Olli Peltola

DIGITAL TRANSFORMATION THROUGH E-COMMERCE IN FINNISH SMALL AND MEDIUM-SIZED ENTERPRISES: A MULTI-CASE STUDY

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Digitaalinen transformaatio verkkokaupan kautta on ollut suosittu tutkimusaihe jo yli vuosikymmenen ajan. Viimeaikainen Covid-19-pandemia vauhditti monien yritysten verkkokauppakehitystä, sillä ne joutuivat siirtymään verkkoon pysyäkseen pinnalla pandemian aiheuttamien rajoitusten aikana. Mutta mitä yhteistä on onnistuneissa verkkokauppaprojekteissa, ja miten teknologian hyväksymisen teoreettiset viitekehykset ovat linjassa niiden kanssa? Kirjallisuuskatsauksessa tarkasteltiin kolmea yleisintä teknologian hyväksymisen mallia ja tunnistettiin tärkeimmät tekijät, jotka vaikuttavat teknologian omaksumiseen. Kirjallisuuskatsauksen lisäksi haastateltiin seitsemän suomalaista yritystä, jotka ovat hiljattain siirtyneet verkkokauppaan. Empiirisessä osassa tunnistettiin elementtejä, jotka vaikuttivat verkkokauppaprojektien onnistumiseen, ja näitä elementtejä verrattiin teoreettisessa vaiheessa löydettyihin elementteihin. Tulosten perusteella haastatteluista tunnistetut elementit ovat hyvin linjassa teoreettisten viitekehysten teemojen kanssa. Esimerkiksi suorituskyvyn ja vaativuuden odotusarvot olivat esillä vahvasti jokaisessa verkkokauppaprojektissa, ja haasteita tuottivat yritysten muun liiketoiminnan linjaaminen yhteen verkkokauppaliiketoiminnan kanssa.

Avainsanat: Digitaalinen transformaatio, verkkokauppa, teknologian hyväksymismallit

ABSTRACT

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Digital transformation through e-commerce has been a popular topic for over a decade now. The recent Covid-19 pandemic accelerated the e-commerce development of many companies, as they were forced to go online to stay afloat during the restrictions caused by the pandemic. But what are the commonalities in successful e-commerce projects, and how are the theoretical frameworks of technology adaptation aligned with them? The literature review examined the three most common models of technology adoption and identified the most important factors that affect technology adoption. In addition to the literature review, seven interviews were conducted with Finnish companies that have recently made the transition to e-commerce. In the empirical part, elements that influenced the success of the e-commerce projects were identified, and these elements were compared with the elements found in the theoretical phase. Based on the results, the elements identified from the interviews are well aligned with the themes of the theoretical frameworks. For example, the expectations of performance and effort were strongly present in every e-commerce project, and challenges were brought about by aligning the companies' other business with the e-commerce business.

Keywords: Digital Transformation, e-commerce, technology acceptance model

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1 INTRODUCTION

1.1 Background & motivation

The Covid-19 pandemic reshaped the attitudes within companies about how technology can and should be used to align with their businesses. During the pandemic, especially small and medium-sized enterprises (SME's), were struggling with how to adapt to this new business climate. Companies who had previously relied on brick-and-mortar stores and personal business connections were forced to go online, to find new ways for their revenue, and to grow their business. The drop of revenue caused by the pandemic had in some cases been so deep, that the money flow literally hit a brick wall. To find new revenue streams companies turned first into e-commerce and online business. This kind of situation was new of its kind, as previously during the digital era companies did not have this kind of "forced entry" to digitalize their businesses. The emphasis on remote work due to Covid-19 restrictions was another new challenge for companies undergoing digital transformation. This new business climate accentuated the importance of the IT teams of companies, 3rd party developers and especially the personal connections between traditional companies and IT-companies/developers. The purpose of this study is to find out the defining elements of successful digital transformations, especially in the case of launching an e-commerce store, and the commonalities and differences between different companies' strategies, and to see how theory of this matter applies to the reality.

1.2 Research problem

The research questions for this thesis are as follows:
Q1. What are the commonalities in successful e-commerce projects?
Q2. How are the theoretical frameworks aligned with the factors defining a successful e-commerce launch?

The key point of this thesis is to identify elements in e-commerce strategies that enhance the user acceptance of the new service, and therefore increase their success. For this purpose, I will be using several theoretical frameworks, such as the "Unified theory of acceptance and use of technology (UTAUT 1 & 2)" and

the "Innovation Diffusion Theory", to see how theory applies to practice in this matter. First, I will be introducing the concept of UTAUT, Innovation Diffusion Theory and Technology Acceptance Model in detail, to identify the practical elements of these frameworks. The goal of this is to provide readers with a thorough understanding of the frameworks, because after the initial literature review, I will be using the empiric data of companies' real e-commerce stories to support or oppose the theoretical models. I will be focusing mostly on the companies' presuppositions about e-commerce, the implementation phase and resources, and the aftermath of the launch. What are the most imperative things to consider when designing a new e-commerce store? What are the most common approaches to digital transformation & e-commerce? Are there any big differences in successful digital transformation strategies?

The study will be conducted as a qualitative study done by conducting 7 semi-structured interviews of companies who recently launched their first e-commerce store and includes a literature review of the research topic to see how theory and practice differ. To find the companies for interviews, I used the database of my former employer, Business Finland, with their permission to identify potential companies to interview. That database consisted of thousands of government-funded projects where the key defining factors were that they were all affected by the pandemic, and that all those companies had to innovate something new in order to battle it. However, although I had this vast database to identify potential companies, it proved difficult to get them to answer, and to arrange interviews with them. Therefore, I also used the power of my network (Facebook & LinkedIn) to seek out potential interviewees. Then I started the multi-case study by identifying and arranging the interviews with the companies, and presented their e-commerce strategies in this thesis, identified the key elements that made those projects work and conducted a thematic analysis on the results. My goal was also to find out a few projects that **didn't** work, to give the readers an understanding of what kind of elements hinder digital transformation in e-commerce. All the interviews will be anonymized to protect the privacy of those companies.

The desired results of this study would be to give a short summary of the literature regarding digital transformation in e-commerce, and to use the empiric data available to support those statements. Are there any common elements of successful digital transformation strategies in e-commerce? Which are the problem areas? How does the attitude & commitment of the company in question affect the digital transformation? To put it briefly, the first part of the thesis (the literature review), aims to explain the theories behind digital transformations. The second part (the empirical research) will map out the commonalities and differences in companies' digital transformation strategies, and the last part (discussion), will analyze how theoretical frameworks of technology acceptance models can be used to explain changes in real business stories.

1.3 Structure of the thesis

The structure of the thesis is as follows: In section 1 I will go through the background and motivation for the subject and introduce the research problems and questions. In section 2 I will introduce the main concepts of the thesis, those being digital transformation, e-commerce, and how the Covid-19 pandemic accelerated those. Section 3 will be the literature review, where I will introduce earlier research about the topic and conduct a literature review about the theoretical frameworks of technology acceptance, which will also work as the literature basis for this thesis. The theories include Innovation Diffusion Theory, Technology Acceptance Model, and the Unified Theory of Acceptance and Use of Technology. After the literature review part, section 4 will have the empirical research and results, it will start by going through the methodology behind the research: the research method, the data collection method, and the analysis method used. After that, the results of the interviews are introduced and grouped under four main themes: presuppositions, initialization, resources and the aftermath of the projects. After the empirical research part, section 5 will be summarizing the results and trying to align them with the theory, to see if the literature supports my findings. Section 6 will be a summary of the thesis, and finally section 7 will include the references used in this thesis. After the references, there are two appendix sections that include the interview results and the interview questions used.

2 CONCEPTUAL BASIS – DIGITAL TRANSFORMATION, E-COMMERCE, AND THE PANDEMIC

In this chapter I will shortly go through the main concepts of the thesis. The purpose of this is to introduce the current status and qualities of digital transformation, e-commerce and the accelerating impact of the pandemic.

2.1 Digital Transformation

Digital Transformation (sometimes abbreviated as DT/DX) refers to the adaptation of disruptive technologies to increase productivity, value creation, and social welfare **(**Ebert & Duarte, 2018**).** Digital transformation has become important during recent years, as companies in almost all industries are experimenting with different digital technologies to get the most of them. Digital technologies are shaping the business environment and are influencing new organizational changes and patterns of coordination within and across firms (Bharadwaj et al., 2013). Digital transformation has also become an important topic in strategic IS research as well as for practitioners (Vial, 2019). According to a MIT Sloan research report 2013, 78% of its respondents (executives and managers from a wide range of industries) thought that achieving digital transformation will become critical to their organizations during the next two years, and 63% thought that the pace of technological change in their organizations was too slow (Fitzgerald, 2014). These digital transformations require practices in companies to govern the digital transformation, and the entire company needs to work in unison in order to do a successful digital transformation. It is imperative that a company formulates a digital transformation strategy, as it serves as a central concept to integrate the entire coordination, prioritization and implementation of digital transformations within a company (Matt et al, 2015)**.** According to Matt et al (2015), digital transformation strategies have four elements in common regardless of the industry or company; these elements are *use of technologies, changes in value creation, structural changes,* and *financial aspects* (Figure 1).

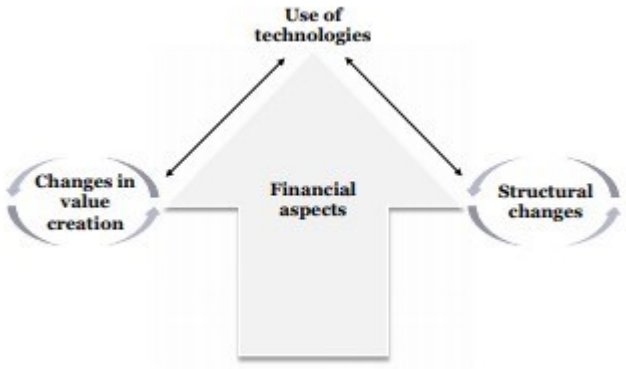

Figure 1 - Elements of digital transformation framework (Matt et al, 2015).

Aside from strategy, other important parts for a successful digital transformation are technology and organizational changes for structure, processes and culture (Vial, 2019). According to Vial (2019), these parts are necessary to generate new paths for value creation, but currently we are lacking a complete understanding for this phenomenon as well as its implications at multiple levels of analysis.

As digital technologies become more interlinked and connected, the value they bring to a company increases as well. Digital technologies can provide a company with more information, computing, communication, and connectivity, and by doing so, they enable new forms of cooperation amongst distributed networks of diversified actors (Vial, 2019). In his research, Vial (2019) concluded that digital transformation can be defined as "*a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies*". Companies that have gone through a digital transformation are more adaptive to any possible disruptions in the markets, such as the Covid-19 pandemic.

This change in the business climate has driven companies to try new methods to conduct their businesses, most notably to transform existing brick-and-mortar operations into digital/online operations. Especially for smaller companies, this kind of transformation will require skills and resources that they have not considered before and is not as easy as it is for large enterprises. This problem could be solved by adopting a "learning culture" within the company, by receiving external governmental funding to aid the development, or by collaborating with other institutions to realize the digital transformation (Ulas, 2019).

2.2 E-commerce

E-commerce (or online shopping) had been growing in popularity for over a decade even before the pandemic hit the world in 2020. An e-commerce store is just like a normal store, but it's located in the world wide web, and customers can use it to buy products, services, or content online. E-commerce is divided

into two main categories: business-to-business (B2B) and business-to-consumer (B2C), but there exists also a third category, consumer-to-consumer (C2C). Having a proper e-commerce store is vital for companies these days, especially after the pandemic, and marketing and media play a vital role in growing customer awareness about the different e-commerce stores available. The richer the media around a business, the more attractive it is to customers (Maity & Dass, 2014). Traditionally (in the past) businesses and consumers have thought that they needed to get "the feel of the product" before making a purchase decision, and that it could not work through the internet, but that has been proven wrong. In Finland, there exists a Consumer Protection Act that guarantees all online purchases to have a fortnight return and exchange policy, which has encouraged customers to do more e-commerce shopping. E-commerce is a booming business that has been growing steadily for over a decade and setting up a store is now easier than ever. Traditional brick-and-mortar stores still have their charm and face-to-face interactions offer customers a personal focus that many customers desire, but e-commerce is catching up. The future of e-commerce might be in a combination of e-commerce and brick-and-mortar elements, using 3D-technologies, Virtual/Artificial Reality and other new technologies to provide customers with the best of both worlds. Using mobile devices for online shopping has been becoming more popular, and some researchers have titled it "m-commerce", stating that the difference between e-commerce and m-commerce is portability and ubiquity (Maity & Dass, 2014).

2.3 Pandemic world

In 2020, the worldwide Covid-19 pandemic temporarily closed many businesses, forced people to work remotely, and compelled businesses to search for alternative business models to adapt to this new pandemic world. The first step for those without an existing online presence was to launch their e-commerce store, align it with marketing and hope that the revenue would start coming in. The uncertainty caused by this pandemic was the defining factor for many companies to pursue an e-commerce store. Many companies also chose to close off or restrict their business to guard employee health instead of waiting for government restrictions on how to act.

The first impact that Covid-19 had on businesses worldwide was the sudden drop in both aggregate demand and supply (Seetharaman, 2020). As businesses and industries worldwide were forced to shut down, this resulted in a sharp decline in supply, and as consumers stayed indoors and investors cautious, the demand declined as well. The decrease in demand and increasing worry about employee health concerns was the main reason that drove many small businesses to close. Covid-19 was especially tough on small companies, as many of them could not afford to shut their businesses even for a few weeks, and therefore were forced to go bankrupt. A study by Bartik et al (2020), found out that in the US, a staggering 43% of businesses were temporarily closed by July and employment had fallen 40%, directly because of Covid-19. The Organization

for Economic Co-operation and Development has predicted that the world's GDP is projected to fall between 7 and 9 percent because of the pandemic (Soto-Acosta, 2020). These statistics show that the result of the pandemic on the world can be severe.

The Covid-19 pandemic has had an impact on the world as well. During the pandemic, between December 2019 and May 2020, Internet traffic had grown 60%, and videoconference traffic has increased 120% (Soto-Acosta, 2020). However grim the impact of Covid-19 might seem on the world and especially small businesses, it also presented businesses and consumers with new opportunities. Videoconference companies like Zoom have had a drastic increase in their business and are struggling to adapt to the sheer number of unaccustomed users. Other industries that grew rapidly during the Covid-19 pandemic were electronic learning platforms such as Coursera and other similar platforms offered by universities worldwide. When people stay at home more, they consume certain things more as well. It is important to point out that digital transformation during the pandemic does not mean that companies must abandon their old business models in search of new ones, but instead they need to complement their existing traditional business models with digital transformation projects **(Soto-Acosta, 2020)**. Covid-19 was driving the digital transformation trend to become more efficient, safe, and to allow companies to keep up their revenues during the decline of physical visits caused by the pandemic.

The impact that Covid-19 had on businesses also differed depending on the industry of the company. The "essential businesses" were allowed to remain open, but some other businesses were deemed not essential and required to close. It should also be noted that not all industries could send their employees to remote work. Maybe the most vulnerable industry was the restaurant industry, as it cannot send its employees to remote work, and must have a location where the chefs are preparing the food. One option for the restaurant industry to stay open is to rely on take away services, and one of the most prevalent digital transformation trends caused by Covid-19 is the "take-away trend", where restaurant owners are expanding their business to include take-away services. The survival rate of industries and businesses also varies according to the assumed length of the lockdown phase. For example, the restaurant industry in the U.S. believed that if the crisis lasts 1 month, they have a 75% rate of survival, but if the crisis length would extend to four months, the survival rate would drop to 29%, and with a six-month crisis it would drop to 19% (Bartik et al., 2020). The tourism industry is another one that is vulnerable to the crisis and reports a low survival rate (Table 1). The study by Bartik et al. (2020), also found out that a 4-month crisis would lead to 32.7 **million** job losses, and a 6-month crisis would mean that 35.1 **million** jobs are lost.

Table 1 - Expectations about remaining open in December 2020 under different hypothetical durations of the COVID crisis (Bartik et al., 2020)

Industry	N	1 month	4 months	6 months

Retailers (except grocery)	490	68%	35%	34%
Banking/finance	148	78%	61%	60%
Tourism	383	63%	50%	25%
Restaurant	163	74%	29%	19%
Health care	395	78%	47%	35%
Construction	383	72%	43%	45%
Arts & entertainment	281	66%	45%	35%

The study by Bartik et al., was conducted in July 2020, when the outcome of the pandemic was still uncertain. Now in 2022 we are still trying to calculate the results of the pandemic, but what is certain is that it hit small and medium sized companies the hardest. In Finland, many small companies had to restrict their business drastically, and some had to shut down for weeks. Most small companies could not handle this kind of loss of revenue and would face bankruptcy if no other alternatives were to be found. This shows that small businesses need external aid to avoid going bust, and that help could come from the government. Finland's own Business Finland came to the aid for small and medium-sized companies in the form of 10 000/100 000€ funds for SMEs to maintain their businesses by finding alternative sources of income by digital transformation. This helped many companies to stay afloat during the most difficult months of the pandemic. The intention of this funding was not to cover Covid-related revenue losses, but to give companies the possibility to innovate new ways for their business, which essentially means that the purpose for that fund was to *enhance digital transformation.* The funding could also not be used directly to launch a new e-commerce store, but it could be used to cover planning and strategy costs. From the empirical research later, we can see that the thorough development of an e-commerce strategy prior to development was crucial in the success of the new e-commerce store.

As new technologies make it relatively simple and straightforward to put new ideas into practice, companies need to master the *art of rapid experimentation* (Rogers, 2016), which was made possible by this funding. Many companies took heed of this opportunity and started to innovate new, alternative business models for their business. Some of the most prevalent projects had to do with finding proper ways to do remote work, to replace brick-and-mortar operations with digital operations (such as take-away for restaurants, planning e-commerce operations, using customer data and AI to map out alternative revenue sources, etc.). Most of these projects have had a positive impact on the companies, and it was great to see that even during difficult times, companies and entrepreneurs possess the ability to innovate.

3 LITERATURE REVIEW - Theoretical Framework

Although Covid-19 accelerated the need for digital transformation and e-commerce development within businesses, other elements affect the adaptation of new technologies as well. In this chapter I will explore the literature and research behind the most common theoretical frameworks related to the adoption of technology. This literature review provides us with a theoretical framework to compare the empirical research data with. The purpose of a literature review is quite straight-forward, it is to educate readers and oneself in the topic area and to understand the literature behind it before shaping an argument or justification (Danson & Arshad, 2014). Bruce (1994) describes the literature review as "an important chapter in the thesis, where its purpose is to provide the background to and justification for the research undertaken". For this thesis, I will conduct a traditional literature review. Traditional literature review can be used to "refine, focus and shape research questions as well as developing theoretical and conceptual frameworks" (Ryan et al., 2007). The source material for the literature review was collected from several scientific databases. The main database being Google Scholar, and the secondary database being the University of Jyväskylä database which includes most research conducted in the University of Jyväskylä. A few other databases were also used, such as IEEE Xplore and the Directory of Open Access Journals (DOAJ). For the keywords, I combined a few keywords using the AND-function, and the keywords being "UTAUT", "TAM", "Innovation Diffusion Theory" combined with "e-commerce". The keywords were also used in Finnish, to find source material from the University of Jyväskylä database. Combining those keywords for searches provided a plethora of source material. The results were chosen mainly from studies that had a strong focus on e-commerce.

3.1 Earlier research

Most of the earlier research in this field has laid foundations on digital transformation strategies, but what they are missing is the identification and concretization of common elements in successful digital transformations (Matt et. al. 2015). Regarding this thesis, Matt et al. (2015) also points out that: "empirical insights could help comparing digital transformation strategies across different industries to assess commonalities as well as differences". This statement is perfectly in alignment with the purpose of my thesis, as I would be using the empirical data of digital transformation & e-commerce strategies in different companies in order to identify the commonalities as well as differences. Another thing that earlier research has suggested as a potential future research opportunity is whether successful digital transformation patterns of B2C companies differ from those of B2B companies. Earlier research also suggests that future research should analyze the necessity of a dedicated Chief Digital

officer (CDO) & Chief Information Officer (CIO), and to provide recommendations for how these two roles should work together. In this study, I will shortly address the differences between B2C and B2B strategies but will not be delving into the necessity of CDO/CIO roles, as the empirical research did not provide data addressing that.

There exists a variety of different research regarding the qualities that enhance the speed of diffusion. Al-Gahtani (2003) researched the adoption of information technology in Saudi-Arabia and found out that the five elements introduced by Rogers (2003) explain 87% of innovation acceptance. All the five elements were observed to have some sort of an effect in the adaptation of new technology, where the complexity has a negative effect and the other four have a positive effect. A study by Chang (2010) used the Innovation Diffusion Theory to analyze the life cycle of Twitter hashtags and stated that "Innovation Diffusion Theory offers valuable insights into interface design that supports Twitter hashtag use and access". Research by Atkin, Garcia & Lockshin (2006) used the Innovation Diffusion Theory to study why people are still using the traditional wine bottle cap instead of a screw cap although screw cap is much easier, and found out that the opening of a traditional wine bottle is such an emotional experience for most consumers that without it the whole wine experience suffers.

Kontto (2009) studied in her research how the Innovation Diffusion Theory has affected the development of online invoicing and pointed out that "factors promoting online invoicing in terms of Innovation Diffusion Theory are emphasized relative benefit and visibility, while problems are related to lack of compatibility and trialability and online invoicing complexity". Another similar research by Kärppä (2012) studied what challenges online invoicing implementation faces in the framework of Innovation Diffusion Theory and found out that biggest challenges are change resistance and communication barriers. A study by Sarilo-Kankaanranta & Frank (2021) analyzed how the Innovation-Decision Process within the Innovation Diffusion Theory affects the adoption of Robotic Process Automation (RPA) and expanded the Innovation-Decision Process with "iterations of the decision during the continuation phase of the adoption of technology and suggested factors which may affect the rate of continued adoption of an innovation on organizational level.".

The Unified Theory of Acceptance and Use of Technology (UTAUT) has been used to analyze the adoption of e-commerce in several developing nations around the world. A study by Uzoka (2008) used UTAUT to investigate organizational influences on the adoption of e-commerce in a developing country with xenophobic tendencies and found out that "gender impacts negatively on the adoption of e-commerce, while organization size, management support, communications and information availability contribute positively to the adoption of e-commerce". Another study by Chiemeke & Evwiekpaefe (2011) modified the UTAUT model to adopt Nigerian factors and aimed to explain what affects the user adoption of e-commerce in Nigeria. The proposed modified UTAUT model included "Nigerian factors" such as awareness, culture, cost, power, regulations, accessibility, trust, and reliability. Furthermore, the UTAUT

model has been used to explain e-commerce in other countries such as India (Goswami & Dutta, 2016), Palestine (Musleh, Marthandan & Azis, 2015), Côte d'Ivoire (Yoboue, Yi & Antwi, 2018), and Indonesia (Piarna & Fathurohman, 2019).

Studies about the impact of Covid-19 pandemic have also been published, such as the "Covid-19 Pandemic: Shifting Digital Transformation to a High-Speed Gear" by Soto-Acosta (2020). This study points out that: "something that all businesses share is the need to innovate in products and/or services". The common factor in the project database that I will be using as the basis for most of the empirical data is that *all of the projects must do something innovative*. Soto-Acosta (2020) also points out that whether the digital transformation trend has come to stay, depends on "how we as humans define the role of technology in our work and life". Most of the companies interviewed in the study are SMEs, and another earlier study has found out that "SMEs follow three different major paths toward a digitalized firm: accelerating digitalization, digitalizing sales functions, and finding digital partners to reach the market" (Priyono et. al. 2020). From the results of this study presented in chapter 4 later on, we can clearly see all 3 major paths when it comes to companies' strategies of launching and e-commerce stores. The UTAUT framework which will be explained later can be used here to analyze how humans accept technology in their life and what elements enhance the acceptance of that particular technology. Another subject in which earlier research is lacking is the alignment of IT strategies with other organizational strategies. However, this question is too complex to be answered in this thesis and should not be addressed to ensure that the thesis does not try to cover too much.

3.2 Technology Adoption Models

Some theoretical frameworks have been built to explain the reasons that affect the adaptation and use of technology, which is an important factor of digital transformation. For this thesis I have chosen the three most widely known of those theories that are most suitable for information system's science. The selection was made based on the number of references in the field of technology adaptation. The three theories chosen are the Innovation Diffusion Theory, Technology Acceptance Model (TAM), and the Unified Theory of Acceptance and Use of Technology (UTAUT). One of the oldest theories is the Innovation Diffusion Theory that was first introduced in 1962 by E.M. Rogers, and it tries to understand how, why and at what rate innovative ideas and technologies spread in a social system (Rogers, 1962). One of the other models that explain the acceptance and usage of technology is Technology Acceptance Model (TAM) developed by Davis (1989). It is a model that is based in social psychology but tailored for IS usage and has been widely used and tested in a variety of environments, but it is mostly used to explain organizational behavior. TAM is facing criticism for its simplicity, and because of this, a new model had to be

created. Venkatesh et al (2003) developed a model called the Unified Theory of Acceptance and Use of Technology (UTAUT), which was later expanded into UTAUT2. UTAUT claims that the factors affecting the use of technology are performance expectancy, effort expectancy, social influence, facilitating conditions, and these in turn are affected by the users' gender, age, experience and voluntariness of use. UTAUT2 broadened this by adding hedonic motivation, price value and habit. The characteristics of UTAUT are suited to explain consumer behavior, as was validated in a study by Rondan-Cataluña et al. (2015). In this chapter, I will provide an overview of these concepts and explore how they can be used to evaluate the successfulness of a digital transformation.

3.2.1 Innovation Diffusion Theory

Innovation Diffusion Theory is one of the most widely used theories to describe the diffusion and adoption of innovations. One of the most widely known published work regarding the innovation diffusion theory is that of Rogers (2003), which provides a framework that helps to understand the whole innovation diffusion process and all the factors that affect it (Chang 2010; Brancheau & Wetherbe 1990). The theory was first developed by E.M. Rogers, a professor of sociology at Ohio State University, in 1962, and its fifth and latest edition was published in 2003. There is a broad consensus within the research about innovation diffusion theory that new innovations and ideas spread mostly through the communication between individuals and groups (Summanen, 2014). Rogers (2003) explains that the innovation diffusion process consists of four elements, which are innovation, communication channels, time and social system. Innovation itself is an idea, practice, or object that is perceived as new by an individual (Rogers, 2003). It doesn't need to be a totally new concept for society or an individual, it is enough if one perceives it as new. Communication channel is a channel that is used for information sharing between two parties. The time aspect refers to the time between the creation of innovation and the point of time when it ceases to be an innovation and thus, diffused into society. The social system was categorized by Rogers (2003) as "a set of interrelated units engaged in joint problem solving to accomplish a common goal". The social system is furthermore divided into 5 categories depending on the time of adoption of any new technology (Figure 2). There are the innovators themselves, the early adopters, the early majority, the late majority and the laggards (Rogers, 2003). The diffusion of the information itself occurs according to Rogers (2003) in graph shown in figure 2, where the horizontal axis describes the elapsed time, and the vertical axis describes the adoption rate in the group.

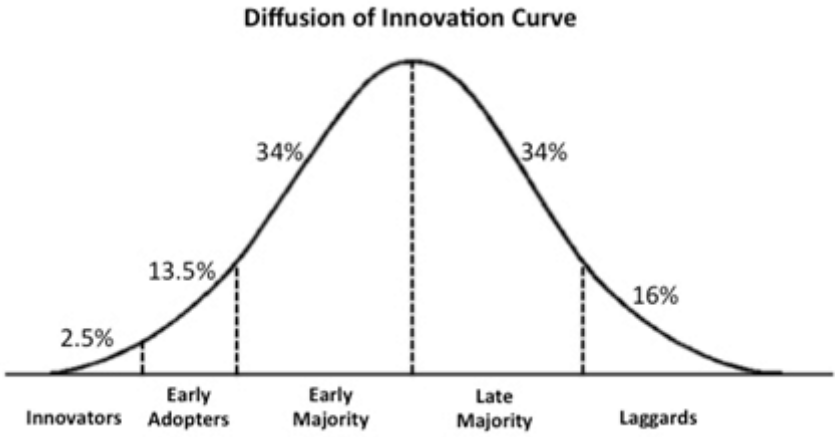

Figure 2 - Diffusion of Innovation process (Rogers, 2003)

Rogers (2003) described the whole process for innovation-decision as "an information-seeking and information-processing activity, where an individual is motivated to reduce uncertainty about the advantages and disadvantages of an innovation". This whole process consists of five steps: knowledge, persuasion, decision, implementation and confirmation (Figure 3).

1. Knowledge about innovation occurs when one hears about its existence and understands the logic behind it. This could happen through consumption of media.
2. Persuasion happens when an individual starts to form a negative or positive opinion about innovation through one's own experiences. This usually is the result of face-to-face interactions with people who have experience with the innovation itself.
3. Decision is the phase when an individual starts to use the innovation to form a positive or negative purchasing decision about it. This can be going to the shop to see how the product feels.
4. Implementation is when one acquires the innovation and starts using it in everyday life to reap the benefits it promises to bring.
5. Confirmation occurs when an individual has used the innovation enough to form a real opinion whether they see it as useful or not.

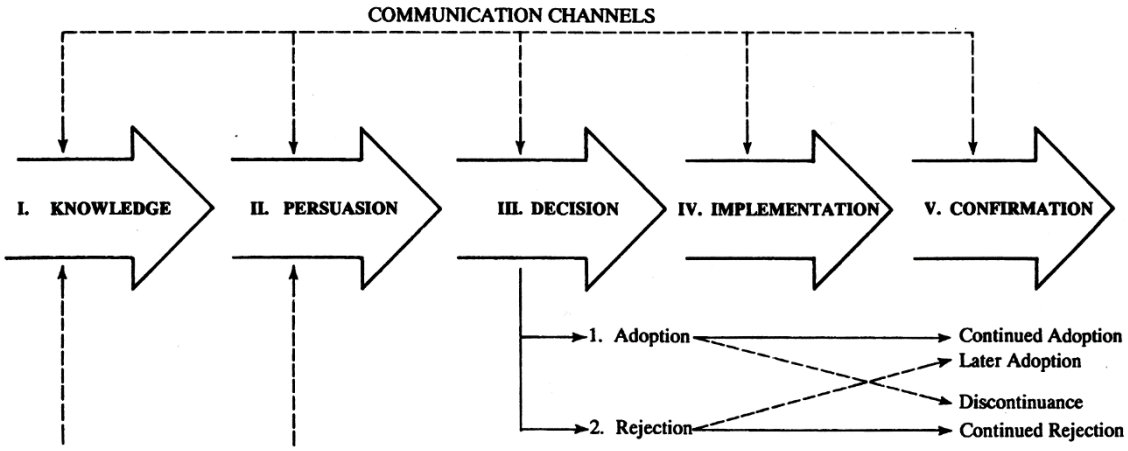

Figure 3 - A Model of Five Stages in the Innovation-Decision Process (Rogers, 2003)

The speed of diffusion within different innovations varies greatly according to certain elements. These elements are described by Rogers (2003) as relative advantage, compatibility, complexity, trialability and observability. Other aspects that affect how opinions about innovations differ are opinion leaders and change agents (Rogers, 2003). Opinion leaders affect the opinion of others about innovation and therefore influence its adaptation. These opinion leaders have certain qualities, such as high socio-economic status, being socially active and highly innovative. Change agents are people, who through their organization influence the diffusion of innovations. They are often highly educated and therefore don't necessarily possess the qualities that allow them to influence those from lower socio-economic background, and therefore must employ assistants who are lower on the socio-economic scale to influence the opinion of those alike (Rogers, 2003).

3.2.2 Technology Acceptance Model

The Technology Acceptance Model (TAM) was inspired by the Theory of Reasoned Action (TRA) made by Fishbein and Ajzen in 1975, which stated that both the attitude towards an action and the subjective norm have an impact on behavioral intention, which then influences what people do (Schepers & Wetzels, 2006). This is visualized in Figure 4. It is the most widely applied model for the usage of technology (Venkatesh, 2000). Originally, Davis introduced TAM in his doctoral thesis, and since then it has been extended and tested by many researchers (Legris et al, 2003).

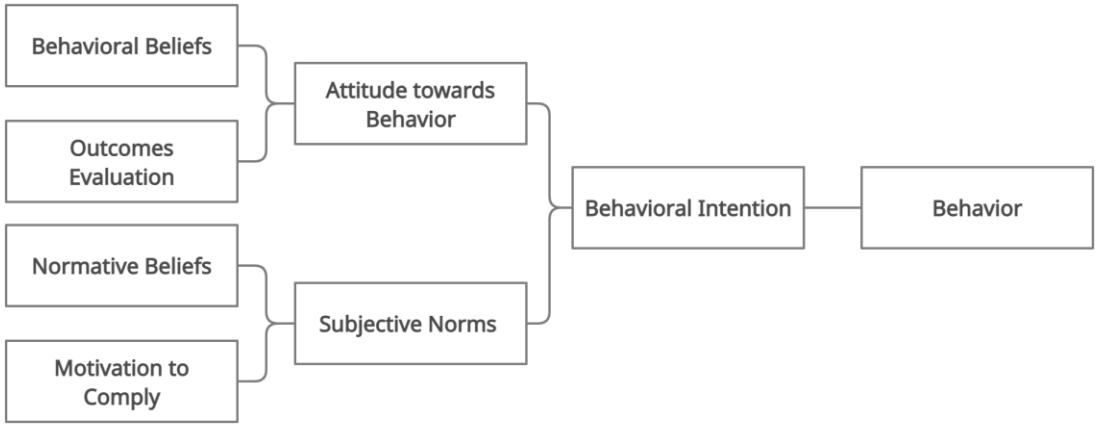

Figure 4 - TRA model (Fishbein and Ajzen, 1975)

The main purpose of TAM is to explain the most important external variables explaining the use of technology, which are the perceived ease of use (PEOU), and perceived usefulness (PU). Whereas TRA explains that beliefs influence attitude, which influences behavior, TAM replaces many of TRA's measures with ease of use and usefulness (Figure 5). TRA is more of a general model, which was not designed for a particular behavior or technology, whereas TAM was designed specifically to explain the use of IS (Javier et al, 2015).

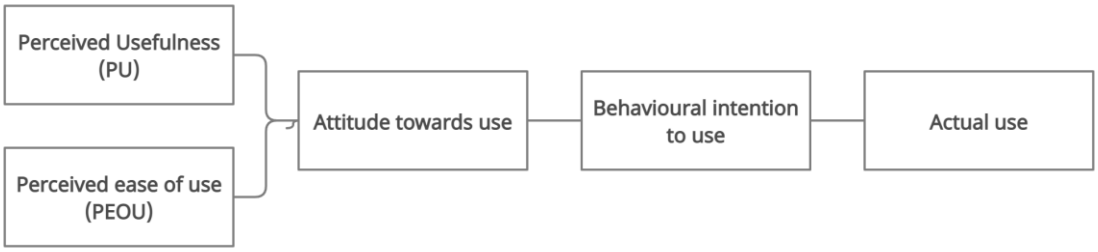

Figure 5 - TAM model (Davis, 1989)

As TAM was tailored for user acceptance of IS, it aims to explain user behavior by the two main concepts of perceived usefulness and ease of use. PU means "the degree to which a person believes that using a particular system would enhance his or her job performance", and PEOU "the degree to which a person believes that using a particular system would be free from effort" (Davis, 2003). Researchers have extended TAM models, and one of these extended models is the TAM2 model (Figure 6), which added a term called "subjective norm" as a construct that influences both PU and PEOU. Subjective norm means that "people often choose to perform an action when one or more important referents say they should, although they do not like or believe in it" (Schepers & Wetzels, 2007).

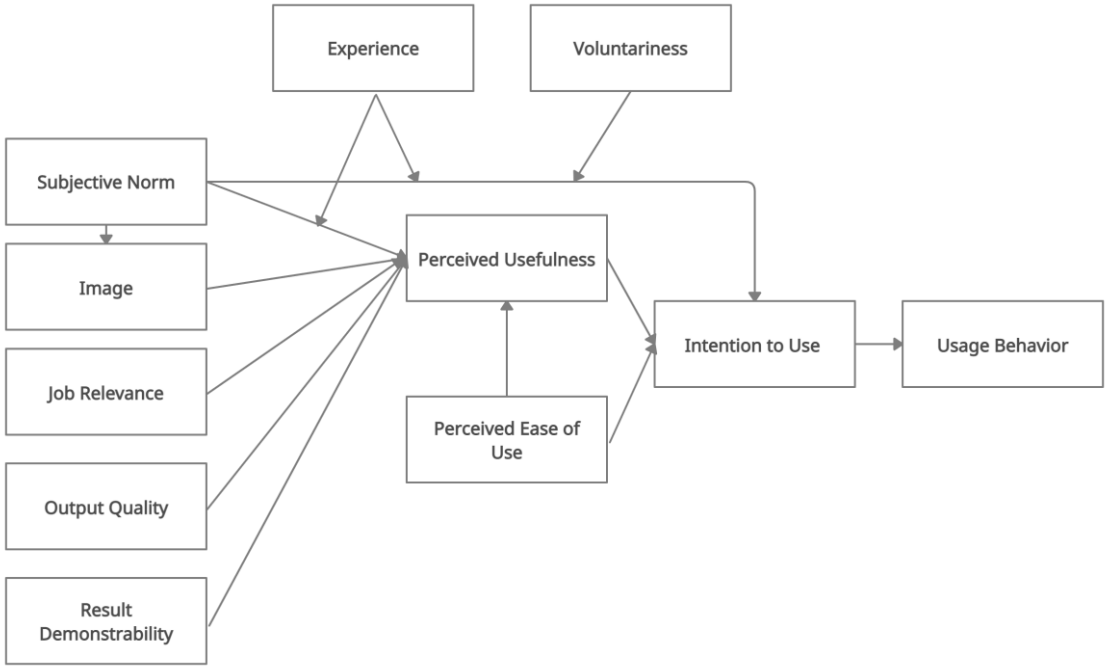

Figure 6 - TAM2 model (Venkatesh and Davis, 2000)

TAM models are still being widely used, and their use has been expanded to explain a variety of different technologies, such as web site applications. The models have gained a lot of support, as can be seen by statistics such as more than 35000 identified citations within the Google Scholar database in November 2022.

3.2.3 The Unified Theory of Acceptance and Use of Technology

The Unified Theory of Acceptance and Use of Technology (UTAUT) is a model formulated by Venkatesh et al. (2003) in the MIS quarterly. The model is built on TAM and other similar IS models (TRA, Motivational Model, Model of PC Utilization, Innovation Diffusion Theory, Social Cognitive Theory and Theory of Planned Behavior) mentioned in the previous chapter, and it aims to further explain user behavior in information systems. The UTAUT model claims that there are four key elements that determine user behavior: performance expectancy, effort expectancy, social influence and facilitating conditions. All of these elements are influenced by the user's gender, age, experience and voluntariness to use, and the first three elements are direct determinants of usage intention and behavior, and the last one (facilitating conditions), is a determinant of user behavior (Figure 7). UTAUT has been most used in fields related to business, management, information systems and technology (Williams et al. 2015).

Performance expectancy means the trust the user has in the system, and whether the user believes that using the system will improve her work or life in

general. The influence of performance expectancy is moderated by both gender and age, and it is stronger for men and particularly younger men (Venkatesh et al, 2003).

Effort expectancy refers to the ease of use of the system. Whether users expect the system to be simple to use, and not require a lot of extra research to "get the hang of". The effort expectancy is moderated by gender, age and experience, and it is stronger for women, and particularly younger women (Venkatesh et al, 2003).

Social influence means the social norms involved with the system, whether other people are using it, and is it expected of you to use the system. This kind of influence is stronger in work-related systems, for example, software that many people in a certain industry are using. Social influence is impacted by gender, age, voluntariness and experience.

Facilitating conditions means whether an individual using the system believes that the system is well supported. Does the system have an infrastructure and employees behind to make sure that it is operating smoothly, and whether there exists support for possible problems. Venkatesh et al., (2003) pointed out that facilitating conditions does not have a significant influence on behavioral intention, and that it is moderated by age and experience.

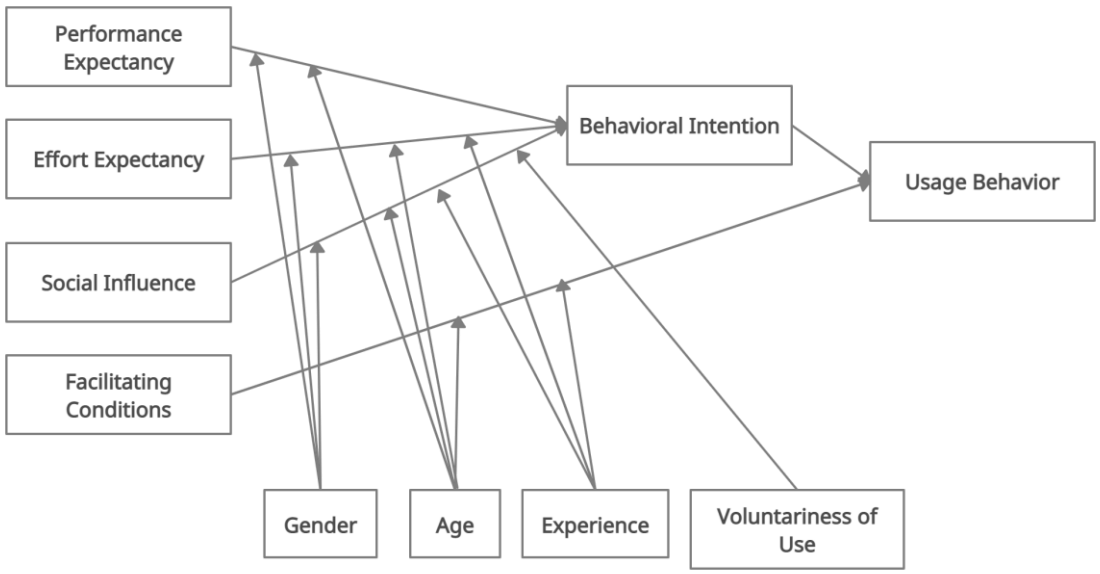

Figure 7 - UTAUT model (Venkatesh et al, 2003)

Nine years after the development of UTAUT, Venkatesh and the others extended it to be applicable in consumer technologies as well. This UTAUT2 by Venkatesh et al. (2012) added three new constructs to the old model: hedonic motivation, price value, and habit (Figure 8). Habit, like the 'facilitating conditions' from the original UTAUT, is directly related to use behavior as well as behavioral intention. Hedonic motivation is the simple pleasure that the user experiences when dealing the system, price value refers to the comparison between the price of the system versus the value the user feels she gets from

using the system, and habit means the "degree to which people believe the behavior to be automatic" (Limayem et al., 2003).

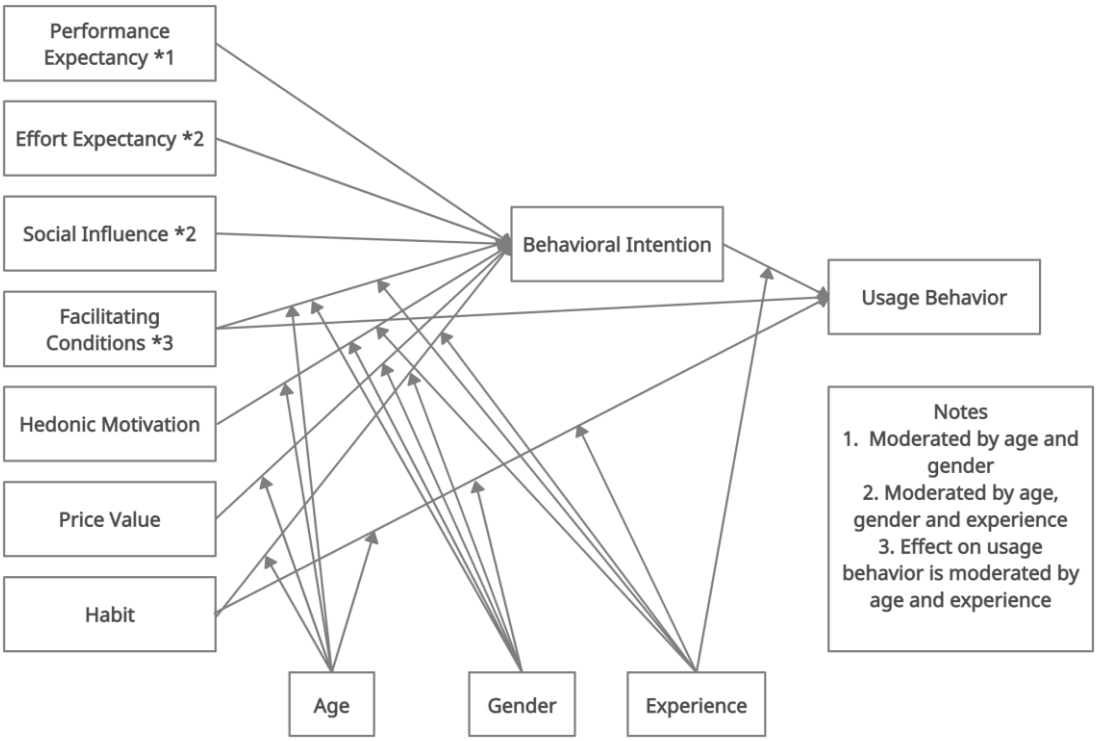

Figure 8 - UTAUT2 model (Venkatesh et al. 2012)

These models, especially the UTAUT 1 & 2, look for commonalities between factors that affect the use of technology. When companies are developing a digital transformation strategy that would also incorporate various new technologies, they should take note of these elements to ensure that their new system would be used by as many users as possible.

3.3 Implications

The purpose of explaining these theoretical frameworks was to map out specific qualities that influence user behavior. Especially the UTAUT model lists out precise elements which influence people to use certain systems. When designing a new system or a digital transformation/e-commerce strategy, companies should be using these models as a basis for their project. Some of the elements of UTAUT are very clear, such as performance and effort expectancy. The new system should perform well and be rather effortless to use – this can be achieved by thorough user experience (UX) design, a working back-end (database, architecture), and a support framework for any potential issues (chatbot/IT support/etc.). Social influence is a bit harder to consider, as it all depends on how the community adopts the new system. A marketing campaign could help to get people to gain awareness about the system. The main point of the social

influence element is to make as many people as possible adopt the new system so that working with it would become a new norm. Facilitating conditions can be considered along with performance and effort expectancy, and the main part to succeed in that is to *make a well-functioning system.* The new elements proposed by UTAUT2 (hedonic motivation, price value, and habit), should also be considered when planning digital transformation.

To analyze the results described in the next chapter, I have combined the theoretical frameworks of TAM & Innovation Diffusion Theory (IDT) with the UTAUT model. This is because the UTAUT model has the most factors in it, and that most of the elements of TAM & Innovation Diffusion Theory are similar to those already in the UTAUT. *Relative advantage* (IDT) and *perceived usefulness* (TAM) are equal to *performance expectancy* of UTAUT. *Complexity* (IDT) and *perceived ease of use* (TAM) are equal to *effort expectancy* (UTAUT). The IDT's *compatibility* is defined as "the degree to which an innovation is perceived as being consistent with the existing values, needs, past experiences of potential adopters." (Rogers, 2003), as this element deals with values and past experiences of a certain thing, I have combined it with UTAUT's *social influence*. IDT's *trialability* was left out, because it refers to having kind of a "test run" of a product before putting real resources into it. This in my opinion is not applicable for the e-commerce situation, as it is already a dated idea, and that *trialability* is mostly important to early adaptors of a technology and not late adaptors such as in this case. As *observability* was not in my opinion similar enough to any existing UTAUT elements, I have included it as it is.

In chapter 4, I will use the empirical data to see whether companies have considered these elements of technology acceptance models, and in the appendix section I have included an analysis of the empirical results gathered.

4 EMPIRICAL RESEARCH AND RESULTS

This chapter is about the empirical research itself, and the results it brought. The first part explains the methodologies used for the research, while the second part goes through the results obtained from the interviews. For the methodology, a qualitative multi-case study was chosen. Multi-case study was chosen because I needed to understand the differences and similarities between the cases in order to answer the first research question. Multi-case study also allowed me to analyze the results within each situation, but also across situations (Gustafsson, 2017). A qualitative study was chosen instead of a quantitative study, since the aim was to seek detailed information about a small group of people that are in certain ways connected to each other (Hirsjärvi et al., 2008). For this multi-case study, I conducted several semi-structured interviews to allow more flexible questions and let the questions "live" throughout the interviews.

Arranging the interviews was one of the hardest parts of the thesis. It proved difficult to get companies to answer, and to set up the interview time. I had around 5 correspondences and arranged interviews that did not eventually happen, because the person did not show up for the online interview, or that they eventually stopped responding after initial agreement. After the 5th and especially 7th interviews, information saturation was seen for the first time, as the responses started to mimic those of the earlier interviews. According to Eskola & Suoranta (1998), saturation point is reached when "*a new interviewee doesn't bring new information to the research and the answers begin to repeat itself*". Especially on answers to what led a company to pursue an e-commerce store and what was the attitude within the company, there was little new information coming in from the 7th interview, which was a sign that information saturation was reached, and that the amount of empirical data from the interview was enough to conduct this thesis.

To analyze the results of those semi-structured interviews, I used thematic analysis to identify, organize and find out patterns of meanings from the data itself. The results are grouped into four main categories based on the material gathered. The categories were formed during the interviews, as the interview questions morphed into these four categories. The categories are: 1) presuppositions about e-commerce 2) initialization of e-commerce 3) resources for e-commerce 4) aftereffects of e-commerce. The methodology chapter explains these methods more thoroughly.

Subsection 4.2 is about the initial mood and thoughts towards e-commerce, and the general presuppositions the company in question had about launching their e-commerce store. Subsection 4.3 deals with the initialization part of the e-commerce store, and subsection 4.4 about the resource management of the project – were there enough resources, what resources should have been more, etc. The final subsection 4.5 deals with the aftermath of the project itself, what benefits or challenges were observed afterwards, and did the mood of the employees change after the launch of the e-commerce store.

4.1 Methodology

There exist three main categories for research strategies: quantitative research, qualitative research and mixed methods (Williams, 2007). For this study, a qualitative approach was chosen given the nature of the study to seek detailed information about a small group of people who are connected to each other. More specifically, a multi-case qualitative study was chosen instead of a single-case study. The advantage of a multi-case study is to provide more compelling and robust answers, which are benefits of a multi-case study (Herriot & Firestone, 1983). A single-case study in this case would not provide enough data to analyze digital transformation as a whole, as it would only be the strategies and lessons from a single company. Each case of the study was carefully selected in hopes of providing similar results amongst companies (a literal replication) or providing contrasting results but for anticipatable reasons (a theoretical replication) (Yin, 2015). If the results of these cases turn out as predicted in the theory, it would provide a compelling support for the initial proposition, if the logic is reversed (the results are contradictory), the initial proposition must be revised and retested with another set of cases in the future (Yin, 2015).

To conduct this empirical multi-case study, a set of semi-structured interviews were conducted. The reason for a semi-structured interview is to allow the questions to "live" and not be precisely formulated beforehand. First, two "test interviews" were conducted to find the most efficient interview questions and themes, and then that framework was used for the remaining 5 interviews. Before conducting the interviews, key themes were identified mainly from the UTAUT, Innovation Diffusion Theory & TAM frameworks and the interviews were built around those themes. Because the research questions were rather abstract, interviewing was selected to allow flexibility in the study. Interviewing is suitable for this study because it was not defined what kind of answers will be expected and that the answers are based on the interviewee's own experience (Kallio, 2021). The interviews are said also to be "suitable in situations where the aim is to strive a rich description of the topic rather than just validate a selected hypothesis" (Mason, 2010).

The interviewed companies ranged from a single-person company to a company with several hundred employees. The revenues also ranged from around 50 000€ to a hundred million euros. Most of the interviewed companies sold physical goods (textiles, electronics, food), but there was one who sold services. Around half of the interviewed companies were before mostly in the B2B sector (wholesale of products) and wanted to move into the B2C sector through the new e-commerce stores. There were two companies in the restaurant sector, one being a gas station with an attached restaurant, and one being a traditional bar. All the interviews were conducted during July, August and September of 2022. The lengths of the interviews were between 25 and 45 minutes, with the average interview being around 30 minutes long**.** Most of the interviewed companies had successfully launched their store, some with more success than the others, and one of the interviewed companies had eventually

gone bankrupt, mostly for being in the restaurant industry during the pandemic. The information about the interviewees can be seen in Table 2.

To analyze the information collected from the 7 semi-structured interviews, thematic analysis was used. Thematic analysis is a method for systematically identifying, organizing, and offering insight into patterns of meanings (i.e., themes) across a data set (Braun & Clarke, 2012). This was selected because to answer the research questions and to link the theory to practice, I need to identify shared meanings and experiences between companies' digital transformation strategies. The main reasons for thematic analysis are accessibility and flexibility (Braun & Clarke, 2012), which are the same reasons why semi-structured interview was selected instead of a structured one. By combining semi-structured interviews and thematic analysis, I managed to answer the research questions, which became more pronounced through the analysis. A thematic analysis usually (and in this study as well) consists of six distinct phases.

In the first phase, I transcripted and listened the 7 interviews several times to think about what the data tells me. The interviews were conducted in Finnish, so I had to translate the results into English. This involved note-making and highlighting points of interest in the data, as well as coming up with accurate translations to best convey the interviewees' messages across.

The second phase was to generate codes from the data, which were then used to build and support themes. As the initial data set and transcript was long, codes were used to simplify the dataset and to organize it in a way that allows the capture of patterns within the data.

Phase three was to search for the themes within the codes. Whereas a code is just a data block (e.g., company did strategy planning beforehand, e-commerce store was a success), a theme captures something more important within the data in relation to the research question (thorough strategy planning led to increased success in the new e-commerce store) (Braun & Clarke, 2012).

Phase four was to review the themes created in phase three, and to check if they really are themes that are related to the research questions. This resulted in some themes grouping together (4 main categories emerged, and all 7 UTAUT themes were visible as well).

The fifth phase was to select the best quotations and stories from the transcribed interviews, and to try to build a good story with equal amounts of quotes and own analysis. Sixth phase was the production of this study as a whole and finalizing everything. As analysis now necessarily involves writing, the separation between Phase 5 and Phase 6 is often slightly blurry (Braun & Clarke, 2012).

Table 2 - Information of the interviewees

ID of the interviewee	Experience in the field (years)	Current job title	Main industry	Turnover (in millions)	Launching year	Success
I1	>20	Specialist	Sale/wholesale of exercise equipment	3.5	2020	Neutral
I2	>20	Entrepreneur	Language training	~0.1	2022	Yes
I3	15	Chief Financial Officer	Wholesale of electronics	3.5	2021	Yes
I4	4	Head of Digital Marketing & E-commerce	Clothing and textile wholesaler	~0.8	2018	Yes
I5	~20	CX Manager & Head of E-commerce	Furniture sales	~100	2012	Yes
I6	~20	Entrepreneur	Bar		2020	No
I7	~10	Entrepreneur	Gas/service station	~3	2020	Neutral

4.2 Presuppositions about e-commerce

All interviews began with a question about what led the company to pursue an e-commerce store. Most of the interviewees mentioned COVID and also that having an e-commerce store is kind of a necessity these days. The pandemic made many companies realize how easily their normal business functions could be disrupted, resulting in a sharp decline in revenue.

> "We realized how fragile our traditional business was, as something like COVID totally disrupted it, business ended abruptly as customers were confused about the new pandemic situation and unwilling to make new purchases or investments. Fear of not being able to sell products – our company had to innovate new ways, got funding, and started the road to e-commerce." (I3).

> "It was quite a crazy idea to start an e-commerce store for a bar, since customers must come pick up the products themselves, since it's not legal in Finland to post alcohol, due to some reasons. I would have never thought to do this if it wasn't for the pandemic." (I6).

> "It was the pandemic that made us to pursue an e-commerce store, although we had thought of it before, since we were already using Kotipizza e-commerce service." (I7).

4.2.1 Perceived benefits

Another emerging theme was to reduce workload, make product purchasing easier, and to widen the reach of marketing. Most of the interviewed companies had previously relied on a specific salesperson or a team to handle the sales and thought that setting up an e-commerce store would ease the workload of the sales team and to naturally increase the number of sales. The responses varied due to the size of the companies in question, the bigger companies outsourcing the project or having a person in-house to do it, and the small (micro) companies doing it by themselves or through a person recommended to them through their network.

> "I trust those who do this as their job, I rather pay them to solve a problem for me instead of spending several hours of my own time to solve it myself, it is also cheaper since even though the developer will of course charge for his time, it's still less than the lost billable working hours that I would spend learning it by myself." (I2).

> "I think that I don't need to know how to start an e-commerce store, the difficulty of starting it is as difficult as paying the bill for it. If some of the developers said that this thing is good and should be done in a certain way, we would do it their way. I didn't need to understand it. We found the developer from our community, would've been more difficult to find someone if I hadn't known anyone." (I6).

> "Before launching the store, the main goals were to increase the easiness of purchasing and to widen the reach of marketing. The complexity of the e-commerce project was reduced by the help of the company's own specialist, who had already launched a similar e-commerce store in the

> company's overseas office, and only had to "copy paste" the same idea into the Finnish office, or so we thought." (I1).

The expected cost savings and potential profits of the e-commerce store were a big motivating factor for almost all the companies. The e-commerce store was thought to automatize certain functions and to also reduce collection from work done, as one interviewee explained:

> "Another big motivation for the e-commerce store was to commit customers and cut back "useless work". Many customers before the e-commerce store was launched would ask for consultation in preparation of a purchase, which would make the entrepreneur to commit working hours on that preliminary research, and in the end the customer would not make the purchasing decision after all. In the e-commerce store, everything is paid beforehand, so the customer commits to the purchase right away. That way the entrepreneur doesn't have to collect money from work done, as it eliminates the need for that. In a way, it has eliminated the collection of all the work done, which has made it a lot easier." (I2).

4.2.2 Perceived difficulty

One of the questions was about how difficult the company thought setting up an e-commerce store would be. Almost everyone outsourced the development of the e-commerce store itself to a 3rd party, because they did not have the time or resources to do it in-house. One company (I1) had a person inside the company doing the development, and one interviewee (I4) did the whole e-commerce store by himself. The company where one employee did all the work himself, was also the company that thought beforehand that setting up an e-commerce store would be "tough, but doable" (I1).

> "CEO worked in the industry since 80s, worked for big corporation until he decided that why work for someone else, when I could do this myself. Decided to go solo and later launch an e-commerce store, contacted me asking if I could do an e-commerce store, I didn't know how, but I had just recently read from somewhere that "don't say no if you don't know how to do something, say yes and then learn how to do it." (I4).

The attitudes towards e-commerce stores varied between pessimistic and neutral views. The companies with the most pessimistic views were those that dealt in the restaurant business, especially the bar.

> "The laws in Finland really hinder anything to do with alcohol, so our attitude was quite negative from the start. Luckily, we had funding for

> this, because I'm hard pressed to find anything innovative in the restaurant business to actually make more profits. This is an old-school business, you buy something, and you pay for it, it's not an imaginary business. E-commerce was the only thing I could think of that would even have the potential to make money." (I6).

> "In the beginning, I was the only one excited about the e-commerce store. Rest of the staff didn't have great trust in the operation and were afraid of how much extra work the e-commerce store would bring." (I7).

> "Nobody was against the e-commerce store, since it "didn't break any existing processes, and that the responsible persons were determined beforehand, so the project wasn't thought to increase the burden of anyone with anything extra, so the general attitude was positive or neutral. Let's say that it didn't impact the life of other employees, other than those that worked directly with the project." (I1).

The only interviewed company that had launched their store before the pandemic, all the way back in 2012 told of similar kind of attitudes and fears.

> "We had a lot of skepticism, why would someone want to buy furniture from an e-commerce store? We also had some fears that the potential success of the e-commerce store would somehow be at the expense of brick-and-mortar stores." (I5).

Some of the interviewed companies did not have really high expectations from the e-commerce store. It was thought to be a little bit of extra business, but nothing groundbreaking.

> "Small benefits but not considered revolutionary useful. It was thought that, for example, selling fishing equipment would do better through an online store. Not terribly high expectations." (I7).

After discussing the presuppositions and attitudes towards e-commerce store before the store was launched, the interview moved into the initialization part itself.

4.3 Initialization of e-commerce

The next part of the interview was about the implementation of the e-commerce store. What kind of methods and technologies the company used, what was the attitude towards the e-commerce store within the company, what were some facilitating conditions to ease the e-commerce transformation, did the age/experience of employees affect their attitude, etc. The answers varied a lot

in this part, few companies said for example that age "definitely had an effect on the attitude", whereas some said that "age had no impact at all". This can be explained by the average age within the interviewed companies, companies with relatively young workforce saw age having no effect at all, and companies with older and fewer people saw the effect that age had on the attitude.

> "Our workforce is rather young, so age or experience played no role whatsoever." (I1).

> "Age definitely impacted the attitude towards the new e-commerce store, older employees had a bigger lack of trust in the success of the new e-commerce store, but after the CEO's 'leg turned', it was a defining moment in the atmosphere change within the company." (I3).

4.3.1 Facilitating elements

What made the implementation of the new e-commerce store easier for most companies was that they had trust in the person/party responsible for the development of the e-commerce store. Most interviewees had already an e-commerce developer in mind before even launching the project. The one company where the interviewee was responsible for the development of the e-commerce store mentioned that having free reign and the trust of the rest of the company made it much easier to develop the store.

> "The person who already had made the homepage for the company was chosen to develop the e-commerce store, mainly because the trust between the two parties was established beforehand, and that person already knew the company's business portfolio, so it was simple to keep working with that person." (I2).

> "The trust in our developer was strong, as it was a person we knew, and we also had a few employees with previous experience in e-commerce. The developer was there, sitting in the bar, drinking beer and developing the e-commerce store." (I6).

> "What made everything easier was that I had free reign of how to do the project. Which means I didn't have to get approval for any of the decisions which helped to make the e-commerce store functional quickly. The only question I had for the CEO was whether to choose Posti or Matkahuolto as the transportation partner, but that was it. Another expediting factor was that the e-commerce store had to start generating revenue soon, so it was a main focus for the company to get it functional as soon as possible." (I4).

Another aspect that improved the implementation of the new store, and especially improved the attitude of the staff towards the e-commerce store, was thorough strategy planning. People had to learn that this would be good for the company, and this strategy planning should encompass the whole company. In the interviews there was one company that succeeded in this, and one that realized its importance too late.

> "Attitude was initially kind of negative, especially from sales and the "old guard" of the company. They had a lack of trust in the new e-commerce store and did not believe that it would really work. But as the planning went on and the company did involve everyone in the company throughout the whole process, the attitude of those who were negative at first started to change, and after the project they had done a real 180-degree turn, everyone seemed really excited about the fresh e-commerce store." (I3).

> "Questions such as whose responsibility is this (marketing/sales/finance/logistics), all of those parts of the company should have been activated more during the planning & implementation stage, instead of just copy pasting the processes from the overseas office." (I1).

The division between B2B & B2C was also significant in the development of the e-commerce stores. Most interviewees said that B2B sales are difficult to do through e-commerce stores, so the stores were mostly meant for B2C sales. The interviewed companies saw that B2B transactions are usually done through contracts, bills and personal connections, and are thus not suitable for e-commerce. Also, the lower margin of B2C sales was mentioned.

> "The e-commerce store helps sales especially to consumer-customers, since they can get to know the product catalogue in peace beforehand. The same logic doesn't apply for B2B transactions, since companies don't usually buy services from e-commerce store, they ask for the bill and then we make the contract." (I2).

> "Our main business is B2B and big chains, so the company has thought that these kinds of businesses don't want to order from e-commerce stores, they prefer the traditional way of bills and contracts. We have wanted to keep the aspect of dealing with our customers personally." (I3).

> "The e-commerce store was vital for the company, as for wholesalers, selling directly to businesses is a big part of our business, but it has a low margin, whereas the e-commerce (B2C) has lower volume, but much bigger margin. It was clear from the start that we needed an e-commerce store." (I4).

Another aspect that affected the success of the e-commerce store was the price of the products the company is selling. As B2B transactions are rarely done through e-commerce, it could be partly because the sums are much higher than in B2C sales. One interviewed company thought that the high price tag of their products is one of the biggest obstacles of their e-commerce business.

> "Purchases of around 10-30€ are easy to make with the ´snap of the fingers´ but our company's products are worth several thousands of euros, and therefore have a much bigger barrier of entry to make the purchase." (I1).

4.3.2 Routinization

The routinization of the e-commerce store was a defining question regarding the success of the store. Routinization in the e-commerce topic refers to whether individuals will automatically find their way into the company's e-commerce store and use it like any physical store. I asked this question from every interviewee "was the routinization of the developed e-commerce store taken for granted?". The companies that didn't take this for granted, and instead spent a lot of resources developing a marketing strategy that would bring customers into the e-commerce store were successful in the end, and the companies who thought that customers would just automatically move into the new e-commerce store were less successful. One interviewee didn't really think about routinization, because her company had no competitors and as a one-person company, she had no time for extra work that more customers would bring. She said that "I have a lucky situation, as I don't have to spend any time marketing, customers come and find me instead". Marketing costs were also among the highest cost of each project.

> "The routinization of the fresh e-commerce store was not taken for granted. After setting up the shop, the next step was to think about how to get customers to the store. We decided to go with Facebook marketing. We set up a small investment into putting up the ad into Facebook, and the next day we already had our first e-commerce store orders in. It all went smoothly." (I4).

> "E-commerce store has been involved in marketing from the beginning, as if fused, this is called the constant development. There has not been a separate online store campaign." (I5).

> "Routinization was not taken for granted, we communicated strongly through social media, and also the press was actively involved and kept publishing stories about restaurants going for e-commerce. Some of the

> customers already expected every restaurant/bar to have an e-commerce store, since 'Helsingin Sanomat already announced it.'" (I6).
>
> "We did not think people would find the store by themselves, so we published flyers about it in the local community and also implemented some Facebook marketing." (I7).

The company that took routinization for granted did not implement any marketing prior to the launch. Another company also did not do any marketing, but that was because it was a one-person company, and the entrepreneur wouldn't simply have had enough time to do any extra work that could result from a successful marketing campaign. The same company also mentioned that their main business functions are not scalable, so it would just mean more work.

> "The last two and a half years my calendar has been so full, so I wouldn't even have time to make more business, so I didn't even think about marketing the new e-commerce store. Also, my main business functions are not scalable, but I have been thinking about developing more scaling business ideas, which could be easier to sell in the new e-commerce store." (I2).
>
> "The routinization of the e-commerce store was taken for granted. After launch, the social media marketing was directed towards the e-commerce store. The idea was, that customers would move automatically into the new e-commerce store, but still we got lots of simple questions such as "where can I see the price of X" so the transformation wasn't as automatic as was expected." (I1).

One company mentioned how the e-commerce environment in Finland grows quite slowly when compared to other countries, and how the initialization usually goes by small step instead of huge investments and growth ideas.

> "In Finland, it is typical in the field of e-commerce and commerce in general to grow quite calmly and in small steps. Relatively few Finnish e-commerce stores have used the 'Swedish model', where they hire a hundred people and seek billions in turnover." (I5).

The biggest interviewed company also mentioned the changing technological climate, and the rising expectations of the customers. Having a bigger turnover means more demand, and that means also closely following what your competitors are doing. The importance of ranking high in Google search results was also mentioned. Other companies mentioned that the social pressure came also from competitors, but mostly from within the company.

> "If a competing company did X, we want to do it too. One thing that forces us to develop more is our friend Google, which emphasizes the performance of sites in its search results, you have to have a fast-working page in order for it to rise in the search results. It causes pressure that you have to focus on if you want to appear on Google. So, the pressure comes from the technology requirement, the platform must keep up with the growth of trade. Customers' expectations are also rising, we need to get faster sites and all kinds of additional things. Especially the big global players such as Amazon offer great solutions and fast deliveries that raise the bar for the rest of us." (I5).

> "The pressure came from within the company, seeing competitors having their own stores, but the final push came from COVID." (I3).

> "There was no external pressure from competitors or customers, most of the pressure came from within the company, through the executives and the expectations of marketing." (I1).

In the initialization part of any e-commerce project, resource management becomes crucial. What resources were necessary, what resources could be focused on more? In the next part of the interview, I discussed the importance of resources and resource management.

4.4 Resources for e-commerce

The third part of the interview was regarding the resources for the e-commerce project. Companies were asked whether they had enough resources, what resources they were lacking or needed more, and what aspects made it difficult to obtain or use certain resources.

4.4.1 Knowledge resources

The emerging theme in the resources section was definitely information/knowledge resources – which means the ability to teach yourself and learn new things about the e-commerce store. This was mentioned in almost every interview, along with other resources regarding the use of one's own brain, as well as management of time. Having a basic knowledge of how e-commerce and the internet in general works was also mentioned.

> "The biggest resource for me was how to google things. If you know the correct keywords of how to search information on Google, you can teach yourself anything. Another resource was being kind of hard-headed, and not getting frustrated if you don't learn something in an hour or so." (I4).

> "The project team spent a lot of time researching about e-commerce business, and we held weekly "book clubs" or "think tanks", where each team member taught others what they had learned that week, and therefore shared their information within their circle." (I3).

> "I have an idea about what the internet is, which made things easier. It was easier to start doing things when I already knew how an e-commerce store works." (I6).

> "The main resource needed is the basic knowledge of how the chosen e-commerce platform functions. One must know these things as the day-to-day maintenance of the e-commerce store involved a lot of updating product text/images, basics of WordPress for example. From the viewpoint of a humanist, WordPress is not the simplest, everything is done backwards when compared to email communication, learning all of this took a lot of work hours. If you don't check the new e-commerce store regularly, you'll forget quickly how it works. This was the main resource needed." (I2). The entrepreneur didn't learn this by herself, the person in charge of developing the store created educational material and helped her with learning the basics of the store.

The importance of a good developer partner who you can trust was mentioned to be the most important resource by the biggest company interviewed. This can be seen as a continuum to the smaller companies' stories who mention that working with someone they can trust was vital for the success of the project. The big company mentions sticking with the same developer partner since the start of the e-commerce store 10 years ago.

> "The most important resource was having a good and reliable developer partner. This was decisive for the development of the e-commerce store, and difficult to replace. Digital marketing is also important, but more easily replaceable. From the beginning, the same partner and partially the same developers were behind the e-commerce store. Of course, there could always be more money. There is always a shortage of good coders. It is often thought that if one of the important programmers changed jobs, they would be difficult to replace." (I5).

The interviewed company with the biggest revenue and number of staff mentioned that one of the most important resources when trying to grow the e-commerce store is by having good reasoning and justification skills, especially on how to convince the upper management to allocate more resources and workforce into the store. Another company mentioned that they had done a lot of reporting and inclusion of the management board during planning stage,

which helped, but as they didn't keep doing it for the entirety of the project, it didn't prove to be so helpful after all.

> "Recruiting in Finland is a risky venture; I have agreed with the management about that. In brick-and-mortar stores it is easy to justify that one additional salesperson brings in X euros, but in an e-commerce store a team member is not a direct increase in sales, so it is more difficult to justify. For example, how do you measure in money the value of a website content provider who produces text for pages, it's really difficult to demonstrate commercial value in advance, afterwards you can measure, for example, by the development of product sales" (I5).

> "What helped was we had to do resourcing and reporting during the planning stage, which helped the management board to see that the project is being advanced, but since the planning stage was such a small part of the project as a whole, in hindsight one can say that most of that planning has already been forgotten." (I1).

The company where the e-commerce store was developed in-house had no complaints about resources. They also managed to make the whole e-commerce store incredibly cheap. Some also credit the successfulness of resource management to the competence of the external developer.

> "Resources were enough – 30€ was enough to learn everything (two Udemy courses). Most resources were therefore mental resources. After launching the store, the Facebook marketing took resources and it took convincing to let the CEO approve those initial marketing costs, especially as the e-commerce store at that point hadn't created any revenue yet. The problem for micro companies such as ours is always "how to get as much as possible while spending as little as possible". Money is the resource that sets the rules." (I4).

> "Would more resources have been necessary? No, everything went as it was supposed to go, mostly due to the competence, vision and cost-efficient method of the developer of the new e-commerce store." (I2).

4.4.2 Challenges in resources

The challenges within resources had mostly to do with time. Most of the e-commerce projects were extra projects on top of "normal" work, and therefore all things regarding the e-commerce store had to be done on the side. Another challenge mentioned was how to teach the CEO to use the e-commerce developed by the company who did it 100% in-house and started from scratch.

> "This project was an extra project on top of normal work, so it had to be done in the side, as kind of overtime/extra work. We hadn't allocated work hours to this project, everything was extra." (I1).

> "The biggest issue was how to teach the 50-something years old CEO to use the backend of the new e-commerce store. That was much harder than customer acquisition." (I4).

> "Only challenge would have been that if I had not trusted the professionalism of the e-commerce store developer. All the hours that I would spend self-studying this are missed billable hours from my main business. The core thing of being a one-person company is to focus on what is your core competency, bring the money in that way and the things that you are not familiar with, you buy those services. You have to be well aware of your own customer segment, customer & market profiles." (I2).

> "Biggest challenges were in resourcing, as we still had our traditional businesses running alongside the e-commerce project. Especially during the implementation and final stages of the e-commerce project, the whole team was really busy as we had basically double the workload when compared to a normal situation." (I3).

The company who had already implemented an e-commerce store in their overseas office and had a responsible person working from there, learned that they should've put more resources into communication and delegation. In hindsight, more resources wouldn't have been necessary, but existing resources should have been activated more. They also mentioned activating an external marketing consulting agency during the project but failed to consider the complexity of their products enough.

> "In the planning stage, we had activated an external media/marketing consulting company on how to get people to move into the e-commerce store. But although we got our customers into the e-commerce store, it does not guarantee that they would purchase things from there, as our products are rather valuable and complex." (I1).

After discussing the initialization phase and the resources it needed, we moved into the final part of the interview, which was to discuss the aftermath of the e-commerce store launch.

4.5 Aftereffects of e-commerce

The final part of the interview was to evaluate the success of the e-commerce store after the launch, to compare the initial presuppositions with the feedback

from the store, and to consider what the companies would have done differently in hindsight. One of the final questions was to see whether the attitude of the employees has changed after the launch of the e-commerce store.

Many of the interviewed companies encouraged companies to pursue an e-commerce store should the opportunity arise and emphasize the simplicity of doing so. It was also mentioned that while the technical part of setting up an e-commerce store is as easy as finding a partner to do it and paying the bill, the hard part is to align the rest of your business with the store and to attract customers to the store.

> "I wouldn't say it's difficult to set up an e-commerce store, if you think you have a reason to do it, then go ahead and do it." (I7).

> "Why didn't I realize this five years earlier, I can do this kind of thing so easily and start selling things online. After setting up the e-commerce store, it has needed very little of my attention, it is there working, orders are coming in. That's what matters." (I4).

> "The technical part of setting up an e-commerce store, although also work-intensive, is the easiest part. The hardest part is to align your business with the e-commerce store, how to reach the customers, how to achieve the competitive advantage, and how to make the customers do purchases in the new e-commerce store, which requires a lot of planning and work." (I3).

One of the interviewees mentions that the biggest positive from e-commerce was gaining visibility, especially from a niche customer segment such as beer enthusiasts. It was also mentioned that selling of regular products was not so popular, but that e-commerce helped a lot when combined with a campaign, or something special, such as the "mystery box".

> "People don't want products, they want experiences. In the e-commerce store, there was a listing of regular products, and then there was a mystery box, where we chose a selection of drinks by ourselves. The mystery box was a hit product, its success surprised everyone. People don't want to decide what to drink by themselves, it seems. We also ran campaigns that worked well, we were able to move stuff that otherwise wouldn't be sold. But because a campaign was made and marketed well, people bought it." (I6).

4.5.1 Problem areas

Some of the interviewees had experienced minor technical problems after the launch, but those problems were solved almost immediately. One company had

a major setback with the first launch, but they took it as a learning opportunity and had a successful second launch. One company mentioned that the communication between inventory, cash register and e-commerce store is something that companies should focus on.

> "Mood after the project is good, not many problems. Some single problems with functionalities of the store, some messages didn't go through in the beginning, but it was quickly solved." (I2).

> "In retrospect, I would have focused more on the cash register, inventory and e-commerce store communicating with each other, to have one system that obeys all. Trying to combine the cash register and the e-commerce store was a struggle. The cash register company's desire to open the interfaces in such a way that the e-commerce store could talk to the cash register was impossible. Suddenly there were two systems from which sales were made, which unnecessarily complicated accounting." (I6).

> "The first launch of the e-commerce store however, failed. We decided to start fresh and to find a new way to launch the store, which eventually succeeded. This initial failed launch actually taught us a lot of how to handle the e-commerce business. In hindsight, if we hadn't started fresh and instead had kept going with the initial unsuccessful launch, it would have been a disaster. By failing, finding out what didn't work and why, and fixing those things, we were able to make the second launch a great success. The failure was not due to a technical problem, but a business side one." (I3).

Bigger problems after the launch had more to do with the business requirements and internal company processes. Also, the development of e-commerce sales did not always reach the expected goals.

> "In our company, the internal processes have not transformed into such that it would be natural to drive customers to the e-commerce store. Expected benefits were not seen immediately, and actually they have still yet to be seen. The development of e-commerce sales has been really slow, we have not experienced the expected sales yet. "Maybe we expected that the e-commerce store would sell products by itself, but since our company's products are so valuable, customers need more info and conversations with specialist before making the purchase decision." (I1).

> "We haven't had technical problems. Our servers are scalable, modern technologies are in use, no problems for a long time. After the cloud migration, there have been no problems and things work, there are problems, but mostly on 'other fronts'." (I5).

4.5.2 Attitude changes

The last question of the interview was to compare the mood and attitude in the company towards the e-commerce store, if attitude had changed or remained the same. Many companies mentioned that neutral attitude persisted, especially in the companies with higher amounts of employees, but the smaller companies mentioned sometimes even a 180-degree turn in the attitudes. Also, the companies who had great faith in their developers mention that they expected great things, they got great things, and that was it. Companies also reported feeling relieved and happy after seeing for themselves that the e-commerce store actually starts to generate revenue.

> "After the launch of the e-commerce store, it was a big relief to the company when they realized that they actually are able to sell their products online, and to create revenue. The mood of the rest of the company did not really change during the project. They expected a well-functioning e-commerce store, and that's what they got. The CEO made the order "do this e-commerce store", and I just went and did it, and came back with the finished product. The only one whose mood it affected was me, the creator. It was rather an empowering feeling." (I4).

> "The benefits were bigger than we anticipated. The reach of the e-commerce store was better than the company originally thought, and we were surprised about the success of the e-commerce store. Even the previously hesitant 'old guard' turned into e-commerce-hypers due to the success of the new store. Seeing the orders come in from the e-commerce store, it really turns the heads of the whole organization and puts a smile on everyone's face. It reaches the customers we wanted it to reach." (I3).

> "The attitude of the staff is still neutral, I'm not sure if most people even remember the e-commerce store, other than the people who actually have to work with it." (I1).

> "My attitude hasn't changed after launching the e-commerce store. I have quite a special situation, as I haven't had to spend any time selling or marketing my business, as customers come to almost pick me up from home. I have though lot about how to scale my e-commerce store, but as a one-person company, the problem is that I never have time for everything." (I2).

> "Attitude hasn't really changed. We thought it would sell more fishing supplies and such, but it's mostly selling food products. Maybe we should update the e-commerce store more." (I7).

> "Compared to my assumption, which was zero, the products sold well initially after the launch, the attitude of the staff also improved and even enthusiasm was noticeable. The 'Save the restaurants' -idea which came during the pandemic helped a lot, but eventually this enthusiasm faded away. People forget. For a restaurant entrepreneur, setting up an e-commerce store, at least for selling liquor, is hopeless, until the legal side changes and we get to the 2020s, now I feel we are at the turn of the 50s and 60s." (I6).

In the end of the interview, some of the interviewees also pondered the future trends and possibilities of e-commerce, and several emerging technologies was also mentioned. This kind of future planning seemed to mostly be the thing of bigger companies, where they have a whole team for e-commerce development. As most companies interviewed did not have this kind of a big e-commerce development team, except for one, the future of e-commerce was not discussed that much during most of the interviews.

> "The most important first future step is the growth of 3D implementations for e-commerce stores. Convergence of brick-and-mortar and e-commerce, digital salespersons & video sales are coming. The role of online shopping is growing even more, and with it, the importance of mobile devices will increase in purchasing transactions." (I5).

> "E-commerce stores, when used well, can create a business that is not limited by society, and can even act as a backbone for it. Maybe in the future there will be no brick-and-mortar stores and physical locations at all." (I6).

5 DISCUSSION AND CONCLUSIONS

In this final chapter I will discuss the results of the research and what they mean, I will also try to provide answers for the research questions presented in the beginning of the thesis. The research questions selected were to determine the commonalities in successful e-commerce projects, and how the theoretical frameworks of innovation adaptation are aligned with them. The two research questions selected were:

- What are the commonalities in successful e-commerce projects?
- How are the theoretical frameworks aligned with the factors defining a successful e-commerce launch?

Based on the interviews, the commonalities with successful e-commerce launches are to involve the whole organization in the planning, to have strategy workshops and to consider the companies' customer and market segments when deciding a marketing strategy. The successful e-commerce projects also had a developer that they trust. These were the most important commonalities between the interviewed e-commerce projects that succeeded. Here I have attached a condensed version of the results (Table 3), and the full table can be found in Appendix 1. The implications of this table are discussed in the next chapter.

Table 3 – Results of the interviews: a condensed version.

Interview ID	PE	EE	SI	FC	Hedon.	Price	Habit	Obs.
1	+	+	+	-	+	+	-	-
2	+	+	0	+	0	+	0	+
3	+	+	+	0	0	+	+	+
4	+	+	+	+	0	+	+	+
5	+	+	+	+	0	+	+	+
6	-	+	0	-	0	+	+	-
7	+	0	0	0	0	+	+	0

Meaning of symbols: ***+*** *having a positive effect,* ***-*** *having a negative effect,* ***0*** *having no effect. Abbreviations:* ***PE*** *= Performance Expectancy,* ***EE*** *= Effort Expectancy,* ***SI*** *= Social Influence,* ***FC*** *= Facilitating Conditions,* ***Hedon*** *= Hedonistic Motivation, and* ***Obs*** *= Observability.*

5.1 Conclusions

The differences and why some e-commerce stores have less success also depend strongly on the industry they're in. The less successful e-commerce project was in the alcohol restaurant industry, which is heavily regulated in Finland and the entrepreneur couldn't use the strategies that less-regulated businesses used. From the 7 interviewed companies, I can say that 4 have had great success (I2, I3, I4, I5), one company had less success than they hoped for (I1), one had quite neutral results (I7), and one company failed after initial success (I6). One has to also remember that these are completely random individual experiences and can't be used to explain the phenomena as a whole. Some method might work for a certain company, and that same method might have disastrous results for another company.

For the second research question, I must consider the companies whose e-commerce stores had the most users after launch, because the theoretical frameworks are about technology adoption, and more users means a higher adoption rate. The companies with the highest number of users are I3 and I4. The former company credits their success to having involved the whole organization in the development process, and by not being afraid to fail and try again, should things not go in the desired way. The latter company credits their success mostly to the quality of their products, which 'sell themselves'. This was also combined with a successful and well-functioning e-commerce store, as well as a good marketing strategy and campaign. The biggest e-commerce store (I5), credits their continuous success and growth to following technology trends and competitors, fusing the e-commerce store with marketing, and having regular check-ups with the sales teams and other people actually using the e-commerce store.

To answer the second research question, I constructed a table that has all interviews, whether a certain technology acceptance element was mentioned or not, and whether that element had a positive (+), negative (-), or a neutral (0) experienced effect. The chosen technology acceptance elements were introduced in chapter 3.3. The most influential UTAUT factors were *performance & effort expectancy, and price value.* Companies taking their first steps of digital transformation and e-commerce are often doing it to increase their performance, lessen the required effort to achieve it, and to do all of this with spending as little money as possible. This was clearly observed in the interviews as well, as those three elements had a + in almost every project. Facilitating conditions also had a visible presence. Most companies credited their success to having a good developing partner, which is a direct facilitating condition. Another factor that can be seen as a facilitating condition is receiving funding, as all but two of the interviewed companies had received Business Finland funding for the planning stage of the e-commerce store (due to legal reasons, the funding could not be used for direct e-commerce development costs). Social influence was also

mentioned a few times, but with variations. Some mention the pressure coming from competitors, but most mention it came from within the company. A few companies did not think social influence played any role in the project. Hedonic motivation and habit were not involved in the interviews that much, as I quickly found out through the first interviews that they mostly confused the interviewees. Habit was not present as creating an e-commerce store was a new thing for the companies interviewed, and no habits regarding it have yet formed. The themes of age, gender and experience were scarcely mentioned in the interview. Age & experience were mentioned a few times, gender once.

5.2 Limitations and future research

The aim of this study was to provide an overview about the current theoretical frameworks behind technology adaptation, and to support that theory with empirical data through interviews. However, this research was limited to the experiences of seven Finnish companies and cannot be used to explain bigger trends. The experiences of the seven interviewed companies are completely random individual experiences and cannot be used to explain cause and effect relationships between the theoretical frameworks and the results. This study was also limited to Finland only and should not be used to explain global phenomena. Future research about this subject could be limited to a certain industry or company size and focus on the experienced effect of a different technology, such as remote teamwork or artificial intelligence applications. Future research could also be limited to certain functions of e-commerce, such as user experience, inventory management or e-commerce ads.

6 SUMMARY

The aim of the master's thesis entitled "Digital transformation through e-commerce in Finnish small and medium-sized enterprises – a multi-case study" was to find out the commonalities in successful e-commerce projects, and to explain the theoretical frameworks behind them. The theoretical frameworks selected are based on three technology acceptance models, which are the Innovation Diffusion Theory, Technology Acceptance Model, and the Unified Theory of Acceptance and Use of Technology. The empirical part of the research was conducted as a qualitative multi-case study, to provide more compelling and robust answers. This thesis started by going through the conceptual basis of study, which was digital transformation, and then explained how e-commerce is a vital part of it. The final part of the conceptual basis was about the Covid-19 pandemic, as it was the factor pushing many companies to overgo a digital transformation, and especially to launch their e-commerce store. The empirical data was gathered mostly from companies that had received "covid funding" from Business Finland, to help them stay afloat during difficult financial times. Therefore, the importance of Covid-19 on the thesis had to be addressed. After going through the conceptual basis of the study, the next part was the literature review part.

The literature review introduced the technology acceptance models included in this thesis. These were the Innovation Diffusion Theory, Technology Acceptance Model, and the Unified Theory of Acceptance and Use of Technology. The oldest model being the Innovation Diffusion Theory first published in 1962 by Everett Rogers. The second model, Technology Acceptance Model was first presented in 1989 by Fred Davis but was based on the 1975 research entitled "Theory of Reasonable Action" by Fishbein & Ajzen. The third acceptance model was the Unified Theory of Acceptance and Use of Technology which was first published in 2003 by Venkatesh et al. These theoretical frameworks have been researched a lot before, and as two of them (TAM & Innovation Diffusion Theory) are around half a century old, it is no surprise that the amount of earlier research is so wide. The UTAUT model has been modified by the original authors a few times, the first time in 2000 and the second time in 2008. The Innovation Diffusion Theory has also been used and modified in multiple earlier studies, such as the wine screw cap research (Atkin, Garcia & Lockshin 2006), and the research about technology adaptation in Saudi Arabia (Al-Gahtani (2003). The TAM model has also been used in hundreds of earlier studies, mostly because of its simplicity. Although being widely used, TAM has been broadly criticized for several reasons, such as not being flexible to the new technologic innovations (Malatji, Eck & Zuva, 2020), or not being suitable for free open-source technology, since being free creates an incentive for the users

(Ajibade, 2018). Furthermore, TAM and Innovation Diffusion Theory have been combined in a study by Lee, Hsieh & Hsu (2011), to form a new model that explains the determination of TAM-factors based on the innovation diffusion theory.

The empirical part started by explaining the methodologies behind the research (qualitative, multi-case study, thematic analysis), before moving onto the results. The results were grouped into four main categories based on the material gathered from the interviews. The four categories that developed during the interviews were presuppositions, initialization, resources and aftereffects of e-commerce. The presuppositions had mostly to do with reducing workload, potential profits and cost savings. The pandemic was the driving factor for almost all projects, and the attitudes towards e-commerce were mostly neutral. In the initialization part of the interviews, it was noticed that most of the companies did not take routinization of the new e-commerce tore for granted but focused on marketing to make it happen. The companies also mentioned that the pressures for development came mostly from within the companies, instead of external pressures. It was also pointed out that B2B sales are difficult to do through e-commerce, and that the stores were mostly developed with B2C sales in mind. The resources' part asked the interviewees about resource management of the projects and found out that the most valuable resources were information/knowledge resources, and more specifically the ability to teach yourself. The importance of a good developing partner you can trust was also mentioned several times. Finally, the last part of the interviews was to discuss the aftereffects of the e-commerce store launch. It was mentioned a few times that the hard part is not the technical setup of the e-commerce store itself, but the alignment of your business model around the new store and how to attract customers to the store. In many companies, neutral attitudes persisted, especially in the companies with higher amounts of employees, but the smaller companies mentioned sometimes even 180-degree turns in the attitudes.

After the empirical research part, the next part was about discussions and conclusions divided from the results. As this was a multi-case study of just seven individual companies, the results cannot be generalized and can only be seen as experienced individual effects. The results were visualized in a table, which was then analyzed a little bit more. From the table, the results were quite aligned with the factors determined at the end of the literature review chapter, with the most visible results being performance expectancy, effort expectancy, and price. These were in some form or other mentioned in every interview. The answer to the first research question "what are the commonalities in successful e-commerce launched" was, based on the individual experiences of the interviewees, which involving the whole organization in the planning of the e-commerce store, to have a developing partner they trust, and that the results depend strongly on the industry they are in. The answer to the second research question can be seen in the table presented in the results. Some of the factors of the theoretical frameworks, such as effort expectancy, performance expectancy and price were strongly aligned with the interviewee's experiences. Other strongly aligned

factors of the theoretical frameworks were social influence, facilitating conditions, observability and habit. After answering the research questions, the thesis concluded by suggesting a direction for future research, which could be focused on a certain industry or technology, and by emphasizing the limitations of this study being that the empirical research is based on seven individual experiences and cannot be generalized or used to explain bigger trends.

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APPENDIX 1: INTERVIEW RESULTS IN TERMS OF THEORY

ID	PE	EE	SE	FC	Hed.	Price	Habit	Obs.
1	+	+ considered beforehand, thought to be easy, was actually hard	+ thought about for a long time, the pressure came from within the company	-, wasn't good enough, didn't think about it enough beforehand	+, hedonic motivation was said to play a small part	+	-, routinization was taken for granted, but didn't happen	-, not pleased with the results
2	+, age had a big impact, older people possessed less PE	+ considered beforehand, took a lot of work hours to learn	0, hadn't considered it	+, trust in the developer, good support	0	+	0, was not thought about, no need	+, neutral/slightly positive
3	+	+ considered beforehand, toughest task was to teach others to use	+, demand since a long time, pressure came through competitor and employees	0, developer found online	0	+	+, thought about in advance - worked	+, very happy with results
4	+	+ considered beforehand, toughest task was to teach others to use	+, was immediately apparent that it was needed	+, developed in-house, facilitating conditions good	0	+	+, thought about in advance - worked	+, very happy with results
5	+	+ thought out in advance	+, the pressure came from competitors and the demands of technology	+, continuous development from the beginning, now at good level	0	+	+, thought about in advance - worked	+, Happy with the results, focus on continuous development
6	-, was not believed to be useful	+ thought out in advance, staff was prepared	0	-, trust in the developer, but integrations and legalities brought big problems	0	+	+, thought about in advance - worked initially, but failed in the end	-, initially happy, but end result was not good
7	+, small benefits expected	+-,the 3rd party developers had two different opinions (easy - hard)	0	0	0	+	+, thought about in advance - neutral results	0, very neutral about the results

APPENDIX 2: STRUCTURE OF THE INTERVIEW IN ENGLISH AND FINNISH

Introduction

1. Introducing myself
2. Introducing the purpose of the study
3. Informing interviewee about the anonymization and privacy
4. Informing interviewee about the right to not answering a question
5. Informing interviewee about the right to stop the interview
6. Obtain consent to record the interview and use the results in scientific research

Background information about the interviewee

1. Tell me about your career & professional background
    a. What size is the company you're working in?
    b. What is your job title?
2. Describe your daily work
3. How long have you been working in this field?
4. What is the age and size of the e-commerce store implemented?

Presuppositions about e-commerce

1. What were the expected benefits of the e-commerce store prior to launch?
2. What were deemed the biggest challenges of the project beforehand?
3. What was the attitude of the staff towards the new e-commerce store?

Initialization of the e-commerce project

1. Tell me about the background motivation for the e-commerce store implementation.
2. Did the motivation include hedonic motivation, which refers to the pleasure derived from using the new system?
3. Did the motivation include price motivation, which refers to the comparison between the cost of the e-commerce store, and the expected profits it would bring?
4. Was the routinization of the new e-commerce store taken for granted? How did it affect the planning of the store?
5. Tell me about the social influence, was there any pressure coming from clients/competitors/employees to develop the e-commerce store?
6. Were there any other facilitating conditions to make the e-commerce store development easier?
7. Did the demographics of the employees affect the initialization phase?

Resources

1. What resources, knowledge or skills did the project require?
2. Were these resources easily available?

3. Were some more resources needed or what should've been done so that the resources could've been used more efficiently?
4. Can you think of any challenges that limit the acquisition or use of a resource?

Aftereffects of the e-commerce store

1. How were the benefits and challenges of e-commerce seen after the project?
2. Was the project deemed a success? Why or why not?
3. What was the attitude of the staff towards the e-commerce store after its implementation?
4. Any other words about the mood after the e-commerce store was launched?

Termination of the interview

1. Asking if there is anything in the answers that the interviewee wants to clarify, change or specify
2. Thanking the interviewee
3. Telling the interviewee how the process will move forward

Johdanto

1. Itseni esittely
2. Tutkimuksen tarkoituksen esittely
3. Ilmoitetaan tulosten anonymisoinnista ja yksityisyyden suojaamisesta
4. Ilmoitetaan haastateltavalle oikeudesta olla vastaamatta kysymykseen
5. Ilmoitetaan oikeudesta keskeyttää tai lopettaa haastattelu
6. Hankitaan suostumus haastattelun nauhoittamiseen ja tulosten käyttämiseen tieteellisessä tutkimuksessa pyytämällä lupa haastateltavalta

Haastateltavan taustatiedot

1. Kerro urastasi ja ammatillisesta taustastasi
    a. Minkä kokoinen on yritys, jolle työskentelet?
    b. Mikä on työnimikkeesi?
2. Kuvaile päivittäistä työtäsi
3. Kuinka kauan olet työskennellyt tällä alalla?
4. Minkä ikäinen ja minkä kokoinen verkkokauppa on, joka toteutettiin?

Ennakko-oletukset verkkokaupasta

1. Mitkä olivat verkkokaupan odotetut hyödyt ennen julkaisua?
2. Mitä pidettiin projektin suurimpana haasteena etukäteen?
3. Mikä oli henkilökunnan asenne uutta verkkokauppaa kohtaan?

Projektin aloitus

1. Kerro hieman verkkokauppaprojektin taustamotivaatiosta.
2. Sisältyikö motivaatioon hedonista motivaatiota, jolla viitataan uuden järjestelmän käytöstä saatavaan mielihyvään?
3. Sisältyikö motivaatioon hintamotivaatiota, joka viittaa verkkokaupan tuottavuuteen?
4. Pidettiinkö uuden verkkokaupan rutinoitumista itsestäänselvyytenä? Miten se vaikutti verkkokaupan suunnitteluun?
5. Kerro sosiaalisesta vaikutuksesta, tuliko asiakkailta/kilpailijoilta/työntekijöiltä painetta kehittää verkkokauppaa?
6. Kerro olosuhteiden merkityksestä, mitä helpottavia olosuhteita projektin osalta tulee mieleen?
7. Kerro työntekijöiden demografioiden merkityksestä.

Resurssit

1. Mitä resursseja, tietoja tai taitoja projekti vaati?
2. Oliko näitä resursseja tarpeeksi ja oliko niitä helppo hankkia ja hallita?
3. Tarvitaanko jotain resursseja lisää tai mitä tulisi tehdä, että resursseja voitaisiin hyödyntää tehokkaammin?
4. Kerro haasteista, jotka rajoittavat jonkun resurssin hankkimista tai käyttöä.

Jälkitunnelmat

1. Miten projektin hyödyt ja vaativuus nähtiin verkkokaupan käyttöönoton jälkeen?
2. Pidettiinkö projektia onnistuneena, miksi tai miksi ei?
3. Mikä oli henkilökunnan asenne verkkokauppaa kohtaan sen käyttöönoton jälkeen?
4. Muita kommentteja tunnelmasta verkkokaupan avaamisen jälkeen?

Haastettelun päättäminen

1. Kysytään, onko vastauksissa jotain, jota haastateltava haluaa selventää, muuttaa tai täsmentää
2. Haastateltavan kiittäminen
3. Kerrotaan haastateltavalle, miten tutkimusprosessi tästä etenee.