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BORN DIGITALS

A Multiple Case Study on the
Internationalization Process of Nordic Healthtech Firms

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Supervisor: Richard Nakamura

Authors: Johanna Carlson and Philippe Muller

Abstract

The entrance of digital technologies has led to the emergence of Born Digital firms, who internationalize by digitalizing their value chain. Prior research on the internationalization process of small and medium-sized enterprises (SMEs) has to a large extent focused on the phenomenon of early and rapid internationalization due to technological innovations facilitating this process, as well as the importance of networks therein. However, little attention has been directed towards digitalized value chains and how they affect the internationalization process in the healthtech service sector. In order to address this research gap, this thesis focuses on the case studies of nine Nordic healthtech companies and analyzes qualitative interview data on their internationalization process. The analysis concludes that Born Digitals in the healthtech service sector are born at home rather than born global, and that firms with a digitalized value chain have the opportunity to be global if they desire to, only that they are restrained by national regulations. As such they gradually expand, however quicker than traditional companies because of digital opportunities decreasing the need for a physical presence. The findings also conclude that a short psychic distance or a need for digital healthcare services are crucial factors in the decision of which foreign markets Nordic healthtech firms expand to. Lastly, as gaining credibility in networks is time consuming for healthcare providers, the findings show that foreign expansion is a gradual process across networks for Born Digitals in the healthcare sector.

Key words: SME internationalization, Born Digitals, digitalized value chain, digital healthcare services, Nordic healthtech industry, internationalization speed, geographical expansions, networks.

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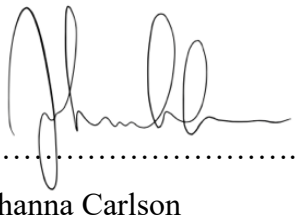

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Definitions

Born Digitals	*Firms that internationalize by digitalizing parts or all of their value chain soon or directly after inception.*
COVID-19	*Pandemic that has affected all industries in their way of conducting business and has explicitly accelerated the adoption of digital technologies.*
Digitalized value chain	*Core activities, inward and outward, being activated or coordinated by internet applications and technologies instantly after the firm's inception.*
Nordic region	*Geographical region that includes Denmark, Finland, Iceland, Norway and Sweden.*

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1. Introduction

1.1. Background

The National Board of Health and Welfare in Sweden (2020), defines healthcare as encompassing general healthcare providers that offer medical examinations, care and treatments of general conditions and diseases. Additionally, healthcare services can also include different specializations such as physiotherapy, therapy and dentistry.

While the healthcare industry is currently facing many challenges, especially within demographics and multi-morbidities (i.e., aging population and co-occurring diseases respectively), these challenges have led to an increase in the demand for more services in the industry. Co-occurring diseases in particular make healthcare more costly for the consumers. Thus far, digital technologies are believed to be one solution to mitigate these problems (Lapão, 2019; Pinto & Baracsi, 2012). However, the healthcare sector is recognized for lagging behind in terms of digital use in comparison to how digitalized other industries have developed since the digital revolution (Lapão, 2018). Scholars such as James et al. (2015) have found that the delivery of healthcare is often inefficient in terms of unnecessary services and overuse of emergency departments, but it is also prevalent in the involvement of patient care such as scheduling, test results and prescription refills. According to a report from McKinsey (2020), the COVID-19 pandemic has not only affected all industries in their way of conducting business but has also explicitly accelerated the adoption of digital technologies. Customer and supply-chain interactions as well as internal operations have drastically been transformed towards a more digitalized environment, and investments in this segment have increased since the outbreak of the pandemic. It is further emphasized that this digital transformation is a permanent change in terms of how firms in all industries conduct their business (Ibid.).

Accordingly, global healthcare is currently undergoing a profound change as reflected by the exponential advances and interoperability in digital technologies in modern society (Allen, 2020). This means that with the help of certain technologies, primary healthcare providers can deliver healthcare services in ways that are more efficient and preferrable towards the consumers rather than the care providers. This paradigm shift in healthcare has been argued to be the foundation of entirely new ways of conducting business in the sector. For instance, this

digital development is changing the way primary healthcare is delivered, shaping the business environment towards a more predictive, preventive and personalized future, increasing collaborations with relevant stakeholders in the industry as well as conducting more precise and less expensive and invasive healthcare (Allen, 2020). Due to these new disruptive technologies, an innovative industry has emerged which concerns the convergence of healthcare and technology, i.e., healthtech industry (Micca et al., 2020). As defined by the EU project HealthTech Nordic (2021), the industry is defined by "any solution that may contribute to the paradigm shift in healthcare through digitalization in a wide sense is healthtech." The emphasis thus lies on facilitating and enabling healthcare functions and solutions in ways that make the healthcare business environment more efficient. For instance, digitalizing core processes such as medical records or digitalizing patient interactions through software programs are both in the scope of healthtech (Champagne et al., 2019).

HealthTech Nordic represents the largest community for healthtech companies in Northern Europe. The project involves a collaboration between Danish, Norwegian and Swedish innovation hubs to accelerate the growth and internationalization of Nordic start-ups in the field of healthtech. The goal is to combine different ideas and resources in order to address the current needs of an advanced and digitalized healthcare (HealthTech Nordic, 2021). Furthermore, digital solutions within healthcare grew from 45 to 1000 new solutions between 2019 and 2020 (Interreg ÖKS ERDV, 2020). According to Valentin Bejan (2020), Co-founder and CIO (Chief Information Officer) of Health Tech Hub Copenhagen, investments in healthtech companies have increased tremendously since the pandemic of COVID-19, and an all-time high record was set in the first two quarters of 2019 as the most financially productive periods. In addition to that, in the last five years the healthtech industry has emerged to be one the most rapidly growing segments in the healthcare industry, where the number of financings has grown by 25% since 2015 (SVB, 2019).

1.2. Problem discussion

The healthtech sector is principally composed of SMEs, where the competition is global. Healthtech firms that are founded in small home markets, such as Sweden and other Nordic countries, are therefore often pushed to an early internationalization process while simultaneously commercializing their technological innovations (Laurel, 2015). However, it is argued that the global healthcare market is known for being a complex market as the formal

institutions in all countries are very different from each other. In particular, this regards the regulation and financing of the sector. In addition to that, Laurell (2015) further states that each country, as well as different regions within a country, have different regulative, normative and cognitive aspects that may impact the process of how firms internationalize as well as how their sales processes are conducted. International operations within the healthcare sector are thus recognized for being complex, slow and focused processes. Furthermore, Kayyali et al. (2017) have found that the healthcare sector is facing high levels of skepticism and misconceptions. For example, healthcare professionals have shown skepticism towards implementing telehealth since many lack relevant experience with these new solutions, where the fear of losing face-to-face contact with the patient plays an important role. Kayyali et al. (2017) further mention that the skepticism exists because of confidentiality issues about personal data, as well as a lack of confidence when the healthcare providers believe that face-to-face treatments result in better care. However, projects such as the HealthTech Nordic collaboration is accelerating the growth and internationalization of healthtech firms and while digitalization is currently developing a new phenomenon in the healthcare sector, the existing literature on digitalization and international business within the field of healthtech is rather scarce.

Previous studies on SMEs in international business have to a large extent focused on the phenomenon of early and rapid internationalization due to technological innovations facilitating the process (e.g., Knight & Cavusgil, 2004; Cavusgil & Knight, 2015; Oviatt & McDougall, 1994, 2005a; McDougall & Oviatt, 2000; Rennie, 1993). These innovations also resulted in an increased international competition in home-markets influencing product development and marketing activities. Moreover, these firms obtain a significant amount of the total sales from their international operations (Laurell et al., 2010). Companies of such characteristics have in previous studies been defined as *Born Globals* (Rennie, 1993; Knight & Cavusgil, 2004) as well as *International New Ventures* (Oviatt & McDougall, 2005b).

Born Digitals (Vadana et al., 2019) is another new concept that has been largely understudied, which makes it of special interest for this thesis project. It is outlined above that digital technologies facilitate the internationalization process; however, the concept of Born Digitals refers to companies that internationalize by digitalizing parts or all of their value chain soon or directly after inception. This includes core activities, inward and outward, being activated or coordinated by internet applications and technologies instantly after the firm's inception (Vadana et al., 2019; Monaghan et al., 2020). This digital phenomenon has led to the emergence

of an entirely new type of company (Brouthers et al., 2016; Vadana et al., 2019) which might oppose the traditional way of conducting business, but most importantly the traditional process of entering foreign markets. As value-added and digitally-enabled services make up the fastest growing segment in the healthtech industry, this further suggests that the industry is somewhat driven by service revenues and profits. Lavoie et al. (2018) have thus concluded that these firms require a different approach than what prior studies have focused on concerning Born Globals and International New Ventures. As such the focus might have shifted from product sales towards how integrated value-added and digitally-enabled services are within Born Digitals. Furthermore, many researchers (e.g., Li et al., 2012; Love & Ganotakis, 2013; Hewerdine et al., 2014) have focused on the internationalization pattern of small high-technological firms. Apart from biotechnology in the healthcare industry (Laurell et al., 2010), little academic attention has been given to how healthtech companies enter foreign markets, especially firms with a digitalized value chain.

A considerable amount of research has been published about the internationalization process, starting with the traditional perspectives of the Uppsala Model by Johanson and Vahlne (1977), which states that firms first internationalize via small steps by entering neighboring markets that have a shorter psychic distance to the home market countries (Hörnell et al., 1973; Johanson & Wiedersheim-Paul, 1975). However, with the speed of globalization picking up and more companies having the opportunity to gain quicker and easier access to the global market, the notions of Born Globals and International New Ventures were added to the research field on internationalization to try to fill in the gaps of the Uppsala Model and even to contest the traditional models to some extent.

International New Ventures and Born Globals mainly differ from traditional companies in terms of internationalization speed, which is a research field on its own. However, Hilmersson & Johanson (2015) raise multiple issues with the existing literature that are especially relevant for the concept of Born Digitals. For instance, there is a lack of research on how fast SMEs further spread in a market after their entrance, since the main focus has been on the time it takes before they start to internationalize (Hilmersson & Johanson, 2015). There is also limited research on the consequences of quick internationalization of SMEs, which is a research gap that remains to be explored for Born Digitals in general.

Researchers in the field of international business have acknowledged that a firm's level of experience plays an important role in the process of internationalization as it might delay the

development until it has reached a certain level of experience (Hilmersson & Johanson, 2015; Nummela et al., 2010). For traditional companies it has been argued that it takes resources and experience to start the internationalization process and to proceed in a successful way. To keep uncertainties at a reasonable level, the traditional way of internationalization starts once companies have acquired enough experience in the home market, after which they proceed to set up operations abroad. This results in the traditional way being rather slow in nature (Hilmersson & Johanson, 2015). While the internationalization process of Born Digitals is understudied, equally understudied is the degree to which the level of experience within that process plays an important role for Born Digitals in the healthtech sector.

The revisited Uppsala model of Johanson & Vahlne (2009) includes networks as a key element and discusses their importance for companies during their internationalization process. Even though networks play a crucial role in internationalization and innovation for the majority of the actors in the ecosystem, the notion of networks has been a well-researched concept for most research fields but lacks attention on Born Digitals in the healthtech sector.

When assessing these aforementioned concepts within international business, it is evident that there exist limited findings when it comes to the internationalization process of SMEs with a digitalized value chain i.e., Born Digitals. While it is recognized that the process of entering foreign markets within the healthcare sector is rather slow and complex, digitalization is perceived to accelerate and facilitate the growth and internationalization process of Nordic SMEs in the healthtech industry. Together with the fact that digitalization has contributed to the development of a new paradigm in the healthcare sector which ultimately is changing the way business is operated, it is also evident that the existing literature within the field of healthtech leaves many aspects unexplored, resulting in a two-folded research gap that remains to be further analyzed.

1.3. Purpose and research question

The purpose of this thesis is to address the research gaps highlighted above and thereby to contribute to the field of international business by analyzing Born Digitals in the healthtech industry. More specifically, the purpose is to seek a deeper understanding of the extent to which digitalized value chains affect the internationalization process of Nordic SMEs within the healthtech sector. Thus, the following research question will be assessed throughout this thesis:

How does a digitalized value chain affect the internationalization process of Nordic SMEs within the healthtech industry?

It is important to highlight that the authors of this thesis have used the definition of Vadana et al. (2019) to define the term of digitalized value chain. This includes core activities, inward and outward, being activated or coordinated by internet applications and technologies instantly after the firm's inception.

1.4. Delimitations

This thesis focuses on healthtech companies from the Nordic region, which delimits the case studies to Denmark, Finland, Iceland, Norway and Sweden. Furthermore, the analyzed companies were chosen based on specific characteristics such as their business model and firm size. For instance, we decided to only focus on SMEs offering digital healthcare services in the healthtech industry in which the value chain is digitalized at an early stage or instantaneously after foundation. Adding to that, the notion of healthcare is also delimited to only include segments such as general healthcare, therapy, physiotherapy and dentistry (Swedish National Board of Health and Welfare, 2020).

1.5. Research outline

This study is composed of six chapters. The introductory chapter has provided relevant background information on the research field, which was followed by an identification of the research gaps as well as an outline of the research question, purpose and delimitations of the thesis.

In the second chapter a literature review is conducted, where key themes and aspects within digitalization and internationalization theories are identified. Based on this, a conceptual framework is formed in order to analyze the extent to which a digitalized value chain affects the internationalization process of Nordic SMEs in the healthtech sector.

The third chapter includes a discussion of the research design and methodology of this thesis, outlining the data collection and analytical methods.

The following chapter presents the empirical findings of the study, drawing on qualitative interview data within nine case studies from the healthtech sector in the Nordic region.

The analysis of empirical findings is presented in the fifth chapter in connection to the theoretical framework, and thus also presents the outcomes of the study.

Finally, the last chapter features the conclusion which revisits the main findings in answering the research question. The conclusion also briefly outlines the research contributions of this study together with suggestions for further research in this area.

2. Literature Review and conceptual framework

2.1. Digitalization

The concept of digitalization, as stated by Vadana et al. (2019), refers to the use of digital technologies to improve a business model in order to provide new revenue and value-producing opportunities. The concept should however not be confused with the concept of digitization, which includes the process of converting data into digits (Brennen & Kreiss, 2014). In addition, the innovation of the internet has created a new marketplace, referred to as the digital market. According to Wittkop et al. (2018) and Vadana et al. (2019), firms establishing their operations in the digitalized market are also referred to by the more holistic term of "internet-based companies". Authors such as Brouthers et al. (2016), Hazarbassanova (2016) and Vadana et al. (2019) have further argued that the value creation and delivery of these firms are based on the web, mobile technologies and other computer-based information system technologies i.e., the infrastructure of the internet. Adding to that, they further acknowledge that if servers would stop working, internet-enabled companies would not be able to create and deliver their offered value to customers.

The effect and adaptation of internet technologies has been an attractive field of research since their rapid emergence in the beginning of the new millennium (Porter, 2001). Existing literature from Autio & Zander (2016), Cao et al. (2018) and Weill & Woerner (2015) demonstrates that digitalization profoundly transforms the business environment, challenges the competitive advantages of well-established firms such as Multinational Enterprises (MNEs) as well as creates opportunities for new organizations. Research from Porter & Heppelmann (2015) further suggests that the phenomenon of smart and connected products is transforming the traditional view of value chains and thus the concept might need to be modified to incorporate more digitalized aspects. Moreover, authors such as Lavoie et al. (2018) and Autio & Zander (2016) have concluded that the digital value delivered to customers is different from the value of physical goods. However, there are some researchers who suggest that the phenomenon of digitalization in entrepreneurship is still under development and that thus the full extent of digital transformations remains unknown (Brouthers et al., 2016; Wentrup, 2016).

2.1.1. Digital value chains

The notion of Born Digitals refers to companies that internationalize by digitalizing parts or all of their value chain soon or directly after inception. Such companies are characterized by activating or coordinating their core activities through internet applications and technologies directly after the firm's foundation (Vadana et al., 2019; Monaghan et al., 2020). The term "value chain" was first introduced by Michael Porter (1985) to describe the full range of activities that companies engage in to bring products or services from conception to end use and after-sales support. He further argued that the configuration of the value chain is a key aspect that defines the firm's competitive advantage. More specifically, Porter (1985) stated that the set of activities regarding the creating, producing, marketing and selling, delivering and supporting its products or services is what defines the value chain. Thereby the firm's competitive advantage is reliant on these activities. Current literature shows that the process of globalization has resulted in researchers using the concepts of global value chains (Raei et al., 2019) or global factories (Dickens, 2015) when a range of these aforementioned activities is located in various countries.

In contrast, only a few scholars have touched upon the subject of *digital* value chains (see Wentrup, 2016; Brouthers et al., 2016; Vadana et al., 2019; Monaghan et al., 2020; Yamin & Sinkovics, 2006), as the phenomenon of recent digitalization has led to the emergence of an entirely new type of company (Wentrup, 2016; Nambisan, 2017) that questions and transforms traditional processes of entrepreneurship (Nambisan, 2017). Porter & Millar argued already in 1985 that information technology was transforming the value chain and its premises, and thus changing the very nature of the linkages between the range of activities a company is composed of. However, Vadana et al. (2019) state that the evolution of digital activities within a value chain may depend on the industry as well as changes in the market, as they determine what adjustments are essential in the structure of the value chain. Most importantly, they conclude that digital technologies which are currently affecting the market provide Born Digital firms with an increasingly efficient way of internationalizing when digitalizing parts or all of their value chain.

It is further argued that Born Digital companies are profoundly different from traditional brick and mortar firms, and especially from firms that have only become digital by internalizing digital activities into the company. For instance, a study from Nambisan (2017) concluded that

Born Digital firms build and leverage digital infrastructure to facilitate the entrepreneurial processes. According to Wittkop et al. (2018), the determinants of competitive advantage are different for digital firms because factors such as product uniqueness and brand reputation are found to be more crucial than the traditional aspect of value chain efficiencies. Other scholars such as Bunduchi (2005) and Autio & Zander (2016) have stated that the differences are mostly related to reduced transaction costs and reduced asset and location specificities. In this light, Bunduchi (2005) argues that a digitalized business facilitates the internal and external communication and coordination, and thus lowers the transaction costs by offering virtual delivery channels. By contrast, Autio & Zander (2016) highlight that asset and location specificities play a minor role as these digital firms do not require a physical sales location nor do they need to relate to large supplies of capital.

2.1.2. Digitalization in the healthcare industry

As previously mentioned, the healthcare industry is currently facing many challenges such as a global aging population and co-occurring diseases, which has led to an increase in the demand for more services in the industry. Thus far digital technologies are believed to be one solution to mitigate these problems (Lapão, 2019; Pinto & Baracsi, 2012). In addition, scholars such as Kayyali et al. (2017) have found that healthcare is facing high levels of skepticism and misconceptions, as physical treatments still play an important role for the delivery of healthcare. They argue that skepticism can also be traced back to confidentiality issues about handling personal information in digital ways.

While the healthcare sector is recognized for lagging behind in terms of digital use (Lapão, 2018), the delivery of healthcare is often seen as inefficient in terms of unnecessary services, overuse of departments, patient scheduling, test results and prescriptions (James et al., 2015). More recently, the consequences of the COVID-19 pandemic may have permanently changed the industry and how health services are delivered. In particular, the pandemic has resulted in an accelerated adoption of digital technologies where customer and supply-chain interactions have drastically transformed towards a more digitalized environment (McKinsey, 2020). This trend has also been emphasized by Faraj et al. (2021), who notes the abrupt and massive increase in digital solutions due to the COVID-19 pandemic lockdown, where face-to-face interactions were greatly decreased throughout the sectors and replaced with a digital

alternative. This shift is seen as remarkable since the relationship between doctors and patients used to be based predominantly on face-to-face interactions (Ibid.).

Digital healthcare services are therefore emerging at a constant rate. Specifically, the domain of mobile health applications using the capabilities of smartphones, Internet of Things and sensor technologies has experienced a prominent growth in recent years. For instance, in 2015 it was estimated that 50% of more than 3.4 billion users of smartphones and other devices would have downloaded a mobile health application by 2018 (Volk et al., 2015). This paradigm shift in healthcare has been argued to be the foundation of entirely new ways of conducting business in the sector. In other words, this digital development is changing the way primary healthcare is delivered (Allen, 2020).

2.2. Internationalization

As international business is an integral part of this thesis, it is important to consider theories on the internationalization of firms. For the purpose of this thesis, the authors pursue a review of relevant literature regarding the Uppsala Model, Born Globals and network theories. The growing relevance of SMEs in the global economy has led to an increased interest from academic researchers due to the extensive innovation of new technologies (e.g., Li et al., 2012; Love & Ganotakis, 2013; Hewerdine et al., 2014). Moreover, short-term views of internationalization are limited in that they only focus on international sales and exports (Hilmersson & Johanson, 2015). This might therefore not be the most fitting approach for analyzing the internationalization process of Born Digitals in the healthtech sector since these firms dispose of characteristics that differ from traditional firms (Brouthers et al., 2016; Wittkop et al., 2018). Thus, when reflecting upon the new concept of Born Digital firms and how they internationalize, while existing literature reviews are rather scarce on the topic, we believe that factors such as speed, geography and networks are of utmost importance to understand and contribute to the behavior of Born Digital SMEs. The following sections will therefore review relevant literature and theories regarding these three essential elements of the internationalization process.

2.2.1. Speed

Speed has been identified as a key aspect of the internationalization strategy of SMEs. It plays an important role in the decision making of the firm since assigning resources to an international

opportunity is said to be positively correlated with a quicker and more sustainable internationalization. This is a particularly important consideration in the decision-making process of SMEs since they dispose of limited resources (Chetty et al., 2014).

Autio et al. (2000) and Yamin & Sinkovics (2006) explain that internationalization speed has two sides to it. On the one hand, speed stands for the time between the creation of the firm and its earliest entrance to an international market. On the other hand, internationalization speed also describes the subsequent pace of international expansion of the firm after the first international market has been entered. This is an element that Hilmersson & Johanson (2015) specifically focus on as they advance the definition of internationalization speed as the amount of time it takes for a company from first expanding its operations internationally to reaching a certain degree of internationalization in that foreign market. Wentrup (2016) emphasizes a third side of internationalization speed, namely the online-to-offline interval. This concept measures the time that passes between a firm's online presence in a market to the moment when it offers an offline presence in that country market by physically employing staff and tangible resources on site. Given the various definitions of the concept of speed in the literature, this thesis will only refer to internationalization speed as the time it takes from first inception of the company to the entrance of a foreign market.

A considerable amount of research has been published about internationalization speed, starting with the traditional perspectives of the Uppsala Model by Johanson & Vahlne (1977) which states that large firms first internationalize via small steps by entering neighboring markets that have a shorter psychic distance to the home market countries (Hörnell et al., 1973; Johanson & Wiedersheim-Paul, 1975). For traditional companies it has been argued that it takes resources and experience to start the internationalization process and proceed in a successful way. As such, the traditional way of internationalizing is argued to be a rather slow process (Hilmersson & Johanson, 2015). According to Hilmersson & Johanson, (2015) and Nummela et al., (2010), a firm's level of experience plays an important role in the speed of internationalization as it might delay the development until it has reached a certain level of experience.

With the speed of globalization picking up and more companies having the opportunity to gain quicker and easier access to the global market, the notions of "Born Globals" and "International New Ventures" were added to the research field on internationalization in an attempt to fill in the gaps of the Uppsala Model and even to contest the traditional models to some extent. These

theories suggest that technological innovations have accelerated the speed of internationalization as firms can enter foreign markets directly from inception (Oviatt & McDougall, 1994; Cavusgil & Knight, 2015), and further imply that SMEs have an opportunity to challenge the competitive advantages of well-established MNEs. Studies from Luostarinen & Gabrielsson (2006) have found that the domestic stage of a born global firm prior to the first foreign market entry has an average time of 2.1 years. Their study included multiple case studies of 30 firms that rapidly passed through the traditional stages of internationalization, skipping over some stages when entering foreign markets. This study further found that, in some cases, firms even progressed in reverse order. In comparison, the domestic stage of traditional enterprises is ten times longer (Ibid.). While the extant literature on internationalization speed of Born Digitals is rather scarce, research on healthcare regulations has been given more attention.

For instance, Volk et al. (2015) have argued that mobile health applications face many legal risks with a consequence of possible legal obligations and specificities regarding the intended use, which might be seen as a challenge for these digital firms when operating internationally. Furthermore, scholars such as AlSudiary (2015) imply that the mobile phenomenon has helped service providers to improve their capabilities, information processing, retrieval, and their service efficiency. Although digitalization has led to significant opportunities for service firms, AlSudiary (2015) raises the concern that security and privacy of sensitive data are a difficult challenge generally for mobile service applications for all industries. Laurell (2015) suggests that the healthcare sector is a complex market as formal institutions can vary from country to country, specifically in terms of regulations and financing of the industry. As such, healthtech companies may be hindered by these aspects when trying to expand their operations abroad, which suggests that entering foreign markets in the healthcare sector is a complex, slow and focused process.

A final point to consider in relation to internationalization speed is geography, which is also the focus of the subsequent section. Wentrup (2016) argues that the speed of internationalization is impacted by the choice of a geographical market, which is due to geographical as well as psychic distance. However, Moen et al. (2004) and Yamin & Sinkovics (2006) claim that the significance of psychic distance is reduced through the use of the internet. In sum, the theories on internationalization speed are rather divergent, and even contradictory in some cases.

2.2.2. Geography

According to Corado Simões (2019), geography plays a central role for the internationalization process of firms since there are significant differences in national and regional regulations, languages and cultures across borders. Local conditions and regulations need to be abided by even if the business is of digital nature, which Corado Simões (2019) describes as the adaptive capacity of the firm. Geography is also important in terms of selling products and services. In this light, Oakey (1993) claims that even though the production base might be localized for small high-tech firms, the potential market for their products and services is much bigger and is therefore of great importance. In other words, opening a market beyond national borders provides firms with additional sales opportunities, which represents a competitive advantage (Sapienza et al., 2006).

Wurster & Evans (2000) and Lituchy & Rail (2000) claim that internet-based firms are able to benefit from a global market because of lower transaction costs and a wider reach, both of which are enabled by the internet. However, it remains unclear whether such firms can truly benefit from a global market when the internet penetration levels have not reached the saturation level in all parts of the world, since some countries e.g., in Africa, have not yet reached the saturation levels of internet users as in the OECD countries (The World Bank, 2020). In addition, Chen (2006) argues that the internet has limited influence on the internationalization of internet-enabled firms and stipulates that especially Business-to-Consumer firms undertake regional expansions. Furthermore, it is argued that internet-based firms internationalize where the internet market is emerging at the highest speed, regardless of the psychic distance between host and home country (Chen, 2006).

The extant literature on healthcare applications and their internationalization patterns is rather scarce, while the literature on mobile applications and international operations has been given more attention (see for e.g., Shaheer et al., 2020; Ouhbi et al., 2017). For instance, Shaheer et al. (2020) argue that digital firms, specifically those that offer mobile applications, acquire critical location advantages in their international operations. They do so by strategically expanding to lead markets that have a higher demand heterogeneity in their market or provide local preferences that overlap with other foreign markets. Similar studies from Kerr et al. (2016) show that digital firms offering mobile applications establish international operations with one lead market first, so as to understand the interaction of the applications. This facilitates the

making of necessary developments and modifications so that the global appeal of the mobile application can be improved. Shaheer et al. (2020) and Kerr et al. (2016) thus suggest that firms providing mobile applications use lead markets as a first step of internationalization in order to acquire a further global expansion of their mobile services. Additional studies on online service providers from Wentrup (2016) have revealed that such firms are born at home rather than born global, meaning that they use the home market as a springboard before entering foreign markets. Wentrup (2016) also reveals that such firms undertake regional expansion in the early phase of internationalization due to having an iterative approach towards their online service. Other scholars have also found that a firm's first foreign expansion is usually made through a network partner in close proximity to the home-country (Moen et al., 2004), and the role of networks in internationalization is explored in the following section.

2.2.3. Networks

It has been established that especially for SMEs, membership in a network has numerous benefits since it can function as a facilitator to internationalization (Hohenthal et al. 2014; Manolova et al. 2014; Coviello & Munro 1995; 1997). Networks are also highly important to firms since being integrated helps prevent liabilities of outsidership that affect firms that are not included in the network (Johanson & Vahlne 2009). The importance of networks in the process of entering international markets has been emphasized in the revised version of the Uppsala Model (Johanson & Vahlne, 2009), the born global framework (Cavusgil & Knight, 2015) as well as by other scholars (Johanson & Mattsson, 1988; Coviello, 2006; Brouthers et al., 2016). Researchers such as Brouthers et al. (2016) explicitly argue that Born Digitals are more likely to concentrate their international process through the development of networks, and networks are therefore of importance for this thesis.

Formally, network theory emerged as a perspective explaining the internationalization process of SMEs, as such firms tend to lack certain resources and capabilities that are essential when entering foreign markets. In order for SMEs to mitigate such constraints, they internationalize through network relationships (Coviello, 2006). Accordingly, networks have been shown to play a vital role for SMEs in their internationalization strategies (Brouthers et al., 2016; Coviello, 2006; Laghzaoui, 2011). Participation in relevant networks allow SMEs to access a reservoir of knowledge, resources, experience and finance to further broaden the firm's relationships in order to gradually expand their business to international markets (Laghzaoui,

2011). Therefore, networks are an essential element for a successful foreign market entry that Johanson & Vahlne (2009) highlights in the revisited Uppsala Model.

In line with Johanson & Mattsson (1988), SMEs expand to international markets in three stages: establishment of a position in the foreign network (prolongation); development of the already existing position in the network and increase of its resources of commitment (penetration); and lastly coordination of relevant and different national network positions (integration). As such, network theory suggests that the internationalization process of SMEs is a consequence of the actions of developing a position within a network. Furthermore, Brouthers et al. (2016) and Johanson & Vahlne (2009) have argued that these firms are subjected to less liabilities of foreignness when expanding internationally, which refers to the constraints of being a foreign firm conducting business in a foreign market. Instead, they argue that SMEs can be subjected to liabilities of outsidership, which refers to the constraints they may face when they have not established a position within a network. However, some scholars are concerned about whether or not these networks are borderless, and argue that national differences cannot be ignored, even within networks. For instance, it has been argued that specific national institutions may influence the structure as well as the relationships within a network. Networks and their relationships may therefore be more complex than what is currently suggested in the literature (Hilmersson, 2011; Jansson et al., 2007).

A study from Lagerström & Lindholm (2020) shows that companies from the healthcare sector overcome the liability of outsidership by participating in networks through a step-by-step process and through industry and interest organizations. More specifically, Lagerström & Lindholm (2020) argue that internationalization of healthcare firms is not only a sequential process defined by the Uppsala Model, but also that the process requires incremental activities prior to entering the foreign market to prepare for the new expansion, such as gaining legitimacy for example. Furthermore, the perception of a firm's legitimacy has been noted to play an important role when establishing a foothold in a network, as the relationship with other network partners functions as a judgment of the acceptance, credibility and desirability of the new firm (Bangara et al., 2012). Accordingly, the legitimacy of a firm is a springboard for creating and upholding relationships, however Bianchi & Ostale (2006) argue that it is difficult for a firm to be perceived as legitimate without any local relationships and building relationships has been shown to be a costly, time-consuming and uncertain process (Johanson & Vahlne, 2006). This further suggests that the internationalization process is a gradual process across networks. In

line with the above, Coviello & Munro (1995) also found that networks may in some cases have a constraining effect on the internationalization process of SMEs, specifically regarding smaller players that do not dominate other actors in the network. In sum, the development of network relationships may be able to accelerate as well as constrain the internationalization process of SMEs.

2.3. Conceptual framework

To analyze the extent to which a digitalized value chain affects the internationalization process of firms in Nordic SMEs in the healthtech service sector, the authors of this thesis have integrated the above reviewed literature findings in a conceptual framework. The model is graphically presented in *Figure 1* below. Drawing on theories related to the Uppsala Model (1977; 2009), Born Globals and International New Ventures (Oviatt & McDougall, 1994; Cavusgil & Knight, 2015), this model identifies *speed, geography* and *networks* as interrelated key themes. It explores their relevance for two fields: digitalization and internationalization as they relate to SMEs with digitalized value chains entering foreign markets. This framework can provide a deep understanding of the internationalization process of healthtech firms as well as Born Digitals.

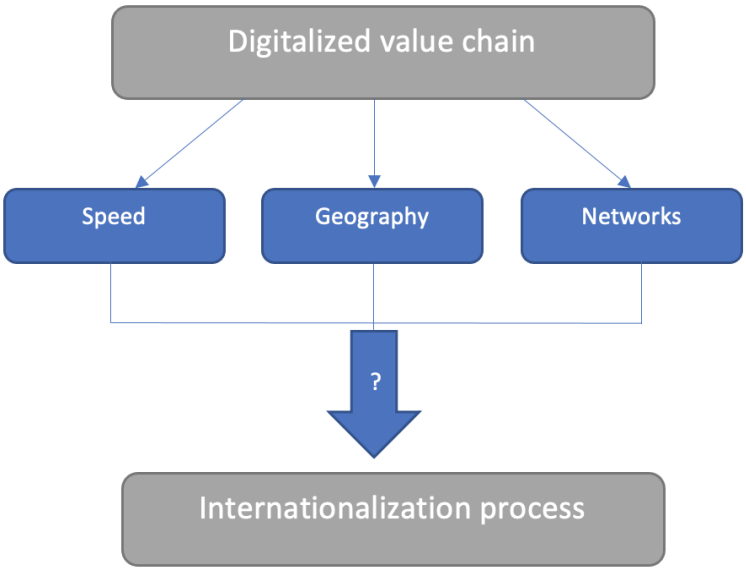

Figure 1: Conceptual framework. Inspired by Wentrup (2016, pp. 569), created by authors of this study.

The creation of the conceptual framework was inspired by Wentrup (2016, p. 569) who conducted a study on the online-offline balance and internationalization of Swedish online service providers. Wentrup (2016) identified three important elements that would affect such firms in their international expansions, and a similar conceptualization has been made for the field of research of this thesis. For the purposes of the present study, the framework has been amended in order to be integrated with the case studies analyzed in this thesis. For instance, Wentrup (2016) uses the concepts of speed, geography and mode of entry as the underpinning determinants of foreign market entries. For this study, mode of entry is replaced with a focus on networks. We base this decision on the assumption that network relationships play a more significant role in the process of internationalization, as Born Digitals are more likely to concentrate their international process through the development of networks (Brouthers et al., 2016), with a focus on the product uniqueness, brand reputation (Wittkop et al., 2018) and legitimacy (Bangara et al., 2012), rather than physical sales locations (Autio & Zander, 2016). Networks are therefore important for this thesis, where the revisited Uppsala model (Johanson & Vahlne, 2009) is also embedded in the conceptual framework.

Reflecting on the literature review regarding the paradigm shift of firms with a digitalized value chain, the latter has also been added as a concept to the conceptual framework, as shown in *Figure 1*. Accordingly, the theory developed by Vadana et al. (2019) regarding Born Digitals is used in this model. This was necessary to categorize the notion of Born Digitals and to illustrate how a digitalized value chain affects an international expansion in relation to the three chosen elements of speed, geography and networks. Thereby, the conceptual model further assumes that an SME with a digitalized value chain will affect the internationalization process in such ways that includes the speed, the geographical expansion as well as the participation in relevant networks.

The thinner arrows in the model represent the effect of using a digitalized value chain in terms of *speed, geography* and *network.* The larger arrow represents the analysis that explores the extent to which a digitalized value chain affects the foreign market entry in the healthtech sector. Conclusively, the framework outlines the internationalization process of SMEs with a digital value chain, where these three key elements are incorporated in terms of digitalization and internationalization.

3. Methodology

3.1. Research approach

This thesis aims to analyze to what extent a digitalized value chain affects the internationalization process of Nordic SMEs in the healthtech sector. We use Vadana et al.'s (2019) definition of "digitalized value chain" which includes core activities, inward and outward, being activated or coordinated by internet applications and technologies instantly after the firm's inception. Within the scope of this study, this concept has been delimited to only include healthtech service firms in which the value chain is digitalized at an early stage or instantaneously after its foundation. As such, this thesis analyzes healthtech service companies and their internationalization process in order to contribute to the understanding of how the foreign market entry of firms is affected by incorporating a digital value chain strategy. Furthermore, we use the conceptual framework outlined in *section 2.3* as a guide to answer the research question. As the extant literature on digital healthtech services is rather scarce, Wentrup's approach (2016) was identified as an adequate starting point for understanding how digitalized healthtech service firms internationalize. Thus far, the theoretical framework has been based on previous literature reviews, where key aspects within digitalization and internationalization have been incorporated in a conceptual framework. The aim of this chapter is to provide the methodological approach of the present study.

3.1.1. Deductive approach

Literature and previous studies on themes such as the healthtech sector and internationalization are rather limited. The preceding chapter has engaged in a literature review on internationalization and digitalization, and key themes emerging from this literature review have been incorporated in the conceptual framework of this study. As such, this thesis is grounded in a deductive research approach whereby the analysis of this study has continuously moved between theory and empirical findings (Bell et al., 2019). In relation to the literature review, the deductive approach of this thesis started with a literature review on existing theories in relation to key aspects regarding digitalization and internationalization. Relevant elements were identified during this process, which were influenced and were incorporated in the development of the research question, the interview questions and as such framed the gathering of empirical findings. This thesis is also founded upon a case study approach including nine different healthtech companies from the Nordic region, which means that the data analysis

moved between theory and empirical findings, and the research question was developed in connection to theoretical concerns (Ibid.).

3.2. Qualitative research method

When selecting the methodology for a business research, there are two different approaches: a quantitative approach or a qualitative approach. These generally concern using either features such as numbers or words when gathering data (Bell et al., 2019). For this thesis, a qualitative research approach was adopted to answer the research question by analyzing the perspectives and experiences of relevant individuals as they shared them in an interview setting. Thus, the research method also followed an inductive approach towards connecting theory and empirical findings (Ibid). Furthermore, Bell et al. (2019) argue that a qualitative research design enables the researchers to understand and analyze how participants of the study view their social reality. The underlying decision for the choice of research method was also motivated by Eriksson & Kovalainen (2008), who argue that a qualitative research design is the preferred method for answering research questions that begin with the words "what, how or why". Accordingly, the authors of this thesis believe that the research question of "*how does a digitalized value chain affect the internationalization process of Nordic SMEs within the healthtech industry?*" will benefit from a qualitative research design that provides the necessary tools to gather rich, detailed data to answer the research question.

3.2.1. Case studies

A case study research design has been defined by Eisenhardt (1989: 534) as a research approach that "focuses on understanding the dynamics present within single settings". This can involve either a single case study or multiple case studies, however, a multi-level analysis can be performed within both approaches. Moreover, during data collection, a case study is typically combined with several different methods such as archives, interviews, questionnaires and observations. Most importantly, Eisenhardt (1989) argues that a case study can be used to provide description, test theory or generate theory, when the purpose of the method is to provide an in-depth elucidation of the cases included in the analysis (Bell et al., 2019). It has further been argued that case studies are especially associated with qualitative research methods because of their ability of capturing the complexities and contradictions of real life (Flyvbjerg, 2006). In addition to that, Yin (2012) further suggests that case studies are exclusively suitable for research questions that are explanatory or descriptive in nature, for instance questions

beginning with what, how or why. In light of the above arguments as well as the nature of our research question, a multiple case study was deemed to be the most appropriate research method for this study. The underlying reason was to strengthen the quality of the research as multiple cases allow us to compare and contrast the findings from each case, as well as encourage us to seek for uniqueness and generalizability across the participating cases (Bell et al., 2019). Therefore, we conducted interviews with nine different SMEs within the Nordic healthtech sector, comprising five firms from Sweden, two firms from Denmark and two firms from Norway.

3.2.2. Selection of location and case companies

The nine participating case companies were selected based on several aspects. First, all companies are SMEs that operate within the healthtech industry. All firms fit the definition of the European Commission of SMEs, meaning that they employ less than 251 people and that their yearly turnover remains equal or under the amount of 50 million Euro (European Commission, 2021a).

Second, since the research question involves the study of Nordic SMEs, the emphasis of this study is exclusively on Nordic healthtech companies. However, as the empirical findings only include healthtech firms from Sweden, Denmark and Norway, the notion of "Nordic region" as it is employed in this thesis solely refers to the three aforesaid countries. The absence of Finland and Iceland in this study is because selected companies from these countries were unavailable to participate at the time of the data collection.

Third, all but two companies were selected from *Healthtech Nordic* (2021), a project collaboration for healthtech firms in the Nordic countries mentioned above. The remaining two companies were selected from *The Hub* (2021), also a community platform for Nordic start-ups, where both provided us with a productive environment to search for potential companies that could take part in our study.

Last, this thesis emphasizes healthtech services firms as digital technologies have led to the emergence of digital healthcare services. To establish contact with relevant companies, we formulated an email containing necessary information on our study and sent it to relevant individuals, such as Chief Executive Officers (CEO) or company founders. A draft of this email

can be found in *Appendix 1*. Other digital channels such as Facebook and LinkedIn were also used, however, in most cases, contacting firms by telephone proved to be the most effective way to establish contact.

3.3. Data collection

3.3.1. Interview and question design

The interviews were carried out on the dates and times that were agreed upon with the respondents and conducted online through the face-to-face software program ZOOM. By undertaking the interviews online via video conference, all parties involved were able to see and speak to each other despite not being located in the same physical space. Refraining from physical interviews was also in line with the Swedish government's recommendations of reducing personal contact during the global pandemic. All respondents showed a positive attitude towards the idea of conducting the interviews online, which can be influenced by the fact that they work in a digital environment and may therefore be comfortable with the technology used when conducting the interviews. Other than enabling a visual element despite physical distance and providing time and cost-savings, the selected method also enabled the interviews to be more flexible towards last-minute adjustments, as changes to the interview schedule can be easily accommodated (Bell et al., 2019). For instance, two interviews were rescheduled as requested by two respondents.

However, there are also some disadvantages to online face-to-face interviews such as technological problems related to fluctuations in the quality of the broadband connection. At times, this hindered the flow of the interview, thus making it less smooth when speech was breaking up (Bell et al., 2019). The consequences resulted in some poor recordings of the audio which ultimately led to some difficulties when transcribing the interviews. Another visual disadvantage of this method is that the responses from the interviews can be affected by the visual characteristics of, for instance, gender, age and ethnicity (Ibid.). Regardless of the limitations, we believe that the advantages of the selected method were the most suitable for this research project, especially with regard to the global pandemic.

The interviews through which data was collected were semi-structured and in-depth, meaning that we created and used an interview guide with both open and closed questions to ensure that

all the respondents would have to answer the same questions so that the collected data would be comparable (Bell et al., 2019). The open questions were constructed in such a way that the respondents had relative freedom to answer and did not feel restricted in their replies. The open questions supported the collection of important information that was previously not thought of and helped in gaining a better overall picture of participants' experiences and perspectives. The semi-structured interviews also gave us a certain degree of flexibility regarding the questions as we could add and remove questions during the interview depending on the responses that we received (Ibid.). This enabled us to focus the conversation on aspects that we thought were the most relevant to our research all the while being open for the flow of the interview to be guided by themes that were introduced by the interviewee.

The questions had been discussed and agreed upon by both researchers prior to the interviews. In general, the questions were inspired by key themes and topics identified from the literature review, and the interview guide can be found in *Appendix 2.* The questions first focused on general information about the company, then the experiences of having a digital value chain, followed by the experiences of expanding with a digital value chain, and lastly the questions involved the relationship to networks. The questions were thereby categorized under the two themes of digitalization and internationalization in order to separate and label the research findings. Moreover, the internationalization questions were divided into three subcategories; speed, geography and network, in order to have a clear structure when analyzing the findings. The interview questions were, however, not sent to the respondents beforehand, which could possibly have weakened the dependability of the research. To account for this issue, the same interview guide was used for all respondents.

3.3.2. Firm interviews

An overview of the interview schedule is presented in *Table 1* below. They were conducted between 16th of March and 23rd of April, and interviews lasted between 45 and 65 minutes. To have the best possible opportunity for understanding the internationalization process of healthtech firms in the Nordic region, a CEO and/or founder of a company was deemed to be the most relevant person to interview, as we expected such a position to have the most knowledge regarding the internationalization strategies of a company. Brown AB (the pseudonym choice will be explained further down in this paragraph) was the only firm where we were referred to a person other than the CEO/founder of the company for unknown reasons.

This might be seen as a disadvantage as the respondent was not employed from inception. However, the respondent was hired at an early stage of the firm and we believe that the knowledge and experience from that person was still of significance for our thesis.

All interviews were carried out in English and they were video and audio recorded through ZOOM with permission from the respondents. This was essential to give us the opportunity to listen to the collected material on multiple occasions and thereby extract direct quotes from the respondents. All case companies are anonymous as requested by the respondents and have therefore been represented by a color pseudonym. Furthermore, the interviews were transcribed as it allows for more thorough examinations of what the respondents have stated, permits a repeated analysis of the interviews, as well as that it helps to counter accusations of being influenced by our own values or biases (Bell et al., 2019). However, the transcriptions were not sent to the respondents, as they requested a digital copy of the final version of the research project instead.

Table 1: Table overview

Company	Country	Position	Date	Interview type	Interview length	Interview language
Blue AB[1]	Sweden	CEO and Co-founder	16th March 2021	Online via ZOOM	45 min	English
Black AB	Sweden	CEO and Co-founder	19th March 2021	Online via ZOOM	58 min	English
Brown AB	Sweden	Head of the Nordic markets and Partners	19th March 2021	Online via ZOOM	47 min	English
Green AB	Sweden	CEO and Co-founder	25th March 2021	Online via ZOOM	48 min	English
Pink AB	Denmark	CEO and Co-founder	26th March 2021	Online via ZOOM	49 min	English
Yellow AB	Norway	CEO and Co-founder	5th April 2021	Online via ZOOM	50 min	English
White AB	Sweden	CEO and Co-founder	12th April 2021	Online via ZOOM	65 min	English
Red AB	Norway	CEO and Co-founder	16th April 2021	Online via ZOOM	56 min	English
Orange AB	Denmark	CEO and Co-founder	23rd April 2021	Online via ZOOM	56 min	English

[1] AB stands for *aktiebolag* in Swedish which translates to *Incorporated Company*.

3.4. Data analysis

This thesis is grounded in a deductive research approach, where the analysis of this study has continuously moved between theory and empirical findings. The process of assessing the collected data in parallel with the literature review and theory created an appropriate structure for providing a concluding answer to the research question and was thus incorporated in a conceptual framework. Thereby, the integrated conceptual model in *Figure 1* from *section 2.3* played a crucial role in how the analysis was performed. However, in order to analyze the empirical findings, it was necessary to manage the gathered data beforehand as stated by Bell et al. (2019). Therefore, all empirical findings were recorded and transcribed and further labeled to either digitalization or internationalization. This resulted in structuring the empirical findings in two different subsections. The purpose of labeling was intended to contribute to the identification of the effects on the internationalization process when having a digitalized value chain. This process included searching for linkages and recurrences of sequences across the nine different case studies in terms of digitalization as well as internationalization (Ibid.). In particular, a thematic analysis (Ibid.) was conducted where characteristics of digital value chains as well as categories of speed, geography and networks were identified within the findings. According to Bell et al. (2019), the data analysis was thereby conducted by linking the interpretations of the transcriptions with the research question as well as with the theoretical and literature concepts incorporated in the conceptual model from *section 2.3,* in order to understand the effects of expanding internationally with a digitalized value chain.

3.5. Quality of research

In order to establish and assess good research quality, certain evaluations or measurements can be performed. The most prominent criteria to uphold good quality are reliability, validity and replicability of a study (Bell et al., 2019). However, many researchers have divergent opinions when it comes to how well a case study is compatible with the context of the quality criteria, in particular with the evaluation of a study's validity, reliability and replicability. Bell et al. (2019) suggests that it depends on the researchers and what they feel is appropriate for the study, and that such evaluations tend to be more significant for studies of quantitative nature (Stake, 1995). In contrast to that, scholars such as Yin (1984) have suggested that quality criteria are appropriate for case studies as it enables the researcher to enhance the quality of the research. As this thesis adopts a qualitative research design, Bell et al. (2019) suggests that the meaning of criteria such as validity and reliability will be slightly different in comparison to

quantitative research and will thus have to be adopted to a qualitative approach. Nevertheless, in accordance with Golafshani (2003) and Bell et al. (2019), the importance of qualitative research lies in ensuring trustworthiness, which parallels with the criteria of validity and reliability. As such, we believe that such criteria are necessary in order to establish and assess the quality of this study.

3.5.1. Validity

One of the most important quality criteria is validity, which concerns the integrity of the conclusions drawn from a study. In line with Mason (1996: 24), validity within qualitative research refers to whether "you are observing, identifying, or 'measuring' what you say you are". Furthermore, the validity of a study can be divided into two categories; internal validity and external validity (Bell et al., 2019).

The first category, internal validity, parallels the concept of credibility which is a key aspect when assessing the trustworthiness of qualitative research. In particular, the establishment of credibility entails that we must ensure that the collected data represents the reality of what has been studied (Bell et al., 2019). Therefore, in accordance with Bell et al. (2019), we increased the internal validity of the study by conducting the research through good practice and by video recording and transcribing all interviews. Through this, we ensure that the analysis was not influenced by our own values and biases. This also enabled the correction of "natural limitations of our memories" where intuitive meanings can be projected on the answers of the interviewee (Bell et al., 2019: 445), as such the interview transcriptions directly represent the information shared by participants.

The second and last category concerns the external validity of the study. This concept parallels transferability which is also a key aspect when assessing the trustworthiness of qualitative research. A draft of the email that was used to contact the case companies can be found in *Appendix 1* which can be helpful for other researchers in the future when formulating such emails, thereby increasing the transferability of the selected research method.

Furthermore, this category essentially refers to what degree the research findings can be generalized beyond the context of the research (Bell et al., 2019). In line with LeCompte & Goetz (1982), external validity may represent a challenge for qualitative research as such

studies tend to use small samples and limited number of case studies, which means that the focus lies on the contextual uniqueness rather than generalizing the findings. According to Flyvbjerg (2006), the purpose of qualitative study is not to generalize the findings, but instead to make theoretical generalizations. It is therefore encouraged for qualitative researchers to provide a thick description of what the study consists of to provide others with "a database for making judgments about the possible transferability of findings to other milieux" (Bell et al., 2019: 365). Therefore, the descriptive methodology chapter found in *section 3,* plays an important role in terms of the transferability of this study. Furthermore, in order to enhance the external validity of this thesis, a multiple case study approach was conducted. As this study only includes nine case companies, we acknowledge that including more cases would have increased the external validity of the study, which is why it was crucial to take this into account when developing our analysis and conclusions of the study. However, the limited number of participants also allows us to explore themes more thoroughly and thus provides us with a more nuanced account (Bell et al., 2019). Thereby we remain confident that our study is relevant for other studies in the same field.

3.5.2. Reliability

Reliability is another prominent criterion when assessing and evaluating research, and this criterion is primarily concerned with the question of whether the results of a study can be replicated. The reliability of a study can be divided into two categories; external reliability and internal reliability (Bell et al., 2019). The former category refers to what degree the results of a research can be repeated, and the latter category refers to what degree researchers agree with each other about what they hear in the recorded interviews. However, the criterion of reliability has been argued to be difficult to meet in qualitative studies (Bell et al., 2019; LeCompte & Goetz, 1982) as it is impossible to freeze social settings and replicate them exactly in the same way as the original social event. Therefore, in order for qualitative results to be replicated in similar ways, researchers are encouraged to provide detailed information on how the social setting was conducted in the study, in order for other researchers to adopt a similar setting (LeCompte & Goetz, 1982). In other words, researchers need to be consistent in how they gather qualitative data.

All interviews were therefore recorded with permission. However, the questions were not sent to the respondents beforehand, which may have weakened the dependability of the research.

To account for this issue and considering that this thesis is qualitative in its nature, the same interview guide was used for all respondents. As such, the opportunity of identifying similarities between the cases and thereby making generalizations was increased. The interview guide has also been included in *Appendix 2,* so that other researchers may use or adapt it. However, in terms of internal reliability, the consequences from fluctuations in the quality of the interview connections resulted in poor recordings of the audio which ultimately led to some difficulties when transcribing the interviews. On the other hand, having recordings that enabled us to listen to and interpret the interviews on multiple occasions, thereby decreased the risk of misunderstandings of the gathered data.

3.5.3. Ethical considerations

According to Bell et al. (2019), ethical considerations are important to address when writing a research project. This thesis mainly raises three issues that need to be addressed i.e., the avoidance of harm, informed consent and data management. The first issue concerns the confidentiality and anonymity of research participants (Ibid.). All information regarding possible identification of respondents and organizations were carefully protected as requested by participants, since sensitive information is shared in this study. The second issue refers to the fact that sufficient information about the research project has been outlined to the participants beforehand, in order for them to make an informed and free decision to participate in the study (Ibid.). All respondents were informed about the purpose of the study, what topics would be discussed in the interview as well as the practicalities and time the participation required. All participants agreed to be involved in the study voluntarily and gave written (email) as well as verbal (phone) informed consent. The third issue concerns the collection and storing of digital data as well as the accessibility of this digital data (Ibid). While all respondents were asked permission to be recorded prior to the online interviews, we ensured participants that the recordings would only be available to the authors of this thesis and used for academic purposes only and deleted once the transcriptions were written.

4. Empirical findings

4.1. Blue AB

We interviewed the CEO and Co-founder of Blue AB. This healthtech company was founded in Sweden in 2013 and offers digital specialist consultations and AI tools to prevent dental diseases. More specifically, the company developed a digital platform for easier dental diagnostics with a focus on finding both systemic diseases but also regular dental diseases mainly through the use of image processing algorithms and Artificial Intelligence (AI) on dental radiographs.

4.1.1. Digitalized value chain

When discussing Blue AB and their value chain, the co-founder states that their value chain is completely digital. However, Blue AB has experienced some constraints as a result of being purely digitalized from inception. The founder stresses that when the use of new tools and technologies increases in the market, it also increases the learning of how to use those tools. On one hand, the CEO explains that this is good for the company as it creates more customers who are adapting to the digital services, but on the other hand, it also increases the skepticism as individuals are more or less forced to use these services under the pandemic, but mainly also because there is no physical contact with the actual service provider.

When it comes to physical sales locations, the CEO states that digitalization has to some extent reduced the need for physical sales but emphasizes that having personal contact has become even more important when having a digital firm:

> *"I think that even though I like the digital ways of working, I think that personal contact is really really important and has some kind of personal presence in the market because I think that people want to see that there are actual people behind the softwares and the digital solutions that they are using. Especially in our industry where you're actually sending a lot of patient information."*

Following the digital consequences of the pandemic, the CEO observes that digital value chains are only increasing in the sector, which is also changing the fundamentals of the industry:

"I would say that they have tried to use the digital tools to see if it actually works and it seems like it's working. So I think everything has changed in some way."

4.1.2. Internationalization process

Blue AB is currently present in four different markets: Sweden, Norway, Finland and Denmark. The CEO of Blue AB explains that being a digital company with an online market has not affected their choices of which markets to enter. More specifically, the CEO states that they have expanded within Scandinavia specifically due to geographical proximity and the maturity of digitalization rather than global opportunities that come with digitalization.

Blue AB first expanded to Norway in 2017, which was four years after the initial inception of the company. The CEO states that this was a natural choice since Blue AB won a healthtech competition in the market that resulted in a great amount of publicity, as well as having personal connections in the country. Additionally, the founder explained that many things happening in Sweden also spill over to the Norwegian market and thus the choice of entering Norway was a natural spillover effect.

The founder of Blue AB further argues that using the Swedish market as a springboard for their business has not only been an important factor for their international success, but also for digital companies in general. More specifically, the founder argues that Sweden is the leading market when it comes to dentistry, and also when it comes to the tech-industry:

"I would say that being a dental company within the Swedish market is probably the best sales pitch to other countries since a lot of different countries are looking at how Sweden works within dentistry since they are really in front when it comes to dental techniques."

However, Blue AB has also encountered some constraints when internationalizing, such as the local laws and regulations within the healthcare sector. More specifically, the CEO argues that entering the Norwegian market was the first and main international constraint that Blue AB had experienced when it comes to the transportation and the logistics of patient information:

"They have their own intranets where you have to be included in order for your system to be used by dentists and healthcare providers. If you're not in there, then people are not allowed to use your system and so you need to be accepted there which has a lot of technical and compliance regulatory aspects that you need to fulfill."

Furthermore, the co-founder specified that once Blue AB had entered the Norwegian market, they hired a local IT-consultant from their partnership in IT and business consulting services, in order to ensure compliance with the technical specifications that were needed for the Norwegian market. These preparations were estimated to take approximately four months before Blue AB was accepted into the Norwegian intranet. However, this preparation was believed to not directly hinder the firm's internationalization processes but rather enhance it as it turned out to be compliant with other national regulations as well:

> *"Since the requirements getting in are so tough, we also met a lot of regulatory requirements in the other countries as well. So, I would say it was a good thing and the necessary planning in order to get into other markets as well."*

Blue AB is also part of different networks within the Scandinavian region, and mainly focuses on networking in Sweden and Norway. As stated by the founder, the principal reason for joining these networks was because other people recommended this. The CEO further explained that it is more about finding actors that can help with the challenges that the firms face, as well as finding investors for the growth of the company.

The co-founder further states that without those networks, the internationalization process of the company would have taken a lot more time and that digital companies such as Blue AB are more likely to join such networks due to their initial focus on innovation and working with innovative tools, as these networks can provide them with the right competences to expand.

In addition, the co-founder argues that gaining legitimacy for a company is important within a network. However, he also believes that the barriers for digital companies connected to a possible lack of legitimacy today are lower than they were five years ago, mainly as a result of the rapid progression of digitalization within healthcare in light of the current pandemic. Nonetheless, as Blue AB is operating within healthcare, the founder argues that it is always important to have a ground to stand on with credible people in that industry.

When it comes to digitalization and national borders, the CEO claims that the latter are fading away due to networks connecting and building a better community for innovative and digital companies, regardless of the regulatory requirements in different countries. However, the CEO clarifies that at least within the EU, the national borders are fading away due to similar regulations within the healthcare industry:

''It's easier even though requirements are pretty rough. Very often it feels like if you are compliant in one country, there are only small adjustments that are needed in order to enter into a new one."

4.2. Black AB

We interviewed the CEO and Co-founder of Black AB. This Swedish healthtech company was founded in 2015 and offers a digital sleep clinic. More specifically, they developed an app that enables patients to be treated with medium and severe sleeping disorders using cognitive behavioral therapy in combination with sleep restriction. Black AB also provides video consultations with psychologists as follow-ups for their patients.

4.2.1. Digitalized value chain

When discussing Black AB and their value chain, the CEO explains that their value chain is completely digital. However, Black AB has experienced some constraints as a result of being purely digitalized from inception. The CEO points out that there are difficulties for digital actors in the health space, such as reimbursement systems or people's mindsets towards digitalization in healthcare:

"People in general in healthcare are, I wouldn't say against the utilization, but they are not that keen on taking up the technology."

The respondent considers each activity of the value chain to be equally important but emphasizes that digitalizing physical visits with psychologists have been the most important activity for Black AB to generate good results. As stated by the founder, the support from real psychologists has pushed patients to go through with treatments.

According to the CEO, a physical presence in the beginning of a digital firm is needed in order to properly set up the business, specifically in relation to hiring local psychologists. However, the founder of Black AB also argues that if a company uses the same business model in all markets, then there is not much need for a physical presence as digitalization enables the company to operate all business from the headquarters regardless of their location.

The respondent also believes that the current pandemic would lead to digital companies and digital value chains being more common in the future, and that the development was already headed in that direction regardless of the pandemic. As stated by the CEO, all sectors are affected by digitalization, however, healthcare is perceived to have the lowest degree of digitalization today.

The co-founder of Black AB argues that the pandemic has accelerated the digital healthcare development and enables healthcare providers to be more efficient and focus more on patients that need physical treatments, rather than all patients visiting the doctor:

> *"We actually treat people with sleeping disorders better than traditional healthcare. It's just that they don't believe us but especially now the patients realize that okay I don't need to go to the primary care unit, I can just download apps and get treatment this way."*

4.2.2. Internationalization process

Black AB is currently present in the Swedish market and runs pilot projects in countries such as the UK and Norway. The CEO states that being digital has influenced Black AB's choice on where to internationalize, as the digital infrastructure in a country and people's mindsets towards using digital services play an important role that the firm looks into before entering a market.

The UK is the first country that Black AB expanded to. This choice was motivated by an established network of therapists, connections to businesspeople that would assist entering the market, as well as a similar culture to Sweden and English being a universal language. In addition, the CEO argues that the reason for entering the UK was mainly due to financial aspects and market size, as the cost of entering a market is more or less the same in all European countries while market sizes vary considerably and therefore influence the potential return on the expansion.

The founder of Black AB further argues that using the Swedish market as a springboard for their business has not only been an important factor for their international success, but also for digital companies in general. More specifically, the founder argues that Sweden is the leading market when it comes to the tech-industry:

"Sweden is a very very good test market for all types of digital companies, not only healthcare because the technology uptake is quite high but people are also quite spoiled with good digital services, which means that if you can make it in Sweden the likeliness to make it in other, especially in other European markets, is high."

Black AB has also encountered some constraints when internationalizing, such as local laws and regulations within the healthcare sector. The CEO explains that the main challenge within healthcare is that the systems are different across different countries. However, such regulatory aspects have not affected their internationalization process to a great extent. As stated by the CEO, the financial cost of entering another country, such as marketing and having a sales team, are principally the main constraints that Black AB has encountered when expanding their business.

Black AB did not have to do many preparations before internationalizing as they have had help from different inward investment organizations. The CEO further argues that it is important to have networks and having the right contacts that can provide market information. According to the co-founder, these networks are extremely important because they help the internationalization process and also affected Black AB's decision of which markets to enter:

"I don't have a good network in all countries, so I have been partly building our internationalization strategy on what countries I have a good network in."

Furthermore, the co-founder of Black AB states that gaining legitimacy is a key factor when internationalizing, as it provides potential customers, companies or partnerships with a sense of credibility for what the firm delivers. For instance, if the service is clinically or scientifically proven by reliable entities, the CEO argues that it makes the firm stand out from other companies:

"The technology platform is CE-marked[2], so when we have been talking to potential partners in the UK, they of course like that, they would probably not have partnered up with us if we were not CE marked."

[2] CE-marked refers to products that have been assessed to meet high safety, health and environmental protection requirements in the European Economic Area (European Commision, 2021b).

In terms of digitalization and national borders, the CEO states that national borders are less important in the digital space and that theoretically, digitalization enables companies to expand anywhere without any problems. However, the founder also argues that nationalism is the reason why borders still exist and that they are more important for companies who sell physical products as they need to cross borders and pay customs.

4.3. Brown AB

We interviewed the Head of Nordics and Partnerships (HNP) of Brown AB. This healthtech company was founded in Sweden in 2016 and specializes in digital healthcare clinics. More specifically, they provide general healthcare services through video consultations with experienced doctors. Brown AB provides advice, digital treatments as well as local referrals to relevant specialists.

4.3.1. Digitalized value chain

Brown AB has a fully digital value chain, and the HNP states that they are exactly like a traditional health clinic but only 100% digital. In this light, the HNP argues that Brown AB also has many interactions with the traditional ecosystem due to their business model. On one hand, they offer digital consultations and services to individuals who do not have insurance and on the other hand, they partner up with insurance companies to reach their customer base.

Brown AB has also experienced some difficulties as a result of being digitalized from inception. The HNP argues that their challenges are primarily due to the field of business that they are in, rather than the business in general. For instance, digital healthcare comes with a certain skepticism as the doctors cannot physically interact with their patients when needed. As stated by the HNP, this is a challenge that comes from being purely digital and a common misconception that the company is trying to change. However, Brown AB believes that in light of COVID-19, there is less skepticism in the industry and that in the future, digital firms will not only become more common but also necessary:

> *"The business we're in has changed in its foundation due to the pandemic and digitalization has come to stay. Pre-pandemic there was a lot of skepticism about the digital model and the digital possibilities but everyone has been forced to accept the digital possibilities and just adapt to them and that's not something that you can turn back time on."*

When it comes to physical sales locations, the HNP believes that digitalization has to some extent reduced the need for physical sales. Digital sales processes are argued to have become completely accepted without ever having to meet the contacts in person, where it has created a new foundation for the firm. As such, they work more with the central team rather than having a local distributed team, managing more processes without having to travel. However, the HNP also argues that personal contact is still the best way to communicate, which is why he believes that physical sales will never truly disappear:

> *"Digitalization has really moved the apathy and the normality of video meetings far ahead which means that we want to go over the first five soft meetings but rather just travel for one negotiation meeting and do that in person so that will increase speed and hopefully also conversion."*

4.3.2. Internationalization process

Brown AB is currently present in seven different markets: Sweden, Norway, Denmark, Finland, Germany, the UK and the US. The HNP argues that being a digital company has influenced the company's choice of which markets to expand to, as the adoption of digital healthcare is one prerequisite that Brown AB considers when expanding their business operations. In that way, they are not affected by the first mover disadvantage of introducing their business concept to such markets.

Brown AB's first international expansion was to Finland in 2018, two years after the firm's foundation. The choice to enter the Scandinavian markets was influenced by geographical proximity. However, the HNP explains that their choice of entering Finland and the rest of Scandinavia was not a company selection but rather a choice that was pushed from their partners with insurance companies, as they are also active in the Nordic region.

The HNP further states that using the Swedish market as a springboard has been important in terms of proving that their business concept works as well as finding the right operating model for the company. According to the HNP, Sweden is a unique market as 90% of Brown AB's customer segment are insured and Sweden is the leading market when it comes to insurance penetrations. That is the essential reason why Sweden has been such an important factor for the company.

Brown AB has also encountered some difficulties when entering foreign markets, such as regulatory aspects. The HNP argues that digital healthcare has developed differently across different markets, which has resulted in the fact that Brown AB cannot offer the exact same services everywhere and are forced to locally adapt their services. However, the HNP argues that these regulations have not affected their internationalization process, as it is believed that there are enough markets for Brown AB to enter where they are not hindered by regulatory actions.

Brown AB was also subjected to certain preparations before internationalizing. More specifically, the HNP states that they had to invest in one or a few partners before entering a new country, as well as investigating the market from a regulatory aspect to make sure that they would be compliant. The HNP further argues that they had to hire local personnel such as country managers and local doctors. The HNP estimates that these preparations take approximately six months before the business operations could be running.

When it comes to networks in relation to business operations, Brown AB has not found them useful. As stated by the HNP, they serve more for talking and hanging out and less for "getting things done":

> *"We have our investors, we have our board, and we have our management team and kind of that collected experience is, at the moment at least we think, enough to kind of try to keep working with what we are doing."*

Furthermore, the HNP of Brown AB deems the process of gaining legitimacy for the company when internationalizing as highly important for digital firms since it provides a sense of good validation for the company as well as potential customers. According to the HNP, their legitimacy has helped Brown AB's internationalization process:

> *"That's one of the reasons why we've chosen the route of working with insurance companies because having our logos next to them is a good validation for us and a good place to put our brand. It makes us a trusted advisor."*

However, the HNP expresses that the process of gaining legitimacy is hard. For instance, the company only handles between 10-15% of its customer segment in Sweden, and for that reason Brown AB is continuously working to build more credibility in the market.

When it comes to digitalization and national borders, the HNP of Brown AB specifies that regulatory aspects within each country are still very different from each other and that this will undoubtedly change over the coming period of time. Accordingly, national borders are still important due to different regulations in the industry across different countries. The HNP also argues that due to different cultures in every market, it becomes easier to distinguish where the national borders are and further stresses that digitalization has not affected the national borders in the healthcare industry.

4.4. Green AB

We interviewed the CEO and Co-founder of Green AB. This healthtech company was founded in 2017 and focuses on combining advanced technology algorithms and other data with cognitive behavioral therapy to help patients with difficult behavioral changes. Green AB's product apps can help patients to quit smoking, and also help with mental health issues such as depression, anxieties and alcoholism. The product is a fully autonomous app, where there are no people involved in the treatments. Green AB only offers digital therapy sessions based on algorithms in an app.

4.4.1. Digitalized value chain

When discussing Green AB's value chain, the CEO states that all their activities are digitalized although the company also has many interactions with the traditional ecosystem due to their business model. For instance, the company travels to meet potential partners where face-to-face interaction is an important part of the sales process. However, the CEO specifies that COVID-19 has been an advantage for Green AB as they can still fulfill the sales processes without having to travel, which is less costly for the company.

The CEO further states that the company has not experienced any constraints or difficulties by being digital from inception, except for building a company culture. However, this was more due to the pandemic than being a digital firm from inception.

In terms of physical sales, the CEO argues that digitalization has reduced the need for this as many of the activities and sales processes within a company can be made digital and thus also reduce the company costs. The founder, however, emphasizes that the option of having a physical approach is highly important when it comes to the sales process. The founder explains that physical interactions can never truly be replaced, and it is an interaction that will most likely be part of Green AB's future regardless of how digital the firm is:

> *"To have that digital option always and maybe that's the first that will be the new standard in the future that might be good as it will reduce costs, but to always have the option for a non-digital approach, I think also it's important when it comes to sales."*

However, following the digital consequences of the pandemic, the co-founder argues that companies with a digitalized value chain will become more common in the future within healthcare but also outside of healthcare, as COVID-19 has more or less forced individuals and organizations to become more digitalized, which is a phenomenon that is expected to stay post-pandemic.

4.4.2. Internationalization process

Green AB is currently present in four different markets: Sweden, Germany, the US and India. The CEO states that being a digital company with an online market has influenced their choice of which markets to enter. More specifically, the founder explains that having a digital product enables the company to seize better opportunities in other markets in order to grow and to conduct business, which would not be as easy if they had a physical product.

However, the co-founder emphasizes that digital adaptations within healthcare and its regulation in a market have played an important role when choosing which markets to expand to. For example, Germany recently established a new law that enables medical device apps to be reimbursed by the healthcare system:

> *"That's one of the major factors we look into if they have evolved their adoption of digital health in general so that they have systems in place."*

Germany was the first country that Green AB expanded to. The CEO explains that there are three specific reasons for internationalizing to Germany: 1) the new legislation regarding digital

medical apps; 2) pushed by their partnership with a pharma company that was already established in the German market; and 3) market size. As stated by the CEO, Germany is the largest market when it comes to having a collected healthcare market, meaning a statutory healthcare system that gives access to free healthcare.

When it comes to using the domestic market as a springboard, the CEO of Green AB argues that this has been important to test their product, establish good partnerships and relationships, and also to try out different business models before becoming successful:

> "*When you try to do business abroad you can say that we actually had some success already in Sweden, our home market and now we want to take this outside of Sweden. I think that's a good story to tell investors, partners and customers as well."*

One of the major constraints that Green AB has encountered in their internationalization process has been healthcare legislation regarding prescription and reimbursement systems for digital medical apps. The CEO explains that they need infrastructure and legislation regarding reimbursement systems in order for them to successfully enter a foreign market.

Green AB was also subjected to many preparations before the company could launch their business abroad. These preparations were related mostly to regulatory aspects to get the correct approval to launch their medical service. As stated by the CEO, these preparations are time consuming - they are not impossible but the process can take years before acquiring the rights to sell the product:

> *"Even if we build a new product, we have to have a notified body, an external company who comes in and looks to make sure that we have all the documentation and the risks, processes and everything in place and that can take a year for them to do that."*

Green AB is also integrated in many networks and associations tied to the Nordic region, and mostly within Sweden. As stated by the founder, the primary reason for joining such associations was to expand the company network as well as to be up to date with the development of the industry through different events and delegations. However, that is not something that Green AB spends too much time on.

The second reason, as explained by the CEO, is to build credibility with potential customers in order to increase the sales and to expand the company. For instance, when Green AB is talking to potential customers, they often try to mention their different partners and associations with certain organizations to emphasize the company's credibility and legitimacy. However, the founder stresses that not all networks have been helpful as some provide more resources than others, and also argues that joining such networks is not exclusive to digital firms. Networks are important for any company that wants to expand into new markets, increase their sales or build credibility.

When it comes to digitalization and national borders, the co-founder believes that they do not play as much of an important role anymore, especially in light of the current pandemic. Apart from cultural aspects and practical factors such as taxes and local regulations, the CEO argues that national borders are fading away as countries are on par with each other when it comes to doing business.

4.5. Pink AB

We interviewed the CEO and Co-founder of Pink AB. This Danish healthtech company was founded in 2015, and specializes in rehabilitation. More specifically, the app helps customers recover from muscle and joint pain through exercise programs that are adjusted to specific needs. Pink AB's exercise programs are developed with specialist doctors to give the customers the tools to treat their own muscle and joint pain. The product is solely based on interactions between the user and the app.

4.5.1. Digitalized value chain

When describing the value chain of the company, the CEO explains that the interactions of Pink AB with their customers are purely digital. Doctors send a text message to patients where they only have to click on a link to download the app, and health insurance companies send a link via email. The focus lies on simplification and speed:

> *"We really want to make it digital as fast as we can. We believe that an important part of the sales process for an app is to make it really, really easy."*

However, Pink AB has experienced some constraints as a result of being purely digitalized from inception. The CEO explains that there is a big sales challenge in marketing digital rehabilitation due to the lack of attraction surrounding the subject:

> *"I think that the challenges that we experienced are related to the fact that when you have a new service in healthcare, it takes a while to find your way in. It's a very conservative market."*

Moreover, the founder argues that healthcare is a challenging market as it is difficult to offer an entirely new service when everyone is used to physically visiting a therapist:

> *"Everyone is used to getting conventional official therapy, and changing that to a new kind of service is not something that can be done overnight. So that has taken a long time. (...) So in that sense offering a digitalized service in a system that is not digital in its core, you know, that is the challenge."*

According to the CEO, it is hard to separate digital activities when trying to assess whether one is more important than the other. Despite this, ad delivery, the boarding and sale process and an overall great product are among the most important activities for the company.

Furthermore, the founder believes that being digitalized has reduced the need for having physical sales locations, especially on the Business-to-Consumer market since the pandemic has helped professionals as well as private individuals to understand that interactions can easily be done from a distance. In terms of digital companies being more common in the future, the founder of Pink AB stresses that the pandemic has accelerated digitalization in society, which is expected to stay and change the fundamentals of our culture.

4.5.2. Internationalization process

Pink AB is currently present in the Danish market but has their digital marketing mostly in Anglo-Saxon countries with future projects running towards Germany. As stated by the CEO, markets such as Sweden and Norway would only be interesting to the firm due to partnerships with Danish insurance companies also being active in those markets. According to the CEO, Germany also constitutes an important context for the firm as they have recently implemented a new law that enables firms to conduct digital healthcare.

Furthermore, the CEO believes that being a digital company influences the choice of what market to enter because it opens up the possibility of running ads in a foreign market while being in the home market. This can be done with a very limited number of employees in the foreign markets that manage delivery of the product and therefore poses limited risks for the company.

When it comes to using the domestic market as a springboard, the CEO of Pink AB argues that this is important to test and to prove that the business concept works as well as establish good partnerships and relevant networks before internationalizing:

> *"So I need to be able to show progress and I think that it will be easier for me to deliver that progress in Denmark and in the Business-to-Consumer market and then use that as a stepping stone for foreign markets."*

When it comes to constraints in relation to internationalization, the CEO explains that national regulations affect the internationalization process and are to be taken very seriously. According to Pink AB, the problem also lies within the difficulty for lawmakers to effectively regulate the sector in a way that does not kill innovation. The founder perceives the regulatory aspects to be a complex matter that hinder the internationalization process of digital health tech firms.

Pink AB is also part of different networks within the Scandinavian region, and the founder argues that networks are very important for the development of the company since they represent a pool of different resources. They are also important for international expansions as they enable a gathering of information from other markets, which can be useful to try to impact local lawmakers to move legislation along quicker. However, the founder stresses that not all networks have been helpful as some provide more resources than others. He further argues that joining such networks is not exclusive to digital firms and that networks are important for any company that wants to expand their network and expand to new markets.

4.6. Yellow AB

We interviewed the CEO and Co-founder of Yellow AB. This Norwegian healthtech company was founded in 2018 and provides an online dermatology service. More specifically, the company provides online medical services to patients focusing on skin-related issues. As they

work with a visual medical profession, they offer two services which include picture and video consultations in order to establish a diagnosis and deliver treatment options to the patient.

4.6.1. Digitalized value chain

When discussing Yellow AB's value chain, the CEO states that all their activities are digitalized and that the company has experienced some difficulties as a result of being digitalized from inception. For instance, the CEO argues that their services are limited as they cannot provide any physical treatments and that some actors have questioned their concept as doctors have a need to physically examine their patients. As stated by the CEO, they started Yellow AB to make healthcare more efficient and accessible. He believes that it is a natural process that people question a concept when new types of services emerge, but since the pandemic they have seen less and less of this issue:

> *"It made people open their eyes more towards the services but also it also brought out a lot more competitors and new people who understand that this is a super good idea. So, I think after COVID, it's less and less obstacles."*

Moreover, the co-founder argues that developing a personalized service has been the most important activity in the value chain, as digital healthcare moves the doctor-patient meeting from a physical location to an online platform. This initially constitutes a challenge as it creates more distance between the parties, creating the need to rebuild the relationship.

In terms of digital healthcare, this is expected to become more common in the future. The CEO explains that this development was inevitable and the pandemic fast-forwarded the process up to five years.

When it comes to the need of physical sales, the co-founder argues that having a digitalized value chain has reduced that need as there are many healthcare services that can be delivered online, which reduces the number of physical doctor visits. Yellow AB mainly believes that digital healthcare helps to increase the supply of medical services by being more efficient. However, the CEO further stresses that in order to provide patients with a full end-to-end experience and tap into the entire value chain, the need for physical sales will never truly be eliminated. For that reason, Yellow AB is opening up a physical clinic this summer (2021) to follow their patients' journeys.

4.6.2. Internationalization process

Yellow AB is currently present in three different markets: Norway, Sweden and the UK. The CEO argues that being a digital company and having a digital value chain has influenced the company's choice of which markets they have expanded to, as there is no need for a physical presence in the foreign markets:

> *"It's kind of the same to you where you would launch. I think that it has definitely influenced the choice of markets. It makes you able to kind of pick and choose what you want to, where you want to go."*

However, the CEO argues that regulations in different markets, the need of digital healthcare as well as the competitive landscape are essential factors that have influenced the firm's internationalization process. For instance, the CEO explains that the UK was chosen because they have a big need for dermatologists, the language was not a barrier to entry, and the competitive landscape was rather open.

Nevertheless, Sweden was the first country that Yellow AB expanded to, which happened two years after the foundation of the company. The main reason behind this choice was that the Swedish market constituted a low risk for the company. The CEO explains that they had a personal contact in Sweden who was interested in starting the company there, they were already familiar with the language and the digital infrastructure was quite similar to the Norwegian infrastructure. As stated by the CEO, it was easy for Yellow AB to set up their business in Sweden.

Furthermore, the founder of Yellow AB does not believe that using the domestic market as a springboard is important for digital companies, as such firms can be started anywhere. The only reason for starting the company in Norway was due to its lack of dermatologists and long waiting times in the public sector.

The CEO also argued that they expanded to Sweden and the UK before they were really successful in the Norwegian market. The reason, as explained by the founder, is because there are many other markets that are much bigger and more interesting than the Norwegian market.

He further states that it is good to have an early internationalization process to get the experience.

Yellow AB has, however, encountered some restraining factors when internationalizing. For instance, healthcare companies in the UK are obliged to register with certain governing bodies. The CEO explains that there are specific ways of asking questions as a dermatologist in the UK system where the company had to customize their services to the local market. This took more time than expected, however, the founder argues that this was an advantage for the firm:

> *"I think the idea of EU is is very nice to operate in since you have many of the same regulations when it comes to privacy and so if you comply with the rules and regulations of one country, like Norway for instance, you're pretty sure that you are not too far off at least from the rules and regulations of another country in Europe."*

Yellow AB was not subjected to any specific preparations before internationalizing and, on the contrary, the CEO states that "we learn as we go". However, the CEO explains that they executed some minor preparations regarding the regulations of being a provider in Sweden and the UK before delivering their services, resulting in having to adapt their services to some local aspects. The only major preparation that Yellow AB did was to recruit local people to work for the firm where the company was launching.

When it comes to networks, Yellow AB is part of a few different organizations in the Nordic region. The founder argues that they joined these networks as they offer valuable information through different events, support the acquisition of an online presence within the industry, and are helpful to find relevant investors. However, the CEO states that the networks have not been very important for the success of the company or their internationalization process. More specifically, the founder argues that when the company needs help facing a challenge, it is often so specific that these networks cannot provide any direct value:

> *"It's very difficult for them to be very involved in your business and facilitate a meaningful way for your business because what you need help with is often so specific. And all these general things you can figure out by yourself so they can mostly help on general stuff which is already available online anyway."*

However, the CEO slightly moderates his argument and argues that small digital companies are more likely to join such networks mostly because they give them some credibility and enable such companies to be associated with something trustworthy resulting in less skepticism. In this light, the CEO also states that these networks are more useful in the very early stages of a company.

When it comes to digitalization and national borders, the founder of Yellow AB stresses that digitalization per se is not dependent on borders, however, with rules and regulations being different in each country, this makes it hard to become completely borderless. Yellow AB is obliged to have people on the ground even though they are digital in order to deliver their services. The CEO adds that it depends on what you want to provide as a company:

> *"If you want to go completely digital and completely borderless you could do that but then there are certain things that you cannot provide your patients with for instance prescriptions and referrals in the National Health services but if you want to provide a full fledged service in any country you need to be operating on the ground in that country even though you're digital."*

4.7. Red AB

We interviewed the CEO and Co-founder of Red AB. This healthtech company was founded in Norway in 2015 and specializes in providing a digital healthcare clinic. More specifically, they provide healthcare services through an app where they mainly work with video consultations, but they also provide digital tools for treatment against mental illness and chronic medical diseases.

4.7.1. Digitalized value chain

In terms of their value chain, Red AB is purely digitalized and has no physical clinics. They believe that their biggest contribution is towards the technological platform. However, the company has collaborations with other healthcare actors such as pharmacists, laboratories and hospitals, where their customers can be treated physically.

Red AB has also experienced some difficulties as a result of being digitalized from inception. For instance, the CEO argues that their services are limited and cannot provide any physical

treatments, and many actors would question this concept as doctors have a need to physically examine patients to, for example, take blood samples. However, the CEO argues that they started Red AB in order to make doctors more efficient and improve their workflow with a smoother patient experience. He also adds that digital skepticism was more common when they founded the company, and since the pandemic they have seen less and less of this issue.

The CEO further argues that branding and marketing the company has been the most important activity in the value chain as a digital healthcare company, as it makes their product more "real" and less "digital":

> *"That's why we use marketing so heavily because we have to be where people are, it's not enough to have a Facebook ad, it has to be something in the streets like people are going to associate with being something real. Particularly within health because it's so personal and there is so much trust involved."*

When it comes to physical sales locations, the founder explains that in terms of revenue, Red AB is valued much higher than what a physical clinic is worth. He also believes that it would not be feasible to start with and adapt a physical clinic to be as digital and efficient as a purely digital clinic. The CEO further adds that their investors do not expect them to hire 50% of the doctors in the world, but rather that 50% of doctors in the world can use Red AB, which is why their business concept is perceived to be more valuable than running a physical clinic. The CEO argues that they will take the luxury of having physical clinics only when they start seeing results from their digital approach.

Furthermore, the CEO states that digital healthcare has boomed in Norway as a result of the pandemic. During this time the number of consultations that were done digitally went from 6% to 60%. The CEO further emphasizes that the phenomena is here to stay, as digital healthcare has much more to offer with "incredible" opportunities to improve the delivery of healthcare today.

4.7.2. Internationalization process

Red AB is currently present in two different markets: Norway and Denmark. The CEO argues that being a digital company and having a digital value chain has not influenced the company's

choice of which markets they have expanded to. The determining factor is stated to be more about where they could partner up with insurance companies, since 90% of the company's revenue comes from the insurance sector. For instance, in Denmark, Red AB partnered up with one of the principal insurance companies in the market.

Denmark was the first country that Red AB expanded to, two years after the foundation of the company. The CEO states that the choice to launch in Denmark was influenced by their main customer in Norway, as they also owned an insurance company in Denmark and wanted to open Red AB in that market. Moreover, the CEO further argues that digital infrastructure such as authentication solutions and the population's familiarity with digital tools are important factors that take into account when looking at international markets, especially since they vary a lot throughout Europe.

Furthermore, the founder of Red AB believes that using the domestic market as a springboard before internationalizing was important for their company, but also in general for all companies:

> *"Generally I would say that having a strong home market is good because you've proven your business model, you have a solid foundation, you have robustness in your organization, you learn kind of how it works in one place (…) so yeah I think you need a strong foundation before you spread all your resources."*

However, the CEO further points out that the process before internationalizing is much easier with more funding as you can hire employees more quickly and you can afford to hire more experienced people.

Red AB has, however, encountered some restraining factors when internationalizing. As stated by the founder, they were pioneers in the digital delivery of private healthcare services in Denmark, which resulted in first mover disadvantage. The CEO further explains that the challenge was to create a market that did not exist, and that the company had to teach the population what their business concept was about and prove that it works. He further argues that it takes a lot of time for populations to familiarize themselves with a new service.

The co-founder further stated that Red AB was subjected to a few preparations before the company could launch their business in Denmark. For instance, they had to change the app in order to have one Norwegian clinic and one Danish clinic, which entailed two different languages and two different identification systems. The CEO argues that they had to investigate the regulations in order to be compliant with the Danish market, however, that process was expressed to be "quite straightforward", as they had help from local lawyers. Adding to that, Red AB also had to recruit local doctors to enable the firm to launch their business in Denmark. However, the CEO explains that they did not acquire all the local benefits before expanding as they did not hire any local salespeople until after they were established in the Danish market. Once they did, this was said to be a gamechanger for the firm.

When it comes to networks, Red AB is part of a few different organizations for companies in the digital health space in the Nordic region. However, Red AB has not found them useful for their internationalization or any other aspect, and the CEO believes that they are rather overrated. More specifically, the founder argues that when the company needs help facing a challenge, it is often so specific that these networks cannot provide any direct value:

> *"It's quite limited value, I think. Of course, you get some publicity when you have some news and the head of these organizations mentions your company, you're going to get some PR effect from it. But we haven't really found much value in them."*

When discussing if digital firms tend to join these networks more than other companies, the CEO stresses that it might be more about the size of the company rather than how digitalized their value chain is. He further argues that smaller companies receive more benefits from joining such networks as the latter provide legal services that are more valuable for a company in the beginning. However, the CEO acknowledges that these networks give firms some credibility to stand on, but the challenge is to find a network that is relevant for the company and its industry.

When it comes to digitalization and national borders, the CEO of Red AB argues that local regulation is a factor that needs to be taken into account, as you need to be compliant in order to deliver your services in different markets. However, the regulatory aspects are not seen as a barrier as the importance lies in gaining local credibility in a market as well as benefits from

local salespeople. More specifically, the CEO stresses the importance of local expertise to succeed, which is why digitalization does not erase national borders.

4.8. White AB

We interviewed the CEO and Co-founder of White AB. This healthtech company was founded in Sweden in 2017 and specializes in providing a digital healthcare clinic. More specifically, they provide general healthcare services through video consultations and messaging through a platform on their website. Their digital consultations and programs are mostly designed for individuals with chronic medical diseases.

4.8.1. Digitalized value chain

When White AB launched their services, they were purely digital. However, they recently partnered with one of the larger pharmacy chains in Sweden and opened physical clinics, in order to further support patients who need physical examinations. As stated by the CEO, White AB is "digi-physical" but they try to be as digital as possible in their value chain towards the patient.

White AB has experienced some difficulties as a result of being digitalized from inception. For instance, the CEO argues that the Swedish national digital infrastructure in relation to healthcare legislation is "terrible" and holding back digital services:

> *"So from a specific Swedish point of view, it's cumbersome and there's a lot of work to do, to share information between digital and public financed healthcare providers."*

Furthermore, the CEO argues that the company initially experienced skepticism towards their services both from the customer perspective and the professional perspective, as doctors often need to physically examine their patients. However, as stated by the founder, the digital maturity of the population has increased due to aggressive rollouts of larger digital healthcare companies.

When it comes to the need of physical sales, the co-founder explains that having a digitalized value chain has reduced that need as there are many healthcare services that can be delivered online which reduces the number of physical doctor visits, and also because the way in which primary care is currently delivered is not cost efficient:

"We see that already today, some counties and regions have already started to switch over to more cheaper units where you can do almost the same thing but more cost effective closer to patients services."

In terms of digitalization and the pandemic, the founder of White AB argues that digital healthcare was a trend long before the current pandemic, with minor improvements developing during this period of time. However, the CEO argues that the pandemic has put more pressure on the digital healthcare development and has accelerated the adoption, and further believes that the phenomenon is here to stay.

4.8.2. Internationalization process

White AB is currently present in the Swedish market, and they have pilot projects running in Angola, Algeria, Nigeria and Bangladesh. The CEO argues that being a digital company and having a digital value chain has not influenced the company's choice of which markets they have expanded to, and that the distribution of medical knowledge in the world has been a more decisive factor:

"We see that there are huge opportunities in distributing this knowledge which is primarily a western thing where we have an overflow of the competences, to distribute it to other parts of the world where there is a lack of that knowledge, and of course the technology makes that possible."

The CEO argues that the reason for entering these four countries was due to their partners having established healthcare operations in those areas, as well as an existent lack of knowledge regarding chronic healthcare in these countries.

When it comes to using the domestic market as a springboard, the CEO of White AB argues that it has been important to test, to prove that the business concept works and to improve company abilities before becoming successful. The CEO further argues that Sweden has a good reputation when it comes to business in general but also for healthcare, and this has been an important factor when entering other markets:

"When it comes to launching services in other countries, of course for companies, the home market is always very important because that's the place where you actually have to prove the concept, improve your abilities."

White AB has also encountered some restraining factors when internationalizing. For instance, the CEO stresses that national healthcare is often very regulated with extensive local laws and regulations for healthcare companies in most countries. The CEO further argues that White AB has been obligated to make regional and national adaptations when launching their services in different markets, as regulatory aspects are very different between countries, and where local authorities need to approve White AB's digital healthcare services before they launch their business:

"You run into situations where we have greystones because we are now able to provide services and to provide another flow of knowledge and another flow of healthcare that the legislation has not been built for."

As such, the founder explains that there is a need for many preparations before entering the new market which is costly and time consuming. However, the CEO further points out that many of the hurdles are not identified until the company has entered the market and is interacting with both authorities and other entities in the value-creating process.

When it comes to networks, White AB is part of a few different organizations in the Nordic region. The founder argues that they joined these associations to build their network and to find partners that can help with the value creation in local markets. More specifically, the CEO states that these networks are more useful in the very early stages of a company, as they may be more reluctant to operate by themselves and seek partnerships with other companies that could add to the value proposition.

The founder further stresses that gaining legitimacy in these networks is an important factor, especially when it comes to digital healthcare providers as they are handling sensitive patient information which requires data security. For that reason, the CEO explains that White AB started to build their credibility 1.5 years before they launched their services, and further explains that firms have to be patient and consistent in their communication towards different target groups in order to build credibility.

When it comes to digitalization and national borders, the founder of White AB stresses that national borders are fading away in light of the growing importance of connecting different companies into relevant networks and building a better community for innovative and digital companies. However, national regulations within healthcare are stated to be very different in each country. White AB started out as a global company but due to regulations, the firm had to convert into a national healthcare provider that is compliant in Sweden, before adapting their services to new markets. According to the CEO, the digital healthcare development is an extremely slow and different process across European countries, where no major change is believed to happen in the near future when it comes to borders and regulations.

4.9. Orange AB

We interviewed the CEO and founder of Orange AB. This healthtech company was founded in Denmark in 2015 and specializes in providing digital dermatology services. More specifically, they provide an app that supports users with monitoring their skin for changes over time. The app imaging technology can be used to communicate with healthcare professionals, dermatologists and other primary care physicians, but the app itself does not treat or diagnose patients. Orange AB only provides a digital tracking of dermatology conditions changing over time, while doctors use the images for medical decision making.

4.9.1. Digitalized value chain

When discussing the value chain of the company, the CEO states that everything in Orange AB's value chain is digitalized. However, the founder also explains that Orange AB has many interactions with the traditional ecosystem as well, due to their business model of partnering with different organizations related to their field within healthcare.

Orange AB has experienced some difficulties as a result of being digitalized from inception. For instance, the CEO argues that digital health is still very new and specifies that the healthcare industry evolves, innovates and disrupts itself very slowly. This creates many challenges as there is a lack of national budgets for digital health which, the founder believes, stems from an absence of political decisions that regulate the market. However, the founder of Orange AB has experienced that the current pandemic has led many healthcare stakeholders to suddenly look into digital solutions that they can provide for their patients:

"I think that the value proposition with digitalization just got a lot more attention, which is relevant for the whole industry to actually be starting to cost optimize with digital technologies."

When it comes to the need of physical sales, the co-founder stresses that it depends on the business model. According to the founder, Orange AB has a compound business model, (Business-to-Consumer-to-Business), where digitalization has reduced the need for Business-to-Consumer interaction as all the sales are generated from digital online services. However, in terms of Business-to-Business, the CEO argues that there is a need for physical sales in order to demonstrate to potential partners what the business concept entails.

The co-founder further states that digital companies in the healthcare sector will become more common in the future due to the pandemic, and that the benefits of digital solutions have become more visible:

"*I think that Covid was kind of a trigger, but I think we just went a few steps up on the awareness, I think there is still a long way but I think relevance and optimizations and actually also the advantage of sometimes not having to see the patient physically, many things you can do remote and especially follow-ups."*

4.9.2. Internationalization process

Orange AB has a global presence but the US, the UK, Australia, Canada and the Nordics are their main focus. The CEO explains that Orange AB internationalized globally from day one because they knew that their business was a scale case and that succeeding in Denmark would be a limited business case for the firm.

The CEO further argues that being a digital company and having a digital value chain has influenced the company's choice of which markets they have expanded to, as digitalization enables the company to scale up to markets with a larger population. However, the CEO points out that they mainly consider which markets are subjected to dermatology conditions:

"So if you're going to address the global market, you need to start with some of the trending markets and in some of the bigger markets, and of course the UK and US were obvious choices and Australia of course also because skin cancer is very prevalent there."

When it comes to using the domestic market as a springboard, the CEO of Orange AB argues that this has not been important as they went international from day one. More specifically, the company "learned by doing" once they launched their services, by testing and working with patients and users at the same time.

Furthermore, Orange AB has encountered some restraining factors when internationalizing. For instance, the CEO explains that it has been a challenge being a Danish company operating in English-speaking countries, as there are many cultural differences to take into account. In these contexts, not being a native speaker has had a negative influence on the company's credibility:

"Not being native English means that every UK or US person that reads our material that we write, they can see that it's not a native English speaking firm, so we lose a little bit of trust on that."

Adding to that, national regulations within digital healthcare are also considered to be obstacles for the firm, which have influenced the choice of which markets Orange AB are present in today. The CEO believes that Europe is over-regulated and that it was easier for the company to expand to the US. However, regulatory aspects are existent regardless of where companies expand to, and it is necessary to get approval from local authorities in order to be compliant in certain markets.

In terms of preparations, the founder stresses that the company mostly did everything "running", as they had to learn everything along the way. Moreover, the founder argues that they mostly handled their obstacles once they had entered the foreign market, and that rules and regulations are continuously changing. The process of being compliant is an ongoing process at all times, according to the CEO.

When it comes to networks, Orange AB is part of a few different organizations in the Nordic region, but also other parts of Europe. The CEO explains that such networks are very important in the early phase of a company, as they can provide firms with support, meetings with

investors, and help with different challenges that new companies face. However, the founder also emphasizes that when a company requires help with a specific issue, it is often too specific that these networks cannot provide any direct value.

The founder stresses that not all networks have been helpful, as some provide more value than others, and he also explains that joining such networks is not exclusive to digital firms. Furthermore, the CEO states that gaining legitimacy and credibility is vital for any company, but especially for healthcare companies, regardless of being digital or not. In this light, the support from various actors throughout the industry is decisive to a firm's success:

> *"I think it is vital for any company, and I think especially for health companies no matter if they're digital or not. At the end of the day if you don't get the love and support from the industry, key opinion leaders, authorities, I don't think you have a chance. So that's extremely important and that's without discussion I would say."*

In terms of the process of becoming credible within healthcare, the CEO does not see this as a hard process as long as the company is transparent about its claims and communicates in a clear way.

When it comes to digitalization and national borders, the founder argues that the pandemic has reduced the importance of borders to some extent, as it removed the need to cross them. However, according to the founder of Orange AB, they are still very existent due to local laws and regulations, and also due to an increase in collaborations and acceptance of different cultures around the world:

> *"So in that way borders have been smaller, but I think for digital companies like ours, we will be challenged and we will have to adapt our solutions to comply to all local rules. So I think laws and regulations are still local, I don't think that borders will go away in that sense."*

4.10. Summary of the empirical findings

4.10.1. Born Digitals in the healthtech sector

A summary of each study case regarding firms with a digitalized value chain in the healthtech sector is provided in *Table 2* below. This displays categories that have been identified as being important for digital firms, such as how digitalized the value chain is, the constraints, the most important activities in the value chain, the need for physical sales, as well as if the current pandemic has affected the digital adoption in the industry.

Table 2: Summary of Born Digitals in the healthtech sector

Companies	100% digitalized value chain	Constraints from being digital	Most important activity	Need for phsyical sales is reduced	Acceleration of digital healthcare due to COVID-19
Blue AB	✓	Digital skepticism	Too soon to tell	Yes	✓
Black AB	✓	Digital skepticism; Bad digital infrastructure in the healthcare sector	Personal contact in the sales process	Yes	✓
Brown AB	✓	Digital skepticism	Personal contact in the sales process	Yes, but physical sales will never dissapear	✓
Green AB	✓	Company culture	Personal contact in the sales process	Yes, but physical sales will never dissapear	✓
Pink AB	✓	Digital skepticism	Marketing and value creation inside the product	Yes, only for Business-to-Consumer markets	✓
Yellow AB	✓	Digital skepticism	Personal contact in the sales process	Yes, but physical sales will never dissapear	✓
Red AB	✓	Digital skepticism	Branding and marketing	Yes, from a financial perspective	✓
White AB		Digital skepticism; Bad digital infrastructure in the healthcare sector	Personal contact in the sales process	Yes, from a financial perspective	✓
Orange AB	✓	Lack of budget for digital health	Too soon to tell	Yes, only for Business-to-Consumer markets	✓

4.10.2. Internationalization process of Born Digitals in the healthtech sector

A summary of each study case regarding the internationalization process in terms of *speed, geography* and *networks* is provided below in *Table 3, Table 4* and *Table 5* respectively. These tables display the effects we identified as being important when entering foreign markets with a digitalized value chain. In *Table 3,* we have identified if the internationalization speed is gradual or born global, if succeeding in the domestic market is important, as well as if there are constraining factors and preparations that are needed before internationalizing. In *Table 4,* we have identified geographical aspects. These include factors that are influenced by being digital when expanding, the regional or global nature of the geographical expansion, the underlying reasons for expanding, as well as the link between digitalization and national borders. Lastly, in *Table 5,* we have identified the network-related factors such as integration, reasons for

joining, value, as well as the importance of legitimacy in networks when expanding to new markets.

Table 3: Summary of the internationalization speed in the healthtech sector

Companies	Expansion	Importance of succeeding in domestic market	Constraining factors when expanding	Preparations before internationalizing
Blue AB	Gradual	✓	Local regulations	Local adaption to the healthcare system
Black AB	Gradual	✓	Financial costs such as marketing and hiring a sales team	No preparations
Brown AB	Gradual	✓	Local regulations	Local adaption to the healthcare system and local recruitments
Green AB	Gradual	✓	Local regulations	Local adaption to the healthcare system
Pink AB	Gradual	✓	Local regulations	No preparations
Yellow AB	Gradual		Local regulations	Local adaption to the healthcare system and local recruitments
Red AB	Gradual	✓	First mover advantage	Local adaption to the healthcare system and local recruitments
White AB	Gradual	✓	Local regulations	Local adaption to the healthcare system
Orange AB	Global from inception		Local regulations and cultur differences	Local adaption to the healthcare system

Table 4: Summary of the geographical expansions in the healthtech sector

Companies	Factors influenced by being digital when expanding	Expansion to geographical proximity	Underlying reason for the first expansion	Digitalization and national borders
Blue AB	None	✓	Personal contact and natural spillover effect	Borders are less important
Black AB	Digital infrastructure and people's mindset towards digital services	✓	Personal contact and market size	Nationalism still exists and digitalization does not take that away
Brown AB	The adaptation of digital healthcare	✓	Pushed by partnerships	National regulations makes it hard to become borderless
Green AB	The adaptation of digital healthcare and it enables opportunities in larger markets without traveling		Regulatory adaptations for digital healthcare, pushed by partnership and market size	National regulations makes it hard to become borderless
Pink AB	The fact that there is no need to physically be in the foreign market		Regulatory adaptations for digital healthcare	*No data*
Yellow AB	Enables opportunities in larger markets without traveling	✓	Personal contact, similar digital infrastructure	National regulations makes it hard to become borderless
Red AB	None	✓	Pushed by Partnership and similar digital infrstructure	Markets are different and digitalization does not take that away
White AB	None		Lack of medical knowledge and pushed by partnerships	National regulations makes it hard to become borderless
Orange AB	Enables opportunities in larger markets		Market size and medical challenge	National regulations makes it hard to become borderless

Table 5: Summary of networks in the healthtech sector

Companies	Intergrated in networks	Reason for joining networks	Value from network	Legitimacy
Blue AB	✓	Group pressure, support and finding investors	Important	Important within healthcare
Black AB	✓	Market information	Important	Important within healthcare
Brown AB		Support	No value	Important within healthcare
Green AB	✓	Expand the firm network and build credibility	Important	Important for any company
Pink AB	✓	Market information	Important	*No data*
Yellow AB	✓	Support and finding investors	More useful in the early stage of a company	Important for any company
Red AB	✓	Group pressure	More useful in the early stage of a company	Important for any company
White AB	✓	Expand the firm network and to find partners in local markets	More useful in the early stage of a company	Important within healthcare
Orange AB	✓	Support and finding investors	More useful in the early stage of a company	Important within healthcare

5. Analysis

For this study, we gathered empirical, qualitative interview data from a total of nine healthtech companies from the Nordic region. This chapter contains the analysis of resulting empirical findings outlined in the previous chapter. We analyzed the data by applying the theoretical framework from *section 2.3* to the empirical findings. As such, the forthcoming sections present a thorough analysis of what it means to be a Born Digital firm in the healthcare sector and how this may affect internationalization in terms of *speed, geography* and *networks*.

5.1. Categorization of Born Digitals in the healthtech industry

This section categorizes the notion of Born Digitals in the healthcare industry in order to provide an answer to our research question. The value chain of the case companies will be scrutinized based on the level of digitalization, the restrains that they experience as a result of being digital, what they perceive as their most important activity, their perceived need for physical sales locations, as well as their view on the effects that the pandemic has had and will have on digital adoptions.

The research findings outlined in the previous chapter demonstrate that all case companies but one have a purely digitalized value chain which, according to Vadana et al. (2019) includes core activities, inward and outward, being activated or coordinated by internet applications and technologies instantly after the firm's inception. Only one company was shown to have recently changed their value chain to digi-physical, and another company is planning to become digi-physical in order to provide the customers with a full end-to-end experience. However, these two companies try to be as digital as possible in their value chain towards the patients. Therefore, one can conclude that Born Digitals mostly have a purely digitalized value chain although in some cases, they can also have a partial digital value chain. This is also in line with the definition that Vadana et al. (2019) provide for Born Digitals.

5.1.1. Constraints from being a Born Digital

Based on the analysis of the empirical data, it is evident that the respondents started their companies to make healthcare more efficient and more accessible through digitalization, thus creating new ways of delivering primary healthcare. Based on the research findings, we can observe how this phenomenon has led to the emergence of digital companies as expressed by

Wentrup (2016) and Nambisan (2017), as well as changing the fundamentals of the healthcare industry explained by Autio & Zander (2016), Cao et al. (2018) and Weill & Woerner (2015). Accordingly, it is only natural that companies with a digital value chain are not only met with new opportunities as suggested by Autio & Zander (2016), but also with some constraints as people can question concepts resulting from the emergence of new types of services.

As such, we identified a clear trend among the respondents where seven out of nine claimed that digital skepticism was among the factors that represented a constraint from being a digital company in the healthcare sector. It emerged that digital skepticism is present among doctors, while the strongest occurrence was noted by seven respondents to be present among patients, customers and the end users of their technology. This can be explained by drawing on Kayyali et al.'s (2015) argument that digital skepticism is one of the main challenges that has occurred due the paradigm shift in the healthcare industry. Several respondents noted that the level of skepticism is especially high at the inception of the company, but slowly decreases as time passes. When larger digital health companies roll out their solutions, skepticism towards digital solutions is reduced among the population since it increases the digital maturity as one respondent stated. A general increase in digital maturity means a higher acceptance of digital solutions in healthcare. A correlation between digital skepticism and cultural and geographical differences also seems likely, since a poor digital infrastructure or widely shared privacy concerns among a certain population could explain a high level of skepticism towards new digital solutions. Significant differences in national and regional regulations, languages and cultures across borders as stated by Corado Simões (2019) can be regrouped under geographical factors and can therefore be linked to various levels of digital skepticism.

Two respondents also identified bad digital infrastructure in the healthcare sector as a reason for experienced difficulties. Specifically, one respondent named challenges with reimbursement systems as a central issue surrounding digital healthcare solutions. National healthcare legislation was also said to be a considerable hurdle for another respondent since it can hold digital services back. Regulations and lack of funding are also factors that impact innovation. As stated by Vadana et al. (2019), the evolution of digital activities within the value chain is dependent and influenced by the industry as well as changes in the market. A market that does not support innovation is therefore evolving at a much slower pace. Therefore, it can be argued that the phenomenon of digitalization within the healthtech sector is still under

development and thus the extent of digital transformation remains rather unknown as stated by Brouthers et al., (2016) and Wentrup (2016).

5.1.2. Most important activities for the firms

While Born Digitals have activities that are, in essence, different from traditional company types, some of these activities have a higher importance to the company than others. The analysis of our data suggests that even though physical sales will never fully disappear, all of our participants believed that the significance of having physical sales locations is decreasing for companies that sell digital products and services. This is related to the fact that digital sales are easing the sales process altogether, since it gives access to the world market without the need to establish a physical presence first. Asset and location specificities therefore do not play an important role for Born Digitals, which also reduces the need for capital requirements as explained by Autio & Zander (2016). Moreover, the data analysis further suggests that digital sales facilitate factors such as internal and external communication and coordination. Virtual delivery channels therefore also reduce transaction costs for the company, as observed by Bunduchi (2005).

However, the decreased relevance of physical sales locations does not suggest a decreased need for personal contact and relations with the customer. On the contrary, five respondents stated that personal contact with their customers remains a key element of their company. For some, this is due to the success rate of their services that improves when there is direct contact with the patient, while others see it as a necessity to reduce digital skepticism among patients. One respondent explained that customers are more likely to embrace digital solutions when they see that there are real people behind the provided solutions. Another two case studies suggested that marketing and branding have been the most significant activity for a digitalized value chain. This can be supported by Wittkop et al. (2018), who state that brand reputation is more crucial for digital firms as the competitive advantage is different for such firms. The remaining respondents implied that it is too soon to tell what activity has been more important than others, as digital healthcare is still very new and the healthcare industry evolves, innovates and disrupts itself very slowly. As explained by Brouthers et al. (2016) and Wentrup (2016), the extent of digital transformation in this industry still remains rather unknown and thus we have yet to identify the effect of digital transformation on activity importance.

5.1.3. Results of the pandemic on Born Digitals in healthcare

As previously mentioned, we discovered that a majority of the case companies experienced consequences from digital skepticism, as explained by Kayyali et al. (2015). However, the current pandemic has led countless services throughout the economy to become more or fully digitalized out of necessity, which has led to higher acceptance of digital health services among users since digital solutions have become the standard to some extent. This is in line with Faraj et al. (2021), who found that the COVID-19 pandemic lockdown resulted in a sudden shift from face-to-face to digital interactions, especially within the healthcare industry through an increased use of digital services.

We can therefore argue that COVID-19 and the effects of the pandemic have contributed to the lessening of digital skepticism among patients and healthcare professionals, since the rules in place as a result of COVID-19 have forced individuals to consider digital solutions as a substitute for ordinary physical activities. This obligation to adapt to the situation has led many to embrace new technologies in the healthtech sector and to realize their benefits, as one respondent has explained. We detected a broad consensus among the respondents that they believe that digital healthcare services are here to stay and will not disappear once the pandemic is over. Born Digitals can therefore be argued to have become more common and can be expected to remain relevant in the future since their benefits are becoming more widely known among users.

5.2. Internationalization process in the healthtech industry

It is evident from the empirical findings that the internationalization processes of different healthtech firms in the Nordic region are quite similar to one another. There are a few differences that are noteworthy, but in general the findings suggest that the internationalization process can be generalizable towards the nine company cases of this thesis. Digitalization together with having a digitalized value chain within the healthcare sector has, undoubtedly, been an important influence on the company cases when it comes to the internationalization speed, which markets they have expanded to, as well as their integration with different networks. The empirical findings further emphasize that the business environment in the healthcare industry is changing due to digital opportunities making healthcare more efficient, which is in line with scholars such as Autio & Zander (2016), Cao et al. (2018) and Weill & Woerner (2015) as they claim that digitalization creates new opportunities for firms to grow

and internationalize. In the following three sections, the internationalization process of healthtech firms will be scrutinized in terms of speed, geography and networks. This discussion provides concluding answers to our research question: *How does a digitalized value chain affect the internationalization process of Nordic SMEs within the healthtech industry?*

5.2.1. Speed

The empirical findings and data analysis demonstrate that Born Digital healthtech firms internationalize gradually and not globally from inception. All case companies except for one expanded their business in a step-by-step procedure, where seven of them ensured that they had succeeded in the home market first, with finding the right partners and the right business model for their specific concept before expanding to international operations. According to Hilmersson and Johansson (2015), this can be a rather slow process as the firms need to acquire enough experience in the home market before they proceed with operations abroad. As such, the internationalization process of Born Digitals in the healthtech sector can be explained by the traditional Uppsala Model from Johanson & Vahlne (1977), as they argue that it takes resources and experiences to start the internationalization process and to proceed with the operation in a successful way.

Having a digital value chain appears to facilitate an acceleration in the internationalization process compared to traditional companies, as most of the case firms made their first expansion on an average two years after the firms were founded. According to Luostarinen & Gabrielsson (2006), the domestic stage of traditional companies spans almost ten years, which implies that Born Digital healthtech firms expand their business in a step-by-step procedure like traditional firms, but much quicker due to their digital opportunities. Theories on Born Globals and International New Ventures (Oviatt & McDougall, 1994; Cavusgil & Knight, 2015) which demonstrate that technological innovations can facilitate the internationalization, can thus be applied to Born Digitals as they also seem to accelerate the speed of internationalization. However, as represented in the empirical findings, they do not internationalize directly from inception which differs from the aforesaid theories. Therefore, based on our data analysis of the empirical findings, we argue that Born Digitals are to some extent compatible with both the Uppsala Model (1977) and theories regarding Born Globals and International New Ventures. The difference lies in that Born Digitals in the healthcare sector do not internationalize from inception, but they do expand quicker than traditional companies due to digital opportunities

decreasing the need for a physical presence. As the research findings show, only one case company internationalized on a global scale and for them, being a digital company influenced this choice as the digital opportunities enabled the company to reach larger and more relevant markets for their concept. Other case companies also argued that theoretically, digital companies have the opportunities to be present in all countries in the world as all operations can be managed from the headquarters in the domestic market. This implies that healthtech firms with a digitalized value chain have the opportunity to be global if they desire, although they may be restricted for different reasons which results in the internationalization process being hindered to some extent.

According to scholars such as Laurell (2015), the internationalization process of healthtech firms is restricted because of the healthcare sector being a complex market in which national regulations can vary from country to country. The empirical findings strongly support this statement, as a majority of the case companies have been subjected to regulatory constraints, internationally as well as nationally, which ultimately slows down digital opportunities when expanding. In order to deliver digital healthcare services in foreign markets, companies are obligated to be compliant with national regulations, otherwise they cannot fully deliver their services. As such, Born Digitals in the healthcare sector do not internationalize directly from inception due to different national regulations in the industry. Instead, they gradually expand in order to be compliant with the local healthcare systems. This can further be explained by Volk et al. (2015) and AlSudiary (2015), as they discuss the legislative challenges that come with digitalization and healthcare in general.

As a result of these regulatory aspects, Born Digitals in the healthcare sector are subjected to many preparations before entering a foreign market. These are not impossible to overcome but can be complex and very time consuming for the company before they can deliver their services abroad. Mostly, local adaptations of the country in terms of regulations and hiring of local salespeople is what takes time and resources from the company. This further confirms that the development of Born Digitals in the healthcare sector can be explained by the traditional Uppsala Model, as Johanson & Vahlne (1977) argue that it takes resources and experiences to start the internationalization process.

The empirical findings also suggest that some of the case companies encountered obstacles once they had already expanded to the foreign markets. Even though digitalization enables

firms to seek and access more information about different markets today than before the introduction of the internet, the empirical findings suggest that many of the obstacles are found once the company has already internationalized and when it is adapting to the local markets, which thus hinders the internationalization process to some extent. This can be explained by Luostarinen & Gabrielsson (2006) who discuss companies that progress in the reverse order than what is argued by Johanson & Vahlne (1977), meaning that firms establish themselves in a foreign country first before they adapt themselves to the local market with its regulations and other local requirements.

It is noteworthy, however, that some case companies saw these constraints as an advantage instead of an obstacle, as the first local regulatory adaptations were necessary in order to further expand to other markets. This means that the constraint in the first expansion resulted in having a strategic advantage in forthcoming expansions, where only minor local adaptations to other markets were needed. As opposed to Laurell (2015), this suggests that the internationalization process of healthtech firms may only be complex, slow and focused in the first foreign market entry and not in all expansions.

5.2.2. Geography

The assessment of where Born Digitals in the healthcare sector have expanded has two perspectives. The majority of the empirical findings suggest that Born Digitals in the healthcare sector expand to markets with close proximities to the domestic market. The remaining four companies suggest that Born Digitals internationalize to markets that enable better opportunities in terms of financial and medical matters.

There is no doubt for either of the two perspectives that the company cases have expanded their business to foreign markets to provide the firms with additional sales opportunities as claimed by Oakey (1993). As many as five companies from our study have undertaken a regional expansion within the Nordic region. This process can be identified with the traditional theory of the Uppsala Model by Johanson & Vahlne (1977), who claim that firms first internationalize via small steps by entering neighboring markets that have a shorter psychic distance to the home market countries. Moreover, Chen (2006) argues that especially Business-to-Consumer firms expand regionally in this manner. Indeed, the empirical findings imply that Nordic healthtech firms internationalize within Scandinavia first due to having personal contacts within the

region, natural spillover effects in the industry with similar digital infrastructure, as well as having partnerships pushing them to enter Scandinavian markets. This is also in line with findings from scholars such as Moen et al., (2004), who specify that firms enter foreign markets through a network partner in close proximity to the home country.

The other four companies of our study have not regionally expanded their business as they are present in markets with a larger psychic distance than the Nordic region. On the contrary, they have internationalized to markets depending on the lack of medical services, a higher occurrence of certain medical conditions due to geographical factors, as well as the development of regulatory adaptations for digital healthcare. Naturally, the opportunities that come with digitalization have influenced the choice of which markets these companies have entered. For these four companies, the internationalization process was influenced by the need for digital healthcare services more so than expanding to markets with a shorter psychic distance. As Johanson & Vahlne (1977), Chen (2006) and Moen et al. (2004) argue, firms expand to neighboring markets, these four particular companies cannot be explained by the argument put forward by these scholars.

Wentrup (2016) concluded that online service providers are born at home rather than born global, and that these companies use the home market as a springboard to entering foreign markets. In relation to the empirical findings, the statement above applies to all but two of our case companies. To clarify, seven case companies argue for the importance of succeeding in the domestic market before internationalizing, especially in terms of testing the product, finding the right business model and proving that the concept of digital healthcare works. Therefore, we argue that Born Digitals in the healthcare sector are born at home rather than born global, as opposed to the global opportunities that come with digitalization expressed by Oviatt & McDougall (1994) and Cavusgil & Knight (2015).

Wurster & Evans (2000) and Lituchy & Rail (2000) claim that internet-based firms are able to benefit from a global market because of lower transaction costs and a wider reach, both of which are due to the internet. The empirical findings strongly support this statement, and the findings further suggest that international expansions of healthtech firms in the Nordic region are positively influenced by the fact that they are internet-enabled companies. This means that being an internet-enabled company in the healthcare sector influences the choice of which markets to enter, which opposes the arguments held by Chen (2006). For instance, the research

findings illustrate that being digital affects the decision to enter markets in relation to the adaptation of digital healthcare, a positive mindset towards digital services, as well as the opportunities to enter larger markets than the domestic market. In other words, Nordic healthtech firms enter markets that are highly adapted to digital infrastructures and digital services within the healthcare sector. Seeing that digital healthcare is a new phenomenon and that our findings confirm that the development of digital healthcare varies between different countries, it is no coincidence that Nordic healthtech firms internationalize both on a regional and global basis.

In addition, the research findings show that healthtech firms with a digital value chain are not subjected to expansions to lead markets as argued by Shaheer et al., (2020). As mentioned before, Nordic healthtech firms are more concerned with reaching markets with a short psychic distance or having a need for digital healthcare services.

When it comes to digitalization and national borders, the findings suggest that digitalization per se is not dependent on borders. However, regulations, local institutions and nationalism are key influencing factors as they are perceived to be very different from country to country. The empirical findings suggest that digitalization does not remove that fact, which makes it hard to foresee a scenario where the healthtech industry becomes completely borderless due to digitalization.

5.2.3. Networks

When evaluating the importance of networks for Born Digitals in the healthcare sector, the empirical findings demonstrate that all case companies but one are integrated in networks related to business operations in the Nordic region. While two respondents suggested that digital companies are more likely to join such networks due to their digital nature, four respondents argued the contrary which opposes the argument by Brouthers et al., (2016). More specifically, our findings suggest that joining such networks is not exclusive to digital firms as networks are important for any company that wants to expand into new markets, increase sales or build credibility. Moreover, when analyzing the research findings, it appears that the value of networks in the internationalization process for Born Digitals is debatable. While the majority of the case companies imply that Born Digitals gain no direct value from networks when internationalizing their operations, the remaining four companies suggest the opposite.

The research findings highlight that participation in relevant networks allows companies to gain access to different resources, market information as well as to gain credibility. This can be explained by Laghzaoui (2001), Brouthers et al., (2016) and Coviello (2006), as they argue that networks provide firms with a reservoir of resources of knowledge, experience and funding, as well as enable them to further broaden the firm's relationships to facilitate gradual expansions beyond the domestic business. Accordingly, networks play an important role for Born Digitals in their operation strategies. However, some findings seem to imply the contrary. Five case companies suggest that networks have not been useful for their business operations nor their internationalization strategies, and it is emphasized that when the company requires help, the need or situation is often so specific that these networks cannot provide any direct value to the company. Interestingly, these same five companies agree on the fact that networks are most important in the starting phase of a company as they do provide general support, resources and credibility that are necessary for the growth of a company.

The remaining four companies deem networks to be highly important as they have worked as a facilitator for their internationalization processes. This can be associated with scholars such as Hohenthal et al., (2014), Manolova et al., (2014) and Coviello & Munro (1995) as they argue that networks are beneficial and can function as a facilitator to internationalization. It becomes clear that without these networks, the internationalization process of these four case companies would have been much more complex and more time consuming.

Thereby, it can be concluded that networks give firms with a digital value chain access to valuable information and knowledge which is essential for a successful foreign market entry, as claimed by Johanson & Vahlne (2009), Laghzaoui (2001), Brouthers et al., (2016) and Coviello (2006). The only difference for Born Digitals that needs to be emphasized is that networks are more important in the starting phase of a company, and that the challenge lies in finding the right network for the right type of company. Conclusively, it can be argued that Born Digitals in the healthcare sector are subjected to liabilities of outsidership when not establishing a position within a network as stated by Brouthers et al. (2016) and Johanson & Vahlne, (2009).

When assessing the research findings, it becomes clear that all case companies deem the process of becoming legitimate or credible in networks as an important factor for any company expanding their business. In particular, the findings suggest that becoming credible in the healthtech industry with a digitalized value chain is a gradual process across networks. This can be explained by Lagerström & Lindholm (2020), as they state that firms internationalize by undertaking incremental activities in networks prior to entering foreign markets.

Respondents from five case companies emphasized that due to the sector they are in and the fact that they need to handle patient information in a secure way, it is especially crucial for Born Digitals in the healthcare sector to become credible in their networks in order to increase their sales nationally as well as internationally. It is argued by several respondents that even though it is easier for digital companies today to become credible than what it was five years ago, credibility and legitimacy remain important factors in the success of digital healthcare companies. For instance, one case company started the process of becoming credible 1.5 years before they launched their services, and others focused on becoming scientifically and clinically proven to increase their legitimacy in the industry. This is further explained by Bangara et al. (2012), who claim that the legitimacy of a company plays an important role when establishing a foothold in a network as the relationship with other network partners functions as the judgment of the acceptance, credibility and desirability of the new firm. The legitimacy of a Born Digital in the healthcare sector is therefore seen as a springboard for creating and upholding relationships with potential customers as well partnerships. This further suggests that the internationalization process is a gradual process across networks for Born Digitals in the healthcare sector, and thus firms with a digitalized value chain are supported by the revisited version of the Uppsala Model (Johanson & Vahlne, 2009).

6. Conclusion

The purpose of this thesis was to analyze Born Digitals in the healthtech industry. More specifically, in this thesis we sought to answer the following research question: *How does a digitalized value chain affect the internationalization process of Nordic SMEs within the healthtech industry?* A conceptual framework was thus developed based on an extensive literature review. Here, key themes within digitalization and internationalization theories were identified, and the essential factors *speed, geography* and *networks* were embedded within the conceptual framework. Empirical data was collected through online interviews with respondents representing nine case studies in the Nordic region. In the data analysis, the notion of Born Digital in the healthcare sector was classified and analyzed through the conceptual framework found in *section 2.3*. Furthermore, this chapter presents the conclusion of our study.

The results show that being a Born Digital can be a weakness in the beginning of the internationalization process due to legitimacy concerns and skepticism towards the service. However, this is not only a result of being digitalized, but is further amplified by the conservative nature of the healthcare sector. On the other hand, we have seen that the current pandemic has played a major role in absorbing these effects, since it forced everyone to embrace digital solutions. This helped digital healthcare providers to overcome initial skepticism and led to a greater acceptance of their services. We found that even though physical sales locations do not play an important role for Born Digitals, physical contact and interactions with the customer remain a crucial activity of the value chain that reduces digital skepticism towards digital healthcare. It is also important to note that unlike traditional companies, firms with a digitalized value chain have the advantage that their solutions can be bought and sold in almost any market without the need to open a physical sales location. A digital value chain in this sense is therefore an enormous advantage when internationalizing, since it can facilitate and thus speed up the process.

Moreover, Born Digitals in the healthtech sector are born at home rather than born global. Firms with a digitalized value chain have the opportunity to be global if they desire to pursue this option, however they may be restricted by national regulations which results in the internationalization process to be somewhat hindered. Born Digitals are to some extent compatible with the Uppsala Model (1977) and theories regarding Born Globals and International New Ventures (Oviatt & McDougall, 1994; Cavusgil & Knight, 2015). The

difference lies in that Born Digitals in the healthtech sector do not internationalize from inception, but they expand quicker than traditional companies due to digital opportunities decreasing the need for a physical presence. We also found that the internationalization process of healthtech firms may only be complex, slow and focused in the first foreign market entry. Furthermore, our analysis shows that Born Digitals in the healthcare sector are not subjected to expansions to lead markets. Their internationalization may be driven by a desire to reach markets with a short psychic distance or meet a need for digital healthcare services. These factors play a crucial role in where Nordic healthtech firms expand to. We can also conclude that having a digitalized value chain is not dependent on borders but rather on regulations, local institutions and nationalism, which are different from country to country. Therefore, it is hard to foresee a scenario where the healthtech industry has become completely borderless due to digitalization.

Our analysis also suggests that Born Digitals are integrated in different networks in order to enter new markets, increase their sales and build credibility, especially in the early stage of a company. Therefore, one can argue that networks play an important role for Born Digitals in their operation strategies, however, the value of this decreases over time as the company expands. Indeed, expansion leads to new challenges that result in being too specific for networks to provide any direct value to the company. We further found that the legitimacy in a network of a digital value chain in the healthtech industry is a key factor when it comes to creating and upholding relationships with potential customers as well as partnerships. As gaining credibility is time consuming for healthcare providers, we also argue that foreign expansion is a gradual process across networks for Born Digitals in the healthtech sector, and thus Born Digitals are also supported by the revisited version of the Uppsala Model (2009).

In addition to the above conclusions, this study further contributes to the limited research field on Born Digitals. The thesis especially contributes to the scarce literature regarding digital value chains in the healthtech service industry and thus provides a more holistic overview of such companies. Moreover, our findings add understanding of the previously understudied concepts of internationalization speed, geographical expansions and networking when having a digitalized value chain in the healthtech industry. Lastly, the study contributes to research regarding the internationalization process of SMEs specifically in the Nordic region.

6.1. Managerial implications

As our findings highlight the value that companies can gain from joining networks, we can say that generally, it is in the best interest for managers of SME healthtech firms to integrate and make use of supportive networks as soon as possible to build relationships within and outside of these networks. These relationships are helpful to boost sales and build credibility and can therefore be particularly useful during the early stages of a company's internationalization process. We argue that even though Born Digitals internationalize at a faster pace than traditional companies, managers should opt for a gradual internationalization and should focus on markets which ideally offer comprehensive regulation, suitable digital infrastructure as well as reimbursement systems that are favorable to digital healthcare providers. Furthermore, we advise managers of SME healthtech firms to not underestimate challenges such as digital skepticism in the market and to work towards building legitimacy and credibility in the market to reduce this challenge, while also considering that even for digital solutions, retaining personal contact and interaction with the customer is of great importance and makes a significant contribution to the acceptance of the solution.

6.2. Limitations and future research

While this thesis brings forward important contributions and insights regarding the notion of Born Digitals and the internationalization process of SMEs in the healthtech industry, there are certain limitations that need to be addressed. First, this research is limited to companies in the healthtech service sector in Sweden, Norway and Denmark. This influences the transferability of the research findings and additional studies are necessary to explore Born Digitals and internationalization processes in other geographical contexts, with other firm sizes and in segments other than the healthtech service sector. Furthermore, the generalizability of the findings is affected by the qualitative nature of our study, and this hinders the findings from being applicable to all digital healthtech SMEs in the Nordic region. Therefore, there is a need for similar studies with a larger number of participants in order to increase the generalizability. Research of quantitative nature could explore the wider significance of the detailed insights gained by this small-scale, qualitative study.

In addition to the highlighted limitations above, we would like to bring forward aspects that we recommend being researched in future studies. As reflected in the findings, networks play an important role in the international strategies of healthtech companies, therefore it would be

valuable to research managers' personal international attitudes and international experiences and to what extent these affect the process of entering foreign markets. This aspect can provide further insight on the internationalization speed of Born Digitals, and thus further expand on the contributions put forward by this thesis. Finally, skepticism towards digital healthcare emerged as a major constraint in the findings, and therefore it would also be of value to study the extent of digital skepticism across different countries and its effects on the geographical expansions for Born Digitals.

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Appendix

Appendix 1

Email to the case companies

Dear Sir or Madame,

We are two graduate students from the School of Business, Economics and Law at the University of Gothenburg in Sweden, currently working on our master thesis project in the field of International Business within the healthtech industry. More specifically, our research seeks to deepen the understanding to what extent digitalized value chains* affect the internationalization process of Nordic SMEs within the healthtech sector.

As your firm is an SME healthtech company with international operations, we are highly interested in your views on digitalized value chains and how it has affected the firm's internationalization process. Your contribution would help us greatly to further understand the internationalization process of healthtech firms as well as the concept of digital value chains. Furthermore, your participation can be anonymized, and the gathered data will be used for academic purposes only.

As such we would be very grateful if your company would consider to participate in our study through one online-interview (app. 45-60 minutes). Please do not hesitate to ask us if you have any questions. We are looking forward to your kind reply.

Sincerely,

*By digital value chains we mean core activities, inward and outward, being activated or coordinated by internet applications and technologies instantly after the firm's inception.

Appendix 2

Interview guide

General questions about the respondent and company:

Name and briefly describe the company
What is your title and responsibility?
When did you start working at the company?
Total number of employees?

Digitalization

- Can you please briefly describe your value chain?
    - What parts of your value chain are digitalized?
    - Who is responsible for each activity?

- Have you encountered any constraints when **implementing** a digitalized value chain?

- Have you experienced any difficulties as a **result** of being digitalized from inception?

- Has any activity in the value chain been more important than other activities?

- Does a digitalized value chain reduce the need of physical sales locations? Please elaborate.
    - In your professional opinion, do you see the need for physical sales locations in the future for digital firms?

- Do you believe that, as a result of COVID-19, that digital value chains in the healthcare sector will become more common in the future?

Internationalization

- How many markets are you present in?
    - Do you think that being digital has influenced the choice of what markets you are present in? Please explain in what way.

- Where did you first internationalize?

    - What are the underlying factors of internationalizing to this market?

- Did you internationalize from inception?
    - If yes, please explain why. Did you enter several markets at the same time? Why not?
    - If not, please explain why.
        - How long did it take before you internationalized? And did you enter one country at a time?
        - Would you say that using the domestic market as a springboard is important for digital firms before entering foreign markets?
            - Please explain why.

- Have you encountered any restraining factors when internationalizing with a digital value chain?
    - If yes, please describe them.
    - Would you say that these factors hindered the internationalization process?

- Did you have to do any preparations before internationalizing?
    - If yes, please describe them.
    - Would you say that these preparations hindered the internationalization process?

- Are you integrated in any associations or organizations tied to the Nordic region?
    - If yes, which ones and how many?
    - If not, please explain.
    - Are you integrated in any associations or organizations to other regions?

- What is the purpose of joining such networks and what do these networks offer for your company?

- Have these networks helped you in your internationalization process?
    - If yes, please explain in what way.
    - Would you say that these networks affect your decision of which markets to enter?
    - Would you say that joining such networks accelerated your internationalization process?

- Do you think that by having digitalized value chain, that you are more likely to join networks in order to expand your company?
    - Please explain why.
    - In your professional opinion, do you believe that national borders are less relevant as a result of building international network relationships instead? (that it's more about where the networks are rather than which countries the markets are when internationalizing)

- Do you think that by having a digital value chain, that factors such as gaining legitimacy in networks are more important when internationalizing?
    - If yes/no, please explain why.
    - Does the process of gaining legitimacy affect the internationalization process? Please explain in what way.
    - In your professional opinion, has gaining legitimacy helped to facilitate your company's internationalization process? Please explain in what way.