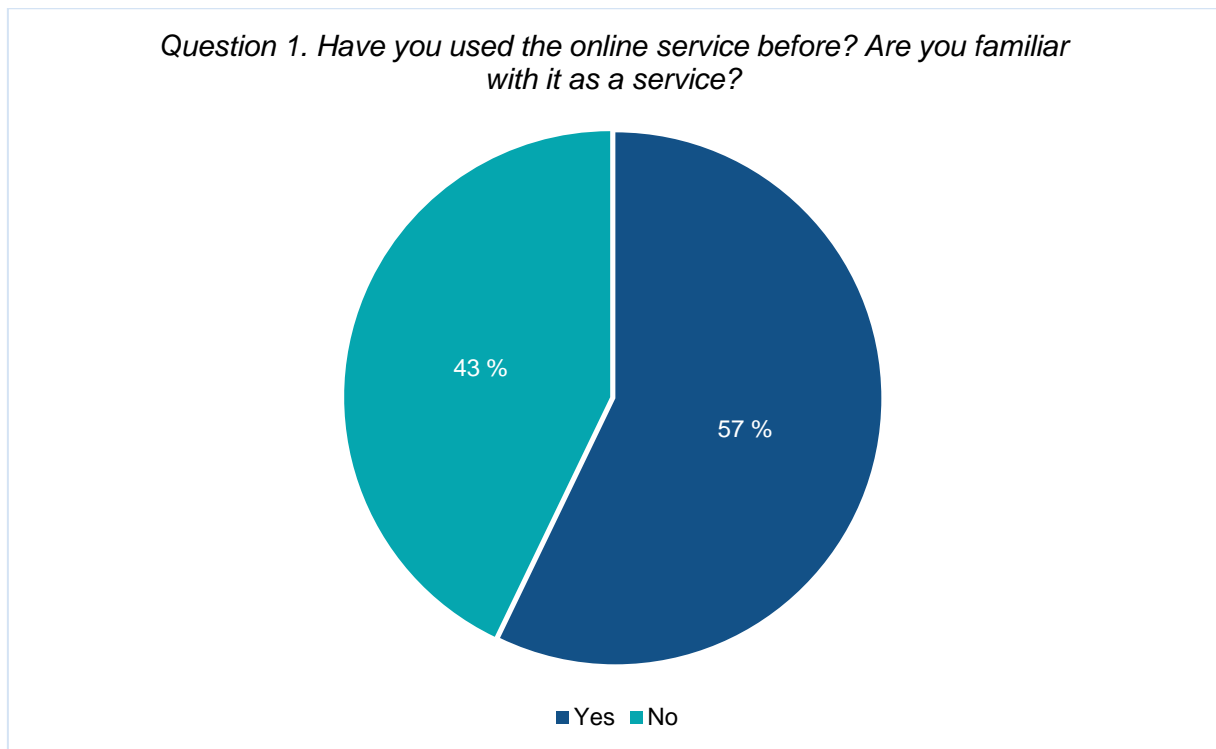


Figure 5. Results on graph, for Q1

The second question of the in-depth interview's was aimed to determine the participants' usage frequency concerning the company's online service. The responses provide valuable information about how regularly participants utilize the service, whether it's infrequent annual usage, monthly usage, weekly usage, or multiple times a week. This information helps to understand the usage patterns of the service among different user groups. The question was presented as "how often do you use our online service?", with following selection options: a) once a year b) once a month c) once a week d) several times a week?

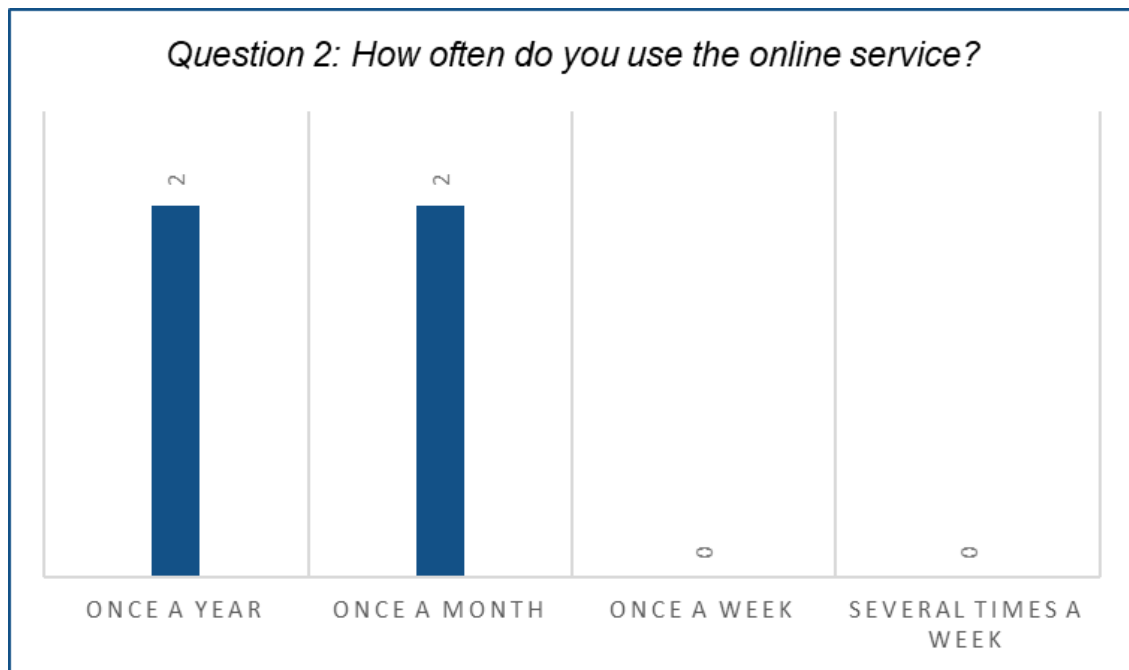


Figure 6. Results on graph, for Q2

The third set of in-depth interview questions opens the possibility for participants to share their general user experiences of using the online service of company X. Respondents are asked to share their opinions, feelings, and perceptions of the service. This question provides an opportunity to obtain a wide range of feedback, whether it is positive experiences, ideas for improvement or possible challenges related to the use of the online service. This information can help the company to improve the quality of its service and better meet the needs of its users. The third question is, more precisely, as follows: could you describe in general terms your experience with the online service?

The user feedback on the online service reveals that the first respondent emphasizes the importance of improving usability, especially for rarely used functions, to enhance the overall user experience. Clear guidance on the homepage to facilitate finding important features is crucial, particularly for generating reports for company accounting purposes. The second respondent strongly supports the online service model but also underscores the significance of telephone customer service and personal guidance. He commends the excellent advice received from company X over the phone, highlighting the clear and efficient handling of matters and professional support amid challenging market conditions. The third respondent initially found the website confusing but received clear instructions and advice from their contact person on navigating the steps to collect invoices. The fourth respondent primarily used the online service for basic activities such as checking emails and retrieving various

reports, expressing a relatively smooth overall experience and an eagerness to explore other features in the future.

The fourth question of the interview question gives an insight into which features and functions of the online service are most used by respondents. Respondents are asked to indicate which features of the online service they use most often, to understand which features are clearly the most popular among respondents who have used the online service. The author has phrased the fourth question as follows: which features of the online service do you usually use?

The first respondent has so far only used the online service mainly to create accounting reports for his own accounting and has not yet used the other functionalities offered by the online service. He mainly uses the online service to monitor and report on certain aspects of his company's accounting. The second respondent's experience with the online service has been to become generally familiar with the different functions of the online service. He has monitored the payment status and credit information of his clients' bills in collection but has not been able to find the necessary information independently. He therefore used the helpline service offered by company X, where the experts were helpful and professional in helping him to find the most appropriate and best options for his situation.

A third respondent has used the online service to report a payment made by his customer to company X. In addition, he has used the online service's messaging function to communicate with company X regarding any ambiguities in his orders. A fourth respondent stated in the interview that he had used the online service to register and manage his new open and unpaid invoices from customers. In figure 7, summary of the acquired results is presented.

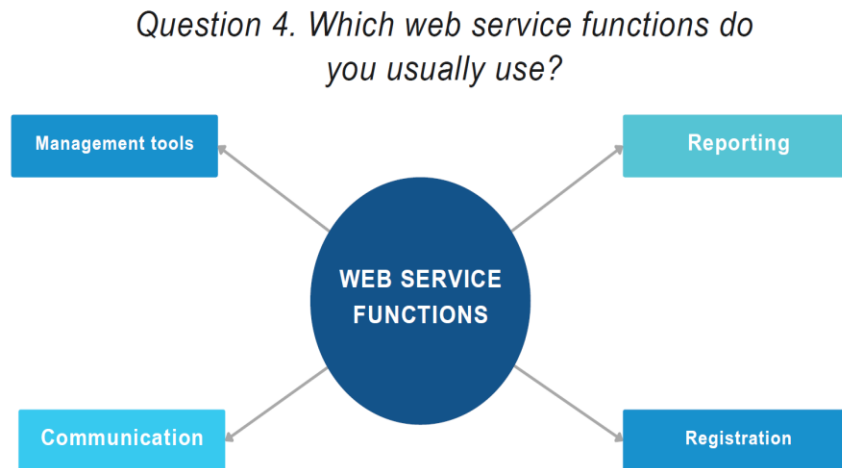


Figure 7. Results for Q4

To go further in the interview, the author next seeks answers to the following question: “how clear do you find the functions of the online service? Which parts do not seem clear or logical?”.

The purpose of this question was to focus on assessing respondent’s perceptions of the clarity of the functions of the online service of company X. Respondents are asked how they perceive the different functions of the service and which parts may seem unclear or illogical. This question provides an opportunity to obtain feedback on challenges and ambiguities experienced by users, which can help to improve the usability and user-friendliness of the online service. Responses may reveal potential areas for improvement and provide insight into which areas need to be improved in terms of clarity and logic.

The first respondent stresses that the most important functions should be placed on the homepage and should be easy to find and select. They find it challenging to use the service, especially because the principles of how the site works are forgotten when the need to use the online service is infrequent. The second respondent's experience of using the online service has not yet developed to a large extent, so he is unable to give more specific feedback on very good or bad experiences. A third respondent mentions that the functionalities of the online service seem quite clear once you get familiar with them and

learn how to use them. However, he pointed out that some points may not be entirely logical or easy to understand at first sight. The fourth respondent describes a previous attempt to enter a customer number into the online service and describes it as challenging. He would have preferred to use his company ID, but for some reason was unable to do so. As a summary it's discovered that respondents felt that the most common tools should be made immediately available on the homepage and the functionalities of the online service should be clarified in general.

The sixth question asks, "can you easily find the information and/or functions you need on the online service?" assesses the respondents' ability to find the information they need and/or perform the functions they want on the online service. The above question aims to assess the usability and user-friendliness of the online service when respondents are searching for information or trying to perform various functions online.

The first respondent says that the first few times they used the service, it took time and effort. Initially, she found herself scrolling back and forth and having to click through several menus before she found the functions she needed. According to another respondent, he has managed to find all the functions he needs and has also received help from his own company staff in using the service. A third respondent mentions that it is easy to find all the functions needed once the user navigates through the service. However, he would like to see the things that need special attention displayed on the home page so that they are not overlooked. A fourth respondent describes that finding the answers and the right function on the online service requires regular browsing and searching on the site, especially due to their limited user experience.

Towards the end of the interview, the author asked the respondents to freely give their answers to the question 7: "In the online service, I especially like that". The first respondent mentions that logging in with their own ID is straightforward but would like to be able to log in with bank IDs or strong electronic authentication to make the process faster and more convenient. He believes that as he gains more experience, he will be better able to assess the strengths of the online service and use it more effectively. Another feature of the online service appreciated by the second respondent is the possibility to log in at any time, including early in the morning. A third respondent highlights the seamless communication with the contact person. He feels that messages are easily sent, and cooperation is efficient. Online communication makes communication easier, and messages are immediately available to the customer service, which makes cooperation efficient and responsive. A fourth respondent

says that various reports are easily available when they need them. Overall results can be identified from figure 8 on the next page.

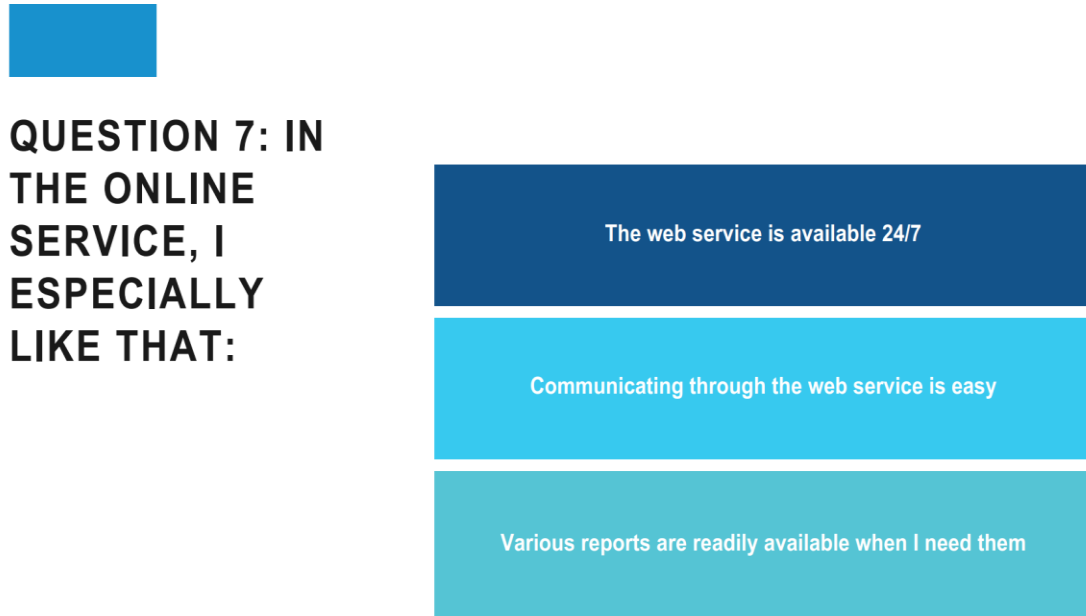


Figure 8. Summary of the results for Q7

The eighth question asked participants to indicate what they did not like about company X's online service. This question is intended to identify any negative experiences that respondents have had when using the service and which may have had a negative impact on their user experience. The author asked the respondents to comment freely on the following question 8, which was worded exactly as follows: "in the online service I do not like that".

The first respondent did not provide any comments on this question. According to the second respondent, they are generally not keen on conducting activities online and prefer traditional methods, such as verbal communication over the phone. This preference arises from the belief that it provides them with a better understanding of their own affairs and enables them to pose questions more easily. The third respondent expressed dissatisfaction with the fact that if their suggestions for improvements are not implemented in the online service based on their wishes, they view it negatively. However, they did not highlight any new issues deviating

from their earlier responses in the interview. Their main concern was the potential lack of genuine consideration for users' needs in the development of the online service.

The fourth respondent initially assumed they could simply attach an unpaid invoice from their customer directly to the online service to transfer it to company X for collection. However, in practice, they found the required steps for completing the task to be challenging, as they had to manually fill in various fields to register the debt collection assignment. They express a desire for a highly automated function to make this process easier and clearer.

The question 9 of the in-depth interview aimed to find out whether the participant has needed to contact customer service while using the online service and how they would overall assess the customer service they received. The first respondent has not had to contact company X's customer service to use the online service. He has dealt with messages he has received on the online service and various requests from company X by e-mail and has received prompt and efficient replies from his contact person. Respondents generally express high satisfaction with customer service. One rates it 9/10, highlighting efficient assistance and thorough guidance. Another values prompt responses and the ability to schedule phone appointments, praising the quick and efficient handling of cases, giving it a 9/10.

The third respondent is also very satisfied with the service. The fourth respondent gives an overall positive rating of 8/10 for the service's functionality and performance. See figure 9 for detailed results. Note figure 9 below to see all results.

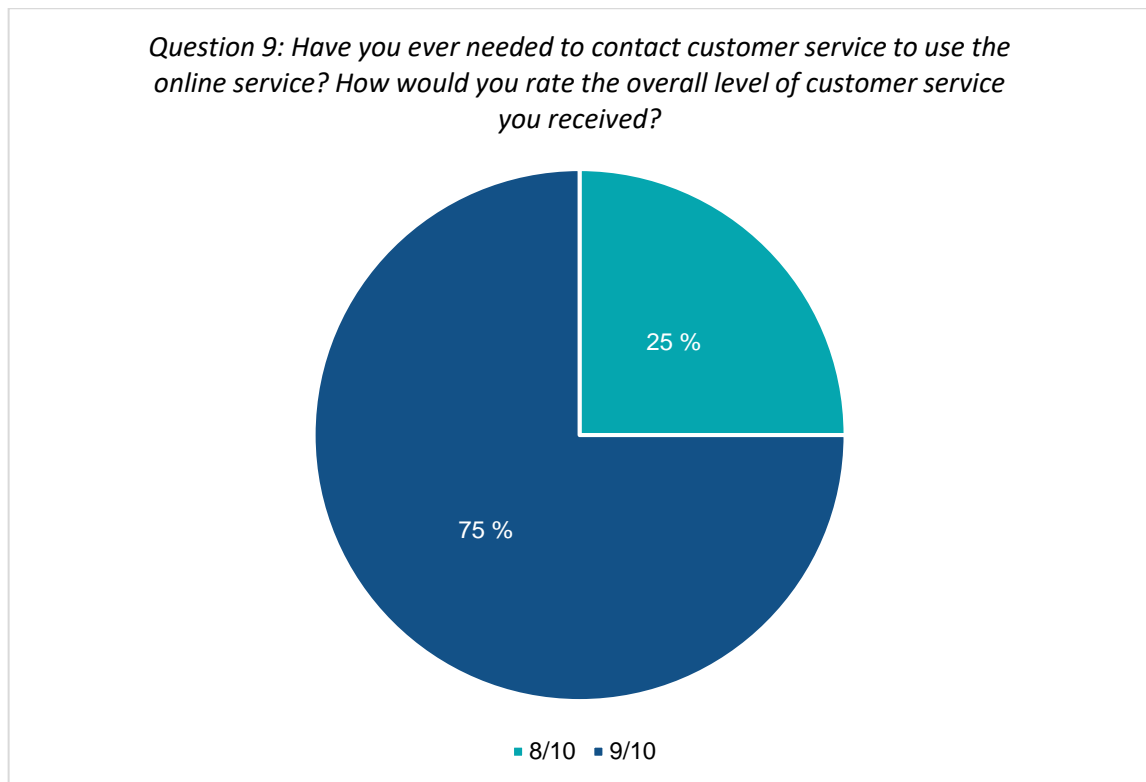


Figure 9. Results on graph, for Q9

With the final question of the interview, the author seeks respondents to provide suggestions for improving the user experience of the online service for future development.

The first respondent suggested that the clarity and accessibility of the website could be improved. He would like to experience faster and more efficient log-in by using online banking credentials or strong electronic authentication. He also wants more options for search functions, in particular the possibility to search for information not only by customer number but also by other identifiers or keywords. However, he admits that, due to his limited user experience, he does not know whether other search criteria already exist that he could choose to use in the online service. According to the second respondent, the layout, menus, and functions of the online service should remain simple and clear in the future to be easily accessible and understandable. She hopes that too many changes will not be made to the service in the future, to avoid having to start all over again in the future.

A third respondent suggests that the charts and diagrams on the homepage of the online service could be removed altogether, preferring instead to show his own cases first, as well as cases that require action by him or other further clarification. He suggested that in future the front page of the site could have separate columns for "active" and "pending" cases, with

a to-do list or similar displayed first on the site, giving him an immediate and clear indication in the form of a "Your action is required" window. He stated that listing and categorizing issues would make it easier to find them on the online service and would make it more efficient to deal with one's own customers. The fourth respondent had no comments on the suggestions for improvement.

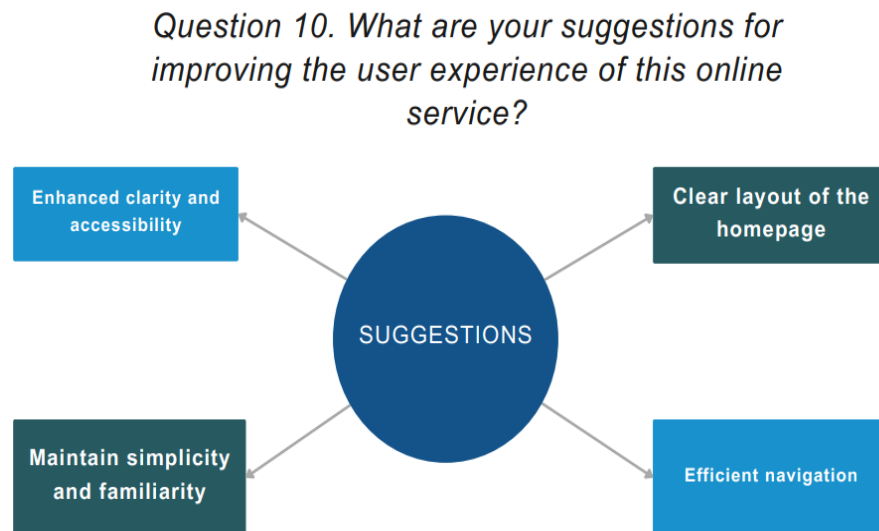


Figure 10. Results on graph, for Q10

4.1.1 Discussion

The in-depth interviews brought forth several significant insights and observations from customers regarding the user experience of company X's online service. Some respondents emphasized the importance of having key features and functions prominently displayed on the homepage to enhance user-friendliness, clarity, and overall usability. The reports tool was identified as a frequently used feature for managing their company's accounting, yet many expressed a desire for improved clarity and accessibility in the layout and menus of the online service.

While participants had prior experience with the online service, a notable portion still preferred telephone assistance, particularly in challenging work situations. The confusion on the homepage and the call for a clearer layout in the online service emerged as common

themes in the responses. Some participants suggested placing essential tools immediately accessible on the homepage and emphasized the need for user-friendly functionality.

Although users reported smooth usage for basic functions such as checking payment delays and obtaining credit recommendations, they also expressed concerns about navigation requiring browsing and searching on the site. Nevertheless, respondents generally succeeded in finding the information they sought, with some requiring more detailed assistance.

Commonly used tools included various reporting functions, notifying the service of customer payments, registering, and managing new assignments or invoices, and communication through the online service. Recommendations from the interviews highlighted the necessity for clearer and more intuitive site structures, with an emphasis on simplifying the homepage and enhancing the accessibility of crucial functions.

5 Recommendations

User interfaces with poor usability can lead users to frustration and perceive the use of the online service as a waste of time, as the author discusses in the theoretical part of usability design for the website. As extensively researched by Jakob Nielsen, in such cases, users often gravitate towards interfaces that better suit their needs (Nielsen, 1994, p. 2-3). The need to investigate the topic of the thesis in the context of company X's online service user experience arises precisely from this fact. Based on the above and after carefully examining the results of in-depth interviews, the author recommends that company X seriously consider improving the structure and functionality of its website.

According to Oulasvirta, the key aspects include understanding user needs, defining requirements, and conducting evaluations in collaboration with users (Oulasvirta, 2003, p. 102). Therefore, the most important emphasis in the author's recommendations is the need to focus on creating more transparent and intuitive website structures. This should prioritize streamlining the homepage and ensuring users' seamless access to essential functions. By enhancing and developing the online service's visual appearance and layout, company X can significantly improve user comfort and increase overall aesthetic appeal. The author also believes that it would make sense for company X to test its website on users to fully understand their needs and influence them in a comprehensive way.

While conducting the research, the author did not collect the ages of the interviewees because it did not seem appropriate when initiating telephone interviews. However, the results show that regarding the use of the online service, respondents' answers were almost evenly divided between those who had used the online service before and those who had no previous user experience. Based on the above, the author wonders whether the respondents' age could still influence why they do not use the online service. For further development, the author recommends that it would be important to select users of different ages as test users to gather comprehensive results. This is based on the following statement by Ritter & Winterbottom: "The ease of use and smooth functionality of a service are now critical in attracting customers. The better a service is designed and the more seamlessly it operates, the more it attracts and retains users." (Ritter & Winterbottom, 2017)

The author argues that implementing such changes directly affects users' willingness and decision to return to using the online service. This effect is particularly emphasized when these visual improvements are combined with optimized ease of use and efficiency, easily accessible with just a few views and clicks. The interaction of visually pleasing interface with enhanced usability and efficiency can create a positive and memorable user experience, increasing the likelihood of customer loyalty and repeat participation.

Ultimately, the recommendations focus on structural changes, emphasizing the importance of a comprehensive approach to website design that covers both visual and functional aspects. It is crucial to deeply understand users' perspectives on using the online service. By aligning the aesthetics of the site with user-friendly functionality, company X can create a more appealing online environment that resonates with users and encourages ongoing interaction.

6 Contributions to the theory and practice

The significance of the thesis is emphasized by considering that the company X, directly benefits from the research results. The company's operational department can use the acquired information and recommendations to improve its processes and personnel resources related to online service usage. This can lead to more efficient work and optimal resource utilization, positively impacting the company's daily operations and productivity. Thus, the thesis not only generates theoretical knowledge about usability and user experience but also has an immediate operational and financial impact on company X's business.

The results can serve as a practical tool for business development and improving customer service, adding value to both the company and its clients. Additionally, through the research, company X can expect an increase in independent online service usage by its corporate customers, which was the original goal of the thesis. Improved usability and user experience can encourage business clients to actively and independently use the online service, leading to increased customer satisfaction as they perceive seamless and efficient management of their receivables on the company's online service.

It is noteworthy that the results of this thesis can also serve as practical guidelines for other companies aiming to improve the usability and user experience of their online services. The research can identify best practices and recommendations, guiding companies toward better customer service and business efficiency. In summary, the significance of the thesis is evident as a business, competitive, and practical contribution that can benefit the business world.

The current situation of the commissioning company highlights a clear need to investigate how the online service can be improved to motivate a larger percentage of customers to use it. Understanding the decision-making processes of unused customers, which prevent them from adopting available services despite technical capabilities and needs, is highly intriguing. The key problem is how the commissioning company can motivate a higher percentage of its customers to adopt the online service developed for them. This is important from both customer satisfaction and participation perspectives, as well as for the efficiency and workload management of the company X's staff.

According to the author, the results obtained also have important implications for the theoretical development of the research field. The usefulness of the results lies in their potential to add to and contribute to existing knowledge of web design and, in particular, to the understanding of customer behavior and preferences.

The results of the study suggest that further research on customer-centred design of web services is worthwhile. The study revealed insights that could be explored to improve customer satisfaction with web services and to aim for effective solutions. The results of this thesis will contribute to company X's future understanding of how to develop an online service with the user experience in mind.

The benefits of the results are manifold from a theoretical point of view. First, they contribute to the theoretical basis of web design by shedding light on elements relevant to customers.

Second, they serve as a motivating factor for future research, guiding the investigation of those aspects of web design that influence user perceptions and engagement. Ultimately, the theoretical significance of the results goes beyond the scope of this thesis and provides a broader basis for advancing knowledge in the field of web design.

7 Conclusion

This thesis was conducted with the aim of investigating the usability and user experience of company X's online service from the perspective of customers using the service. The goal was to identify the challenges faced by customers using company X's online service and provide concrete improvement suggestions to support the further development of the online service. The research questions aimed to explore and evaluate how users perceive the usability of the online service, identify problems with the online service, and propose ways to improve the online service for enhanced usability.

To address the research questions, qualitative research methods were employed, focusing on one of the online services used by the client through interviews with customers using the service. When using Nielsen's definition of usability as a support, it is evident that key usability attributes for the client are learnability and efficiency. To improve learnability, potential additional training for using the services and a well-planned process for introducing new services to customers could be considered. It is essential to listen to the users of the services to better understand their needs and preferences.

The initiation of the research posed challenges, as the topic was unfamiliar to the author, and mastering the terminology took time. There was a perceived time constraint in conducting information retrieval and compiling the material. Evaluating and going through search results, especially, proved to be a challenging task. The vast majority of the collected material for the research consisted of previous publications, studies, and research articles.

The chosen data collection method for the research proved to be successful. Deep interviews conducted over the phone allowed for gathering the most essential insights and experiences of the commissioner's customers regarding the usability and user experience of the online service. The collected data provided clear answers to all research questions, highlighting the need and desire for simplifying the functions and presenting them clearly on the homepage of the online service.

Usability and user experience as research topics were intriguing, and the author found it interesting to observe both similar experiences shared by interview respondents and various differing suggestions for improvement. Overall, the findings and recommendations from this research can serve as valuable insights for the company X, to enhance the usability and user experience of its online service, making it more user-friendly and efficient.

References

- Ahonen, V. (n.d.) *UX-suunnittelu on paljon enemmän kuin moderni ulkoasu*. Idention blogi. <https://identio.fi/blogi/ux-suunnittelu-on-enemman-kuin-moderni-ulkoasu/>
- Alam, M., Rehman, S., & Ullah, Z. (2020). *User Satisfaction and Website Quality*. *International Journal of Human–Computer Interaction*, 36(15), 1415–1429. Retrieved January 11th, 2024 from <https://doi.org/10.1080/10447318.2019.1578960>
- Aluehallintovirasto. (n.d.). *Saavutettavuuden lait ja standardit*. Saavutettavuusvaatimukset. <https://www.saavutettavuusvaatimukset.fi/digipalvelulain-vaatimukset/>
- Albert, W. & Tullis, T. (2013). *Measuring the User Experience: Collecting, Analyzing, and Presenting Usability Metrics*.
- Bevan, N., Carter, J., Harker, S. (2015). *ISO 9241-11 Revised: What Have We Learnt About Usability Since 1998?*. In: Kurosu, M. (eds) *Human-Computer Interaction: Design and Evaluation*. HCI 2015. *Lecture Notes in Computer Science()*, vol 9169. Springer, Cham. https://doi.org/10.1007/978-3-319-20901-2_13
- Bhandari, P. (2020, June 19). *What is Qualitative Research? Methods & Examples*. Scribbr. Retrieved January 14th, 2024, from <https://www.scribbr.com/methodology/qualitativeresearch/>
- de, V. N. (2020). *User experience foundations*. BCS Learning & Development Limited.
- DeRome, J. (2022, August 12). *What is user experience? Insights that drive innovation*. Retrieved January 14th, 2024 from <https://www.usertesting.com/blog/what-is-user-experience>
- Fitzgerald, A. (2020, October 13). *Usability vs. User Experience: What's the Difference?* <https://blog.hubspot.com/website/usability-vs-user-experience>
- Forlizzi, J., & Battarbee, K. (2004). *Understanding experience in interactive systems*. <https://doi.org/10.1145/1013115.1013152>

Hassenzahl, M. (2005). *The Thing and I: Understanding the Relationship Between User and Product*. Funology, 31–42.

https://www.researchgate.net/publication/226420570_The_Thing_and_I_Understanding_the_Relationship_Between_User_and_Product

Hassenzahl, M., Burmester, M., & Koller, F. (2021). User Experience Is All There Is. *I-com*, 20(3), 197-213. <https://doi.org/10.1515/icom-2021-0034>

Heikkilä, K. (2021, April 3). *UI- ja UX-suunnittelu – mitä eroa, mitä väliä?* Visio Designin blogi. Retrieved February 12th, 2024 from <https://visiodesign.fi/ui-ja-ux-suunnittelu-mita-eroa-mita-valia/>

ISO. (2023). *About us*. ISO. <https://www.iso.org/about-us.html>

ISO 9241-210. (2010). *Ergonomics of human-system interaction. Osa 210: Humancentred design for interactive systems*. Switzerland: International Organization for Standardization (ISO)

ISO 9241—210:2019 (en) (2019). International Organization for Standardization. <https://www.iso.org/obp/ui/#iso:std:iso:9241:-210:ed-2:v1:en>

Jokela, T. M. (2010). *Navigoi oikein käytettävyyden vesillä: Opas käytettävyysohjattuun vuorovaikutussuunnitteluun*.

Jussila, S. (2022, September 5). *Digiloikka hoidettu, mutta missä viipyy tuottavuusloikka? Ratkaisu voi löytyä digitaalisten palveluiden radikaalista yksinkertaistamisesta*. <https://kumppanisisallot.fi/tivi/efecte/digiloikka-hoidettu-mutta-missa-viipyy-tuottavuusloikka-ratkaisu-voi-loytya-digitaalisten-palveluiden-radikaalista-yksinkertaistamisesta/>

Koirikivi, S. (2022, May 10). *Käyttäjäkokemus verkkosivujen suunnittelussa*. Design Inspis Oy:n blogi. <https://designinspis.fi/blogi/kayttajakokemus-verkkosivujen-suunnittelussa/>

Krug, S. (2006). *Älä pakota minua ajattelemaan: Tervettä järkeä verkkosuunnitteluun*. Jyväskylä: Gummerus Kirjapaino Oy.

Kuutti, W. (2003). *Käytettävyys, suunnittelu ja arviointi*. Helsinki: Talentum Media.

Lee, Y. (2019). *The importance of website performance and how to improve it*. UX Collective. <https://uxdesign.cc/the-importance-of-website-performance-and-how-to-improve-it-d41c1d9cd7c3>

Matihaldi, K. & Sinisalo, J. (2020, June 3). *Käyttäjäkokeemus on ohjelmiston tärkein ominaisuus*. Oulun ammattikorkeakoulun tutkimus- ja kehitystyön julkaisut 38. <http://urn.fi/urn:nbn:fi-fe2020052639162>

Mifsud, J. (2018, June 23). *Usability Metrics - A Guide To Quantify The Usability Of Any System - Usability Geek*. Usability Geek. <https://usabilitygeek.com/usability-metrics-a-guide-to-quantify-system-usability/>

Morville, P. (2004, June 21). *User Experience Design*. Semantic Studios. https://semanticstudios.com/user_experience_design/

Nichols, K. P., & Chesnut, D. (2014). *Ux for dummies*. John Wiley & Sons, Incorporated.

Nielsen, J. (1994, April 24). *10 Heuristics for User Interface Design*. Nielsen Norman Group. Retrieved January 11th, 2024 from <https://www.nngroup.com/articles/ten-usability-heuristics/>

Nielsen, J. (2012). Nielsen Norman Group. <https://www.nngroup.com/people/jakob-nielsen/>

Nielsen, J. (2012, January 3). *Usability 101: Introduction to usability*. Nielsen Norman Group. <https://www.nngroup.com/articles/usability-101-introduction-to-usability/>

Nielsen, J. (1994). *Usability Engineering*. London: Academic Press.

Nielsen, J., & Loranger, H. (2021). *Prioritizing Web Usability*.

Norman, D., & Nielsen, J. (1998, August 8). *The Definition of User Experience (UX)*. Nielsen Norman Group. <https://www.nngroup.com/articles/definition-user-experience/>

Oulasvirta, A. (2011). *Ihmisen ja tietokoneen vuorovaikutus*. Gaudeamus: Helsinki University Press.

Parkkinen, J. (2002). *Hyvään verkkopalveluun: Käytettävyysopas verkkoviestijöille*. Helsinki: Infoviestintä.

Ritter, M., & Winterbottom, C. (2017). *UX for the Web*.

Stevens, E. (2019). *The History of UX Design – A Definitive Timeline*. Retrieved January 14th, 2024 from

<https://web.archive.org/web/20191129015209/https://careerfoundry.com/en/blog/ux-design/the-fascinating-history-of-ux-design-a-definitive-timeline/>

Tecinspire Oy 5.7.2022. *Käyttäjäkokemus ohjelmistojen suunnittelussa*. Tecinspire Oy:n blogi. Retrieved February 11th, 2024 from <https://tecinspire.com/kayttajakokemus-ohjelmistojen-suunnittelussa/>

Usability.gov. (2019). *Improving the User Experience. Information Architecture Basics*. Usability.gov. <https://www.usability.gov/what-and-why/information-architecture.html>

Vieira, T. (2020, January 26). *A brief history of UX design and its evolution*. TNW | Syndication. <https://thenextweb.com/news/a-brief-history-of-ux-design-and-its-evolution>

Wiio, A. (2004). *Käyttäjätavallisen sovelluksen suunnittelu*. Helsinki: Edita Prima Oy.

World Wide Web Consortium. (2018). *Accessibility*. <https://www.w3.org/standards/webdesign/accessibility>

Appendix 1. In-depth interview questions

1. Have you used the online service before? Are you familiar with it?
2. How often do you use our online service? Choose from the following options:

A. once a year B) once a month C) once a week D) several times a week
3. Could you please describe your experience with our online service in general terms?
4. Which features of the online service do you usually use?
5. How clear do you find the functions of the online service? Which parts do not seem clear or logical?
6. Do you find it easy to find the information and/or functions you need?
7. What I especially like about the online service is the fact that:
8. What I do not like about the online service is the fact that:
9. Have you ever needed to contact the customer service to use the online service?
10. What are your suggestions for improving the user experience of this online service?

Appendix 2: Interview schedule

Schedules of interviews conducted for this thesis.

Interviewee	Date	Time	Duration
Interview 1	25.1.2024	9:51-10:21	30 minutes
Interview 2	25.1.2024	12:30-13:00	30 minutes
Interview 3	29.1.2024	10:00-10:30	30 minutes
Interview 4	29.1.2024	12:30-13:00	30 minutes

Appendix 3: Data management plan

The author, the client and the thesis supervisor from Häme University of Applied Sciences have signed a thesis agreement. The thesis material is collected through structured customer interviews. The interviews were conducted by mobile phone. The interviews were documented in notes. The author shared the notes only with the interviewees themselves and, if necessary, with the thesis supervisor. During the thesis process, the material is stored in the cloud service of the commissioning company or school. The notes will be stored on the author's computer and memory stick for one year after publication of the thesis, after which the data will be destroyed. The research will be described in the thesis in such a way that the interviewee remains anonymous. The interviewees gave their verbal consent to the collection and storage of data for research purposes. In this thesis, the data are presented in such a way that they cannot be linked to a specific individual.