Digital if possible, physical if needed: Value co-creation through digi-physical integration in born-digital service firms

A theoretical framework based on the Swedish telehealth industry

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Abstract

Title: Value co-creation through digi-physical integration for born-digital service firms: A theoretical framework based on the Swedish telehealth industry

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Purpose: The purpose of this paper is to explore how the actors in a telehealth ecosystem interact. A theoretical framework will uncover the touchpoints among the involved actors; namely, payers, customers, providers, and telehealth firms. Challenges that potentially hinder value co-creation will be reviewed.

Methods: This is a cross-sectional qualitative multi-case study with the epistemology of interpretivism. An abductive approach was employed for this multi-method qualitative study where in-depth interviews and focus groups were conducted to gather empirical data.

Theory: The main areas of the theoretical parts are telehealth, S-D logic, and value co-creation in a service paradigm. The service science perspectives of S-D logic by two of the main scholars in the field, Vargo and Lusch, is applied to review how the stakeholders in telehealth, influenced by Fürstenau and Auschra, interact and derive value in the context of the Swedish telehealth ecosystem.

Data: The data was obtained through in-depth interviews with seven professionals representing three stakeholder groups; two focus groups represent the fourth and final group. The recorded interviews and focus group discussions were transcribed, coded, and presented as empirical data.

Conclusion: The main findings of this thesis are three-fold. Firstly, four challenges were uncovered that can hinder value co-creation: 1) social, cultural, and behavioural attitudes, 2) external operant resources, 3) internal operant resources, and 4) regulations and payments. Secondly, a digi-physical integration strategy was presented as a solution that can bring all actors to a joint sphere of value co-creation. Lastly, this thesis proposes that the client-centric view of S-D logic should be revised since the service providers can influence the telehealth service. Also, not only customers are the beneficiary who can determine value, but all actors are.

Table of content

1. Introduction

This chapter will set the scene of the research paper and introduce the reader to the industry at hand. It will consist of five subchapters that explains the thesis background, problem formulation, purpose and research question, delimitation and thesis structure.

1.1. Background

The last decades have seen an incredible increase in digitization. In 2013, it was found that 98 percent of the world's total information had been digitized (Zuboff, 2019, p. 187). Along with heavy mobile usage that accounts for more than 50 percent of all internet traffic (Clement, 2020), a great increase in digital development has followed with the aim of enhancing the value proposition of products and services, expanding in scale, and accelerating innovation rate (J. W. Ross et al., 2019). Digital platforms that have moved away from a traditional pipeline-styled value-chain are found in the frontline of revenue-making digital firms (Alstyne et al., 2016). Lately, spurred off by the COVID-19 pandemic, even traditionally physical service offerings have made the transition towards digital – including healthcare services (Fera et al., 2020).

Traditional healthcare services have a history of being operationally costly, inefficient, and inaccessible (Hwang & Christensen, 2008). Simultaneously, the demand for healthcare has been on the increase due to the aging population (Augsburger, 2017). Promoters of digital healthcare services, noted as 'telehealth', argue that a transformation to digital healthcare would decrease costs as well as improve efficiency and accessibility (Jang-Jaccard et al., 2014). Thus, creating more valuable service offerings and enhancing the working conditions for the industry workforce (Agarwal et al., 2010). In Sweden, the use of telehealth services saw a 100 percent increase in usage in 2020 compared to 2019, closing the year of 2020 with 2,4 million digital visits nationwide. Telehealth services represented eleven percent out of all contacts that patients had with healthcare services in Sweden in 2020 (Kolmodin & Sundström, 2021). Parallel to the expansion of Swedish telehealth firms, an unexpected turn was also noted – they started opening physical receptions and clinics, thus moving away from their digital origin (Andersson, 2018;

Cederberg, 2020). This poses an interesting opportunity for illuminating this move from the digital to the physical world and its implications.

To fully encapsulate and explain the interactions between stakeholders in the telehealth industry, there is a need for a deep understanding of the value proposition of this service innovation and their value creation-processes. The theory of Service-Dominant (S-D) logic provides a rich framework that allows us to grasp the demands of the actors involved, the interactions that occur between them, the manner they include themselves in the services-for-service exchange and enabling all actors to co-create value (Vargo & Lusch, 2004). Since the Swedish remuneration model of healthcare services – regardless of them being private or public – is governmental (Holmström, 2020), the telehealth firms are also seen as one of the actors that has agency and that is included in the service exchange process. The application of S-D logic on the Swedish telehealth industry has the purpose to uncover the interactions between the stakeholders is an academic gap that requires more research. The discovery of the actors' individual demand and supply will provide insights to both telehealth firms and the public healthcare system of Sweden as it can direct them in the strategically optimal route to enhance their value proposition.

1.2. Problem formulation

As the increasing population of Sweden grows older, an increase in healthcare demand has been registered (Moberg & Fredriksson, 2020). The already scarce resources in the healthcare sectors struggle to increase its productivity to meet the increasing demand, both in terms of operant and operand resources (Melbi et al., 2018). A solution to this accelerating need can be seen in automating parts of the service provided as it would alleviate the resource squeeze and offer on-demand digital service (Standing et al., 2018). To digitalize healthcare, developing telehealth is thereby seen as a valid route; however, it poses structural and processual difficulties for all involved stakeholder groups. The stakeholders present in telehealth are the state (payer), the patient (customer), the healthcare professionals (provider), and the platform (telehealth) itself (Fürstenau & Auschra, 2016). Each stakeholder has their own agenda and incentives for financing, adopting, utilizing, or offering telehealth.

Healthcare is one of the most important pillars in any society. In Sweden, the majority of the healthcare services are financed by taxes and high-quality healthcare should be equally available to all its citizens (Socialstyrelsen, 2021). Nevertheless, telehealth services may lead to exclusions to some patients who have technological constraints or socioeconomic difficulties to engage in digital devices that telehealth service requires (Sanders et al., 2012). Taking a different perspective, the main mission for private businesses is to create value for their shareholders. At the same time, the private telehealth players are posing an economic burden for the state of Sweden to remunerate their service offering. Therefore, it is important that these new telehealth services do not only favor shareholders, but are beneficial for the involved actors. Sandberg et al. (2019) emphasize that finding the sweet spot between patient perspective, organizational perspective, and technological possibility is the key to succeed in this transformation within the healthcare industry. For that reason, it is purposeful to investigate the interaction between *all* stakeholder groups from a S-D logic perspective.

1.3. Purpose and research question

The purpose of this research is to examine the interaction and the touchpoints of value co-creation between stakeholders in the Swedish telehealth industry within the geographic region of Skåne. The aim is to develop a theoretical framework that enables telehealth to enhance their value proposition and make all stakeholders better off. This framework could potentially be transferable and applicable on other born-digital service firms with similar ecosystems. The value proposition and characteristics of the current telehealth service offering will be scrutinized to better understand their strength and challenges. Furthermore, the processual interaction between different stakeholder groups, their incentives, and their demands will be considered as it will allow us to gain a deeper understanding of how telehealth services can be beneficial for all actors. This thesis attempts to answer the main research question:

How do the actors in a telehealth ecosystem interact with each other from a service-dominant logic perspective?

1.4. Delimitation

The study will focus on the Swedish market and only include firms, or their business units, that operate in Sweden. Likewise, all sources of data – such as participants and reports – are either Swedish or with a strong connection to the Swedish market. The place of study was in the city of Malmö, region of Skåne, Sweden. Due to the decentralized healthcare structure in Sweden, the research will be developed based on Skåne-specific operations with the aims to be transferable and applicable to the remaining 20 regions in Sweden. The research was conducted between Q3 2020 and Q2 2021 and the primary data was collected in March and April 2021; the time constraint led to the choice of conducting a cross-sectional study. The decision to use the S-D logic as the main theory will shield the research study from other theories. Even though the thesis looks closely at the ins and outs of the healthcare sector, minimal medical jargon has been involved in the paper to keep the study focused on the business perspective on the research.

1.5. Thesis structure

The thesis is organized to guide the reader in a funnel-like structure. First, the literature review is presented that sets the foundation for the thesis. Former studies on telehealth that is focused on drivers and barriers are discussed and the relevant stakeholders are mapped out. This helped to form a good understanding of the current service offering of telehealth. The literature review is followed by an introduction of the report's choice of theory: value co-creation in S-D logic. The theory's historical development is explained and critical arguments made by opponents are also presented and taken into consideration. After the presentation of the literature review, the analytical strategy will be laid out in a two-fold structure. Firstly, the theoretical research design, research philosophy, and research delimitation will be discussed. Secondly, the method decisions of research approach, strategy, data collection, and coding strategy are laid out to finish off the chapter with the chosen method evaluation. With the research methods set in place, the thesis will present the findings based on the collected data. The findings section consists of four sub-chapters, each categorized using the analytical strategy described in the previous method chapter. The findings will produce a plethora of insights that will be concentrated in the subsequent chapter containing the discussion. In the beginning of the discussion chapter, the theoretical

framework that helps structuring and making sense of the findings will be presented. This chapter will end by answering the proposed research question. Lastly, the thesis will be wrapped up in the conclusion chapter where we will lay out our key findings, limitations, and propositisions to future research.

2. Case

After the presentation of the problem formulation and research question in the previous chapter, information will be presented in this following chapter to offer an understanding of the industry, market, and cases at scope. The chapter will be divided into the public and private healthcare sector.

2.1. The healthcare system in Sweden

In Sweden, the healthcare system is operated individually by 21 regions which can be seen as a decentralized system. However, it became problematic when a Swedish citizen needed healthcare service outside its registered region. Therefore, on 1 January 2014, a patient law (2014:821) was enforced which gives the right and possibility to patients to seek healthcare outside their registered regions. The Ministry of Social Affairs meant that this would only create a marginal effect since there would only be a limited number of citizens who seek healthcare outside their counties. Nevertheless, what they could not predict is the problem followed by the upcoming digital healthcare where patients can seek healthcare from online doctors without geographical limitation (Statens Offentliga Utredningar, 2019).

The first private digital healthcare platform, Min Doktor, was founded in 2013 in the region of Skåne; other actors, such as Kry, started their business in 2014. In 2015, the region of Jönköping decided that a digital medical consultation will be subsidized. These private platforms found their way in through signing contracts or partnerships with established physical private clinics and started to consult patients through digital channels in order to receive ‘foreign region remuneration’ [utomlänsersättning] In 2016, the initial amount of reimbursement was 2200 SEK per visit (Statens Offentliga Utredningar, 2019).

However, the private digital healthcare situation created an issue for the regions which is the enormous invoice that they have to pay for these private telehealth platforms. The Swedish Association of Local Authorities and Regions (SALAR) recommends that regions should subsidize each foreign region's digital primary care service. As of 2021, the current suggested amount of subsidy is: 500 SEK for a digital doctor appointment; 425 SEK for a digital appointment with a psychologist or welfare officer; and 275 SEK for a digital appointment with other authorized healthcare staff. The subsidies already

include the patient's fee and caregiver's costs for other related services such as lab tests (Sveriges Kommuner och Landsting, 2019).

It has been reported that 70 percent of the Swedish telehealth users were below 30 years old and 60 percent were female. The foremost benefits of using telehealth services were found to be high accessibility, efficiency, as well as high patient privacy (Gabrielsson-Järhult et al., 2019). There have been public discussions in Sweden whether telehealth firms create a need rather than meeting a demand (Järhult, 2019). It was recently discovered that telehealth users are more often in contact with digital healthcare compared to patients in public primary healthcare. It was further concluded that telehealth has the potential to relieve the public primary healthcare from a heavy demand but can also lead to increased and unnecessary healthcare needs (Ellegård & Kjellsson, 2019). A friction between Swedish telehealth firms and the Swedish public healthcare sector is the stigma that publicly employed professionals attach to telehealth professionals. This has led to a divide between the two professional groups and there have been episodes where telehealth professionals do not openly share that their employer is digital out of fear for being looked down upon by their physical clinician counterparts. The main reason for this disapprovement is thought to stem from misunderstandings and misconceptions (Cederberg, 2019).

2.1.1. Region Skåne

The media and public sector have criticized some of the digital healthcare firms' marketing campaigns for being aggressive and encouraging unnecessary healthcare consumption which is costly for the society (Statens Offentliga Utredningar, 2019). In June 2020, Region Skåne launched its own digital healthcare platform, 'The Primary Healthcare Skåne Online' [Primärvården Skåne Online]. Patients can chat with nurses from 08:00 to 17:00 on weekdays and 10:00 to 15:00 on weekends (Region Skåne, n.d.). Please see Appendix A for a brief overview of Region Skåne's financial data.

2.2. Private telehealth industry

There are currently several telehealth firms in Sweden and two of the largest organizations, Min Doktor and Kry, have recently complemented their online service offerings with physical facilities. While there has been controversies in the media regarding telehealth firms' business models and service quality

(Järhult, 2019), the two aforementioned firms at scope have grown in terms of employees, registered patients, and usage (Kolmodin & Sundström, 2021). We have chosen to study Kry and Min Doktor since they are the Swedish telehealth market leaders, they are both born-digital telehealth that now are entering the offline world, and comparing and contrasting the two can help to gain a better understanding of the industry as a whole.

2.2.1 Min Doktor

Min Doktor was founded by Magnus Nyhlén, MD, in Skåne in 2013. It was the first private telehealth player in the Swedish market. Nyhlén saw that many women who suffered from urinary tract infections had to visit a physical healthcare clinic, even though the patients often have good awareness of their symptoms and the antibiotics medicine they need. In Nyhlén's opinion, a face-to-face doctor appointment is unnecessary in this situation and can be replaced by a digital meeting instead. This is also the story behind the founding of the company (Kangro & Nyhlén, 2017; Persson, 2021).

The current CEO of Min Doktor is Jonas Vig and today the company has both digital and physical facilities. When it comes to ownership structure, 49 percent of the company is owned by Apotek Hjärtat (owned by ICA group), 19 percent by EQT Ventures, and the rest is divided by the founder, business investor angels, and institutional investors. The company operates only in Sweden. In 2019, the company had an increase in revenue of 183 million SEK. The operating profit was -145 million SEK, and the profit of the year was -152 million SEK (MD International AB, 2019). Since the beginning, Min Doktor has handled over one million digital patient cases (Min Doktor, n.d.-a). Please see Appendix B for a brief overview of Min Doktor's financial data.

From 2016 to 2019, Min Doktor had an agreement with a physical private healthcare provider in Jönköping that allowed them to take all Swedish patients digitally, regardless of their regional habituation. They succeeded to transform their healthcare consultation from privately financed by patients themselves, to be financed by the public's 'foreign region remuneration' [utomlänsersättning]. In 2019, the company bought a healthcare center in Nyköping, in the Södermanland region, and patients are now registered at Min Doktor through Region Södermanland (Statens Offentliga Utredningar, 2019).

Today, Min Doktor offers healthcare consultation with doctors, nurses, psychologists, physiotherapists, and midwives mainly through asynchronous chat on their own-developed platform. However, video or telephone calls are used when it is needed. The consultation always begins with the patient answering specific questions regarding their symptoms. It follows that Min Doktor sorting patients to the right level of care: self-care, physical care, or continued digital care (Statens Offentliga Utredningar, 2019). To ensure the quality of the service, every 20th patient case will be peer-reviewed by doctors (Min Doktor, n.d.-b). In addition, Min Doktor now has 22 physical healthcare and vaccination receptions that are operated by nurses. These receptions are located either in Apotek Hjärta or ICA supermarket, all positioned within the Swedsih borders (Min Doktor, n.d.-c).

2.2.2. Kry

Kry was founded by entrepreneurs Joachim Hedenius, Johannes Schildt, Josefin Landgård and Fredrik Jung Abbou in Stockholm 2014. They were careful to utilize recommendations by medical professionals to deliver novel medical processes. As a leading player in telehealth, the company has now expanded to France, UK, Germany, and Norway. The founding team had the business idea of offering video healthcare consultations with doctors, nurses, and psychologists. The original vision was to be a digital alternative to the physical primary healthcare clinics (Goldberg, 2016).

Kry has had an enormous growth in their revenue which has been increasing every year since 2016. In 2019, their revenue reached 3,6 million SEK. However, the profit does not show the same development which went from -2,5 million SEK in 2018 to -3,5 million SEK in 2019 (KRY International AB, 2020). Please see Appendix C for a brief overview of Kry's financial data.

Other than the digital healthcare platform, Kry is also operating 20 physical healthcare clinics in 6 different regions in Sweden. The current CEO in Sweden, together with over 400 employees and 1 300 healthcare service providers, is working on improving the accessibility in primary healthcare by combining digital and physical facilities (Bengtsson, 2021; Beltrame-Linné, 2021). The company uses its own journal system, and all information is registered in the acquired healthcare clinic in Nyköping, the region of Södermanland, from where they operate their digital healthcare. In 2018, Kry opened a

physical clinic in the city of Lund and became one of the accredited players in the region of Skåne (Statens Offentliga Utredningar, 2019).

3. Literature review

To be able to answer the research question proposed, an understanding of the previous research in the field is needed. The literature review will be separated in two main sections. First, relevant research on telehealth will be laid out and provide this paper with a solid foundation. Second, our choice of theory will be presented as well as its development, advantages, and criticism.

3.1. Telehealth

In terms of technologically enabled healthcare, the first emerging word 'telemedicine' has historically had different definitions in the literature, such as 1) medical, 2) technological, 3) spatial, and 4) beneficial (Sood et al., 2007). To differentiate, other terms have emerged, such as Health IT/HIT, mHealth/m-Health, and telehealth. E-health/EHealth has been used as an umbrella term that includes all types of digital enabled healthcare, both physical and psychiatric (Agarwal et al., 2010; Fatehi & Wootton, 2012). While many of these terms have been used interchangeably, 'telehealth' is defined as being "a subset of e-health and is the use of telecommunications technology in health care delivery, information, and education" (Gajarawala & Pelkowski, 2020, p. 218). It enables geographically separated patients and providers to connect and exchange information. It is especially valuable for remote residents, high-risk groups, and aging populations with a particular focus on accessibility, quality, and costs (WHO, 2016). As the global pandemic caused by COVID-19 paralyzed the world, telehealth has seen a pronounced increase in usage, measuring 8-10 times more visits in the first half of 2020 compared to the same period in 2019 (Custer, 2020).

Following the themes found in the published telehealth research by Standing et al. (2018), the literature on telehealth will be covered in terms of drivers and barriers. Online tools such as Web of Science, EBSCOhost Web [Business Source Complete] and Google Scholar have been used. Peer reviewed searches were first done on generic terms such as "telehealth", "telehealth AND driver*", "telehealth AND barrier*" and sorted first relevance and times cited. After going through the titles of the first 20 hits, the most appropriate ones were given a read of the abstract. If the abstract showed evidence of

usefulness the whole article was read. Lastly, the references of selected articles were examined and those titles that looked interesting had their abstracts read as well.

3.1.1. Drivers of telehealth

Economic revenue, efficiency, and cost-savings

One recurring argument that favors telehealth expansion is the cost reduction, especially to rural inhabitants that struggle to meet up at a healthcare facility (Jang-Jaccard et al., 2014). Now, since also the urban population adopts telehealth, it has the potential to increase competition in the health care sector, change health plan networks, and drive down costs, all of which would benefit the patients (Custer, 2020). The healthcare firms that employ a telehealth strategy save direct costs by decreased transportation and indirect costs by lost productivity, especially in emergency situations (Natafgi et al., 2017). In addition, the results after interviewing patients that had been 'visited' by video call showed evidence that customers seemed to enjoy increased efficiency, convenience, and privacy (Powell et al., 2017).

Value creation for stakeholders in telehealth settings

Fürstenau and Auschra (2016) found four different stakeholder groups involved in telehealth: service providers, patients, payers, and platform providers. Some recent scholars have attempted to uncover the possibility of added value for all beneficiaries, both direct and indirect actors. For instance, taking a S-D logic approach, both Gadeikienė et al. (2021) found that the patients were the greatest beneficiaries, while Go Jefferies et al. (2021) theorized regarding who the *actual* beneficiary was if not all were equally benefited. The latter went even further and proposed a move away from binary active vs inactive participation and instead focus on 'invisible citizens' (i.e., disadvantaged actors without the choice of being active or inactive in the service exchange process) to enable and sustain value creation and service innovation (Go Jefferies et al., 2021). In an earlier paper, Go Jefferies et al. (2019) take a similar stance and look at how institutional arrangements in the telehealth sector favors some actors – platform providers – disproportionally over others – patients – and thereby hinder value creation to reach full capacity for all interconnected actors, regardless them being visible or not. They also found that misalignment of customer-provider relationships can potentially lead to service improvement as conflicts question assumptions that were taken for granted (Go Jefferies et al., 2019). In their systematic review,

J. Ross et al. (2016) opposed the peripheral actor focus and pointed instead to previous research and drew the conclusion of the importance of engagement of key stakeholders and the designation of 'champions' (i.e., early adopters that are heavy users and act as promoters), especially for the implementation process.

Hong et al. (2019) examine factors that affect patients' intention to continue using online healthcare services and the result shows a significant association between intention and frequency in using telehealth services and patients' demographic characteristics such as gender, age, educational level, health condition (e.g., chronic diseases). Furthermore, different forms of service attract different users. Therefore, identifying the influential factors can help service providers to navigate and focus on different services and their target users. Based on this, Hong et al. (2019) suggest that the strategy of a telehealth organization should focus more on personalization, with special focus on targeted groups. By adopting this approach, they argue that organizations can build an environment that fits targeted groups' perception of risk, benefit, and trust in order to affect continued adoption intention positively.

3.1.2. Barriers of telehealth

Problem of extracting value – customers (patients)

The literature has uncovered several different barriers for telehealth to overcome. Despite its recognition as telehealth being useful, face-to-face patient care is still the dominant practice. In their extensive literature review on telehealth research, Standing et al. (2018) found several reasons for this being the case, many of which are grounded in difficulties to extract value. They stem from lack of user knowledge and skills, insufficient end-user engagement, and company-centric views on innovation and implementation. On a similar note, Sanders et al. (2012) found that elderly patients – a particular group that traditionally has been seen as beneficiary of telehealth use – struggled to adapt to the new technology. The motivations behind the resistance by the patients was categorized in three groupings that emphasizes social, cultural, and behavioral attitudes and includes 1) requirements for technical competence, 2) threats of identity, independence and mistrust in digital service quality, and 3) expectations of disruption to healthcare services. These findings resonate with several other findings that conclude that the health care quality is correlated with the receiving end's familiarity with technology (Jang-Jaccard et al., 2014), and general cultural appropriation (Agarwal et al., 2010).

Problem of extracting value – service providers (doctors and nurses)

Even though telehealth has received much appraise for its cost- and time savings mechanism as well as the opportunities for efficient scale, the evidence for these claims have been questioned (Jang-Jaccard et al., 2014). There have been discoveries of costly implementation and back-end operations to introduce and manage a telehealth branch (J. Ross et al., 2016). Without enough active users, telehealth firms struggle to keep up sustained profitability (Standing et al., 2018). Service providers have, like the customers, showed some discomfort with providing healthcare through technological mediators, especially emphasizing the perceived risk of losing staff-patient relations and being time consuming to earn the knowledge (Agarwal et al., 2010). Due to the heterogeneity of care providers, some researchers have emphasized the importance of understanding telehealth service providers and their motivations behind telehealth adoption, their technological usage, and their technological capabilities. This would enable determination of proper performance measures, costs, and service quality (Rotenstein & Friedman, 2020).

Regulations and lack of openness

Despite possibilities to improve efficiency, quality, and decrease costs, telehealth adoption is not widespread (Gajarawala & Pelkowski, 2020). Working from the logic of network effect, mostly based on the foundational work of Gawer and Cusumano (2014), Fürstenau with colleagues have published several papers that discusses two great barriers for telehealth platforms: governmental regulations (Fürstenau, Auschra, Gersch, et al., 2018; Fürstenau, Auschra, Klein, et al., 2018) and lack of digital openness (Fürstenau et al., 2017; Fürstenau & Auschra, 2016). They also explore the paradoxical relationship between the two barriers (Witte et al., 2020). One out of four important areas of platform management regards engagement with both the platform's ecosystem and the wider environment (i.e., indirect stakeholders such as other platforms or other whole industries). Too strict health care policies, market regulations, and laws are thus potential threats for the development of a telehealth platform (Fürstenau, Auschra, Klein, et al., 2018). Laws related to data protection, privacy, and IT security hinder flow of patient information and its value to reach its full potential; management of the regulatory environment is therefore seen as necessary to ensure profitable platform implementation and scale (Fürstenau, Auschra, Gersch, et al., 2018). Attributing three platform-based layers of openness, Fürstenau and Auschra (2016) point to the importance of openness of code, content, and infrastructure to ensure

successful platform implementation and argue that technical and linguistic openness of digital health platforms would profit the entire health system. The degree of platform openness relates to its success, positive network effects, and is inversely correlated with the degree of control that regulators impose on digital platforms which slows the network effects down (Fürstenau & Auschra, 2016). Service users can be both data producers and consumers at the same time, noted as "data prosumers" (Witte et al., 2020, p. 5), but data producers see a tension between value creation and value appropriation. Value of data is created via big data analysis, but there is no direct and quantifiable value appropriation for the user that produces it (Witte et al., 2020).

3.2. Value creation in a service paradigm

The neoclassical economic tradition of separating products from services dates back to the days of Adam Smith. Ever since, the goods-dominant (G-D) logic has been the prevalent line of thought throughout business management theory and practice (Vargo & Morgan, 2005). The term 'dominant logic' follows the definition of being "a common way of thinking about strategy across different businesses" (Barney & Hesterly, 2019, p. 262), as goods were seen to inhere value based on output and price, created by producers and exchanged to consumers (Vargo & Lusch, 2004b). As labor specialization has increased, the 21st century has seen the rapid development of the 'service economy' (Buera & Kaboski, 2012). Through increased information access, transparency, consumer-to-firm communication, and consumer-to-consumer dialogues, the customers of today take an interactive role in the value process (Prahalad & Ramaswamy, 2004). This has led to the emergence of value co-creation that now has gained a strong foothold in the management literature. As the customer is engaged in practices, value is seen as being co-created between the product or service provider and receiver through a process that is dynamic, interactive, non-linear, and often unconscious. The value of a product is not realized until the consumer engages with it (Payne et al., 2008).

3.2.1. Value co-creation

First introduced by Prahalad and Ramaswamy (2000), advocates of the value co-creation perspective emphasize that suppliers and consumers no longer stand on separate sides; rather, they interact with each

other and derive value through experience, interaction, and contextual resource application. To a large extent, the value is based on operant resources, that is noted as primarily being actors' knowledge and skills, as opposed to operand resources, such as tangible assets that is the main source of value in G-D logic (Vargo et al., 2008). The configurations of actors (i.e., people, technology, and organizations) engaging in value co-creation are noted as service systems that are the study of service science (Maglio & Spohrer, 2008). In their systematic literature review on value co-creation, Galvagno and Dalli (2014) lay out four value co-creation research themes where value is co-created through customer experience and competence (Prahalad and Ramaswamy, 2000, 2004), S-D logic (Payne et al., 2008; Vargo & Lusch 2004b), service innovation (Möller et al., 2008), and development of service science (Grönroos, 2008). This thesis will take on a S-D logic approach of value co-creation to best be able to capture how Swedish telehealth firms and their beneficiaries derive value in collaboration with each other (Vargo & Lusch 2004b). Important to note is the application of Grönroos and Voima's (2013, p. 141) model of "value creation sphere" where the central overlapping sphere symbolizes the answer of how all actors co-create value.

3.2.2. Service-dominant logic

To establish a stronghold of the ideas of value co-creation in the S-D logic perspective, Vargo and Lusch (2004a) attempted to break free from the deep roots of G-D logic by introducing a new paradigm that abandons the binary and linear notion of goods being the provider of value. Initially based on eight Foundational Premises (FPs) they argued that service (in singular) was the true bearer of perceived value; goods were merely the vehicle of the value of which the service was provided to the actors (Vargo & Lusch, 2004a).

As the S-D logic gained presence, the original eight FPs from 2004a were subsequently updated to better accompany and progress the lexicon of the new logic (Lusch & Vargo, 2006). More alterations followed as well as two additional FPs (Vargo & Lusch, 2008). As the FPs were further adjusted four axioms were added to supplement the ten FPs (Lusch & Vargo, 2014). As a result of the theoretical problematization of the terms 'B2B' and 'B2C' and the suggested exchange to a more generic 'A2A' (actor-to-actor) perspective (Vargo & Lusch, 2011), the latest update included further linguistic modifications of the current FPs, in addition to a final eleventh FP that also took the place as a fifth axiom (Vargo & Lusch,

2016). In this thesis the focus is on the latest modification of the eleven FPs presented by Vargo and Lusch (2016). Please see Appendix D for a simplified table of the evolution of the FPs that the S-D logic is built upon.

Although the S-D logic fundamentally is based on the FPs and axioms, it has been found in the literature that S-D researchers mostly disregard many of the FPs – at best they implicitly imply their presence. It was found that FP6/axiom2, "Value is co-created by multiple actors, always including the beneficiary" (Vargo & Lusch, 2016, p. 8), had received more than twice the attention compared to its second and third most mentioned premises and is thus being concluded as the driver of S-D logic (Ehrenthal et al., 2021). While Vargo and Lusch (2004a, 2008, 2016) are recognized as the 'founding fathers' of S-D logic (Kryvinska et al., 2013), the paradigm has been developed and applied to several different research areas, including, but not exclusively, industrial service, service quality, and value creation (Edvardsson & Enquist, 2011), service, relationships, and networks (Gummesson, 2008), the development of the micro-level view of 'service logic' (Grönroos, 2006), outcome-based contract (Ng et al., 2009), and service network perspective (named 'service-dominant networks', SDN) (Löbler, 2013). The field of marketing has seen the most of S-D logic application, but it has also influenced the schools of management, innovation, and technology (Ehrenthal et al., 2021), as well as information systems, education, and health, among others (Vargo et al., 2020).

A recurring topic in the S-D logic literature is the idea of 'value-in-use' adopted by Vargo & Lusch (2004a). Based on the principles of FP6/axiom2 (Vargo & Lusch, 2016), value-in-use is embraced in S-D logic and "posits that only the customer can determine value; this occurs as the customer uses the offerings of the service provider" (Lusch & Vargo, 2006, p. 49). It is an active move from the principle of 'value-in-exchange' that signifies that value does not exist as a static singularity, but rather emerges through customer actions in dynamic contexts (Grönroos, 2017). At a micro-level perspective, the Grönroos-Voima Value Model presents how the customer engages in the consumption and value creation process while the firm engages in a service-provider process; when they invite each other to a 'joint sphere', a platform of co-creation, the processes are combined, value is co-created, and a process of interaction, collaboration, and dialogue occurs. Importantly, the roles and goals of the customer and the firm are fluid and can change (Grönroos, 2017; Grönroos & Voima, 2013). Several scholarly

modifications of value-in-use have been found in the literature that relates to S-D logic, including 'value-in-context' (Chandler & Vargo, 2011), 'value-in-social-context' (Edvardsson et al., 2011), and 'value-in-underuse' (Campbell et al., 2013).

Möller et al. (2008) point out that different competences from client and service provider is needed for different service innovation. A provider-driven innovation represents that functionality of service providers' offerings exceed the clients' ability to use it. The situation that may occur is that both business partners and clients face obstacles to accept the new service offering which may lead to resistance of collaboration from these actors. Value creation can only be guaranteed when there is strategic congruence between both parties. Success in this case lies on the assistance that service providers give to clients in co-creating value, as well as providers' market sensing capabilities (Möller et al., 2008).

3.2.3. Criticism towards S-D logic

Despite the paradigm status of the S-D logic and its ideas, it is not without critique. With their conceptual and opinionated papers, the O'Shaughnessys argue that the S-D logic has a technological standpoint with the ambition of 'knowing how' that contrasts scientific research and its goals of 'knowing that'. They claim that the S-D logic should not aim to replace all other perspectives in marketing research since that would discourage different viewpoints and thus weaken theory confidence. Criticism is also pointed to the eight foundational premises/axioms that are said to not be self-evident and only distinguish operand from operant resources (O'Shaughnessy & O'Shaughnessy, 2009, 2011). Campbell et al. (2013) also discuss the potential shortcomings of viewing a perspective as dominant; they question the S-D logic notion of operant resources being superior to operand resources. Instead, they argue, the resources should be seen as an entanglement of resources. Wang et al. (2019) urges for a zoomed-in S-D logic application as the broad perspective might miss important processual activities. Also Plé and Cáceres (2010) explores the micro-level view of S-D logic. By looking at accidental and intentional misuse of resources they argue that the dominant concepts of value co-creation and value-in-use are insufficient and propose the additional notion of value co-destruction. As already mentioned, Grönroos (2017) agrees with the need of a micro-level view and discusses the possible pitfalls of a macro or meso S-D logic view, and proposes therefore a slightly different 'service logic' (SL) theory; also, being a strong advocate for value-in-use, he claims that value-in-use is the only valid measurement to reach theoretical rigour.

4. Analytical strategy

The following chapter is two-fold and will first explain the theoretical research stances in terms of design, philosophy, and delimitation. Secondly, the research methods will be demonstrated by describing the research approach, research strategy, data collection methods, and evaluation methods used to ensure quality. As a general framework, the research onion presented by Saunders et al. (2016, p. 124) will be used as a reference. Throughout the whole chapter reflexivity will be addressed.

4.1. Theory

4.1.1. Research design

The telehealth industry is novel and in continuous development. This study has an exploratory purpose due to the relational focus and the emphasis on the bilateral exchange that occurs between each stakeholder. The many different stakeholder touchpoints make it an interesting multiple case study where we attempt to gain an understanding of telehealth, uncover how value is created, and explain the complex relationships between the different actors and agencies. The locus of the thesis is further to understand how actors in a telehealth ecosystem interact with each other, where an exploratory purpose allows for an open-ended confrontation of the presented research question (Saunders et al., 2016).

There were various types of material used in the literature review process which mainly included peer-reviewed articles, books, and scientific studies. Materials were obtained from Copenhagen Business School Libsearch, Web of Science, EBSCOhost Web [Business Source Complete], and Google Scholar. In the literature review of this paper, there were two main focuses which were the telehealth industry as well as value co-creation understood by S-D logic.

To gain a deep understanding of the telehealth industry, literature about the definition of telehealth, as well as the drivers and barriers of this service innovation was reviewed. After that, the review of literature from Fürstenau and Auschra (2016) creates a general picture of different stakeholders (healthcare service providers, patients, payers, and platform providers) who are involved in the telehealth industry in the manner of value creation.

Regarding value co-creation of service, there are important scholars who have contributed to this specific field with different perspectives. In this study, the S-D logic perspective by one of the main scholars, Vargo and Lusch (2004a, 2008, 2016), is applied to capture how the aforementioned stakeholders mentioned by Fürstenau and Auschra (2016) derive value in the context of the Swedish telehealth industry.

4.1.2. Research philosophy

The study will take on a subjective and relativistic ontological stance that assumes that the world is constructed by social actions; participants in the research are attached to their beliefs through language and culture and organizations are treated as actors with agency (Guba & Lincoln, 1994). It is our job as researchers to unveil and explain their values, behaviours, and attitudes through means of language (Jacquette, 2002). We, the researchers, are also bound by socially constructed values and realize therefore that a reflexive axiology is unavoidable and instead needs to be utilized to develop the study. Our perceptions of the reality that we uncover is true for us, and even though we aim to reach transferability we accept that successors might come to conclusions different from ours (Arneson, 2009). Following the subjective line of thought the research will take an interpretivist epistemological point of view, this will allow extracting data from subjective interpretations as the research develops. Furthermore, since individual interpretations from the sampled study participants are sought-after data, it enables us to better understand the social formations between the stakeholder groups and thereby also gain a deeper knowledge of how value is created at each service exchange. We also acknowledge that each participant has her own subjective interpretation of the social world and context (Bryman, 2012; Saunders et al., 2016).

4.1.3. Research delimitation

During the theoretical design, some delimiting choices were taken before the research was conducted. Since the cases included in the research are based on their Swedish market operations, a geographical delimitation to Sweden is inevitable. All participants also needed to fulfil the criteria of being resident in Sweden. Two telehealth firms with the criteria of being born-digital and recently venturing offline to open physical service centres were chosen. Thus, we have excluded telehealth firms that only operate

online and healthcare firms that started by a physical clinic and later entered the online market. In comparison, a traditional and public healthcare service was chosen based on proximity; hence, the choice of using participants involved Region Skåne might not uncover knowledge relevant to the other regions in Sweden. The focus groups were a mix of telehealth users and non-users, where no users below the age of 18 was used due to their difficulty with online identification (BankID requires the users to be at least 18 years old) and no one above 50 (due to restrictions imposed during the research production it was seen as a danger for any potential participants to meet up). S-D Logic is chosen as the main theory which therefore creates a limited framework with little room for other theories.

4.2. Methods

4.2.1. Research approach

In terms of how to approach the presented research question, the research was decided to take an abductive approach. Considering the exploratory purpose and the aim of the research, its focus of value creation in telehealth firms, and the choice of S-D logic as main theory, the abductive approach is deemed to aid us in extracting maximum value from our collected data. It will also complement the already given philosophical positions and enhance the understanding of the data collected, as an abductive approach allows us to move back and forth between theory and data to enhance the findings. During the research, we will attempt to enter the field of telehealth with knowledge as deep and broad as we can. It will eliminate any constraints that a solely inductive or deductive approach otherwise would entail. To ensure that the move between theory and data is constant we will continuously revisit the phenomenon, defamiliarize the known world, and alternative data casing by attempting to understand data in as many ways as possible (Timmermans & Tavory, 2012).

During the literature review, the interpretivist methodology of hermeneutics was employed. Focus is here on cultural artifacts such as texts, symbols, stories, and images. As the research advanced, we also got in contact with several reports and other material with secondary data characteristics; these were also interpreted through a hermeneutic point of view. As our knowledge of the topic magnified, the initially sought-after terminology was exchanged to a set of expressions more appropriate to the development of our thesis. For instance, the original use of the ‘drivers’ and ‘barriers’ of telehealth was after the data

coding exchanged to ‘characteristics’ and ‘challenges’ of telehealth. The empirical data sources were treated somewhat differently. For the in-depth interviews, we took a phenomenological approach, where the participants’ knowledge and recollection of their own interpretations was seen as the most valuable data. In the focus groups, we were also interested in the symbolic interaction between the members of each group, their discussions, agreements and disagreements, experiences, and any possible conclusion the group lands in (Saunders et al., 2016).

The collection of empirical data from both in-depth interviews and focus groups enabled us to gather data from a range of different actors and settings that enable us to reach triangulation. Triangulation will ensure that chance association and systematic biases are reduced, as well as reducing any limitations in either of the two data collection methods (Maxwell, 2013). This type of multi-method qualitative study further enhances data findings as it allows us to cross-check different opinions, experiences, and knowledge between the research participants and develop a deeper interpretation of their meanings (Bryman, 2012).

4.2.2. Research strategy

The research paper takes a multi-case study research strategy. The reason for this choice lies in the complexity of the market structure; participants from one sole telehealth firm would only deliver insights from their specific perspective. To fully understand the industry and the mechanics of telehealth firms we opted for broader, more transferrable, knowledge that was being built upon the participant insights from all four stakeholder groups. As we proceeded with our data collection, the payer stakeholder group, Region Skåne, emerged as doubling as a service provider. It gave us a third insight in how traditional healthcare services function, and we took advantage of the situation and used this third actor and the intel gathered to juxtapose against the interpretations found in two initially chosen telehealth firms. Considering that the research will study the current strategy and interaction between the stakeholder groups of Swedish telehealth firms, the time-horizon for the research is cross-sectional, also termed as a “snapshot” time horizon (Saunders et al., 2016, p. 200). If nothing else is stated, the paper takes place during the time of Q3 2020 – Q2 2021.

After the primary data has been collected through in-depth interviews and focus groups, the recorded conversations were transcribed. The transcriptions were facilitated using the software HappyScribe.com. The transcriptions were then analysed using the NVivo software. Given our epistemological stance, already while transcribing the first in-depth interview, we thought about patterns, contradictions, and useful insights that could be brought to the next stage of data collection (i.e., focus groups). The analysis was conducted using the Gioia-method to categorize the insights based on our aim to capture concepts relevant for the participants and combine it with the level of scientific theorizing about their experience. Although mainly used for inductive research, the process is also aligned with the abductive approach of our choice (Gioia et al., 2012). Three ground assumptions are needed to use the Gioia-method:

- The world is subjective and open for interpretation.
- The participants are knowledgeable agents that know what they are trying to do and can orally explain their thoughts, intentions, and actions.
- The researchers are knowledgeable and can figure out patterns in data, find concepts and relationships, and formulate these concepts in theoretical terms.

Using NVivo and its codes function, first order concepts were found where we focused on the participants' own words, they were then scrutinized with the purpose of finding similarities in the discovered concepts. These led to second order themes where we concentrated the statements into our own, academic, language. Lastly, the themes unveiled aggregated dimensions that became the foundation for the full primary data findings. Importantly though, the social situations were also taken into account in the focus groups to find group dynamics and contextual data (Gioia et al., 2012). For a full description of our data coding process, please see Appendix K.

4.2.3. Data collection: In-depth interviews

The literature review showed evidence of telehealth being a complex sector, with the four main stakeholder groups of payers, customers, service providers, and telehealth. We conducted semi-structured interviews with individuals from the three stakeholder groups of payers, service providers, and telehealth firms. The aim is to gain deeper insights in how telehealth services practically operate, their potential challenges, how they interact with each other and with physical healthcare services, and hearing their

view of the service receiver's role in the service exchange process. Semi-structured interviews are seen as a particularly useful data collection tool when specific and complicated issues need to be explained as the close relationship of the interviewer-interviewee adds credibility (i.e., internal validity) of the data by reducing response biases. The interviewer can direct the conversation and keep the interviewee on a straight path of desirable subjects, while simultaneously allowing both sides to ask for clarifications or discuss spontaneous topics that were unprepared but found interesting to the case. One interviewer therefore focused on the prepared questions, while the other focused on potential follow-up questions. Each interview lasted approximately one hour, or until information was saturated. All interviewees were made aware of this structure prior to the interviews (Saunders et al., 2016).

Preparations

To facilitate a rather straight path in the interviews, we prepared two interview guides. They were relatively similar, with the exception of a few questions that needed slight alterations depending on the interviewee belonging to the group of payers or service providers. The interview guides were developed using Kvale's (2007) method. First, we created themes that we wanted the participant to discuss, secondly, we created specific questions that nudged the interviewee towards the desired themes. The interview commenced with a broad opening question where the respondent could introduce herself and her position at the firm at scope. Thereafter, four key topic themes were covered: digital healthcare as service, the relationship between firms in the industry, opportunities within digital healthcare, and challenges within digital healthcare. Lastly, a closing theme was discussed, namely the future of digital healthcare, before we gave room for additional questions or comments that the interviewee might have had.

Since both authors of this paper and all interview participants are Swedish, both the interview guide and the interview itself were in Swedish. This was partly for the convenience of the interviewees. As one participant explained prior to the interview, some Swedish terms within the healthcare sector are simply non-existing in the english vocabulary (Head of Program - eHealth and Digitalization, Region Skåne). Furthermore, it has been found that interviews that are conducted in the mother tongue of the interviewee can reduce any sense of insecurity that the interviewee otherwise might feel towards the interviewer (Okada & Greer, 2013). Please see Appendix E for the semi-structured interview guides. When the first

draft of the interview guides were created, we did a pilot interview with a retired CTO of Region Skåne. He was kind enough to join for a lengthy discussion regarding the choices of questions, wordings, and approach of the interview guides. He also gave us some valuable sector specific insights and explanations that were used in our preparations and in the interviews, as well as giving us the contact information to his former colleagues that are still active which he recommended us to talk to.

Sampling and operation

The sampling of the interview participant was made through a combination of convenience purposeful sampling and snowballing. For the stakeholder group of payers, we started by reaching out to the retired CTO of Region Skåne by mail. As he agreed to get in contact with us, we asked him to direct us to some relevant individuals within Region Skåne. As he still has many contacts in the industry in general and in Region Skåne in particular, he pointed us towards two potential participants that currently have managing positions in the digitalisation department of Region Skåne's Primary Care. We asked them for further potential interview participants, which led to a third employee at Region Skåne. After the third interview we deemed the topics being saturated, as we could see a pattern of recurring answers.

To sample the stakeholder group of the service provider, we used digital communication tools. Going through their website pages and their official LinkedIn profiles that list their respective employees, we ranked the most potentially relevant positions. The top 10 in each list of Min Doktor and Kry were contacted through mail or instant message on LinkedIn. Out of the ten contacted, two people responded from Min Doktor, and one person from Kry. (The low number of respondents from Kry made us contact the communication manager that explained that they at this point do not give permission to talk to outsiders about their operations). Except from the pilot interview, we interviewed *n:* 7 people where discussions ranged from 43 minutes to 75 minutes in length. Due to constraints in time, budget, and current COVID restrictions, all interviews were conducted through an online video conference tool, Microsoft Teams. Prior to all interviews the participants were all asked to give their oral permission for us to record the video conversation (all accepted). Please see Appendix F for a full presentation of the professional interview that participated in the individual in-depth interviews.

Limitations

While the interviewer-interviewee relationship is a great strength of deep semi-structured interviews, it is also a potential threat for the data collection process. Two aspects are discussed by Roller and Lavrakas (2015). Firstly, the role of the interviewer can skew the data by her personal characteristics, personal values and beliefs, as well as other factors such as stereotyping, misinterpreting, or presuming the interviewee's standpoints based on appearance. Secondly, the broader social setting can affect the data by certain 'power dynamics' or 'one-way dialogues'; both of which make the interviewer control the interview, making the interviewee feel insecure. For the former, the risk is hoped to be overcome by having both researchers being actively engaged in all interviews. For the latter, the relatively loose interview structure anchors already in the beginning of the interview that we encouraged the interviewee to view the interview as a discussion consisting of a two-way dialogue.

The sampling method can also be subject to skewing the data. The snowball effect can create echo-chambers where interviewee #1 simply suggest we talk to a contact that has similar opinions and standpoints. The technology facilitated contact-strategy, using LinkedIn or email, can also be inadequate as it omits individuals that do not have a LinkedIn account or have failed to list their email on the relevant website page. The rather low sample size can also pose a problem considering the complex subject at hand. Regardless of these potential pitfalls, the combination of snowballing and technological contact is deemed to ensure spread of participants; the last interviews in both the stakeholder groups, payers and service providers showed indeed signs of saturation. More interviews could be desired, especially in the group of service providers, however, given one of the firm's unwillingness to discuss matters with outsiders we believe that the amount of data collected still amounts to a solid foundation to build an analysis, discussion, and conclusion upon.

4.2.4. Data collection: Focus groups

In addition to the in-depth semi-structured interviews with chosen members from the stakeholders groups, payers, service providers, and telehealth firms, we conducted focus groups to understand the role and motivation of customers in telehealth. Saunders et al. (2016) differentiate group interviews from focus groups, as the former being focused on in-depth and semi-structured interviews with two or more participants, their individual opinions, and their siloed responses. The latter, on the other hand, has a

strong emphasis on the group dynamic as well as the participants' interactions and discussions between each other, all in regards to the topic boundaries ensured by the moderator. As Morgan (1996) explains, the latter allows the participants to contribute with explanations and comparisons within the group that in turn provides the researchers rich data. The purpose of conducting focus groups in the customer stakeholder group is to find the motivations in individuals that have chosen to engage, or not to engage, in telehealth services, seeking the 'why' rather than the 'what' (Oates & Alevizou, 2018). Since the receiving end of the service exchange is just as important to the service quality as the providing end (Vargo & Lusch, 2004a, 2008, 2016), we also hope to find barriers of usage and suggestions for improvements within telehealth services.

Role of the moderator

Considering that this research paper takes an interpretative approach, we accepted that the moderators subjectively will form the data that is derived. This is especially true in focus groups, where not only a focus group guide was prepared to set topic boundaries, but the moderators took an active role in guiding the discussion. The aim of the moderator role is to give the participants enough leeway to fully express their motivations and behaviours, but to keep the conversation within the realm of telehealth services. Since the purpose of the focus groups is to gather impressions of telehealth services in service receivers, the moderators applied a semi-structured approach (Oates & Alevizou, 2018). Another important implication of the moderator that needs to be taken into account is the fact that the participants provided their own subjective experiences and interpretations. At best it would lead to deep and interesting arguments, at worst it could lead to a pursuit of getting an own agenda imposed on the group. Thus, the moderator needed to be aware if any particular participant took a leading position in the majority of the questions and instead try to involve all members into the discussion and encourage all members to voice their opinions (Morgan, 1996).

Preparations

An interview guide was prepared with eight open-ended questions specifically developed to make the participants openly discuss telehealth services, one was prepared in Swedish and one in English (please see Appendix G for the focus group guides). Before conducting the focus groups, the questions were tested on our colleagues to ensure clarity and understandability. The focal point was not only the opinions

of the participants, but also on their interactions with each other. As each focus group was planned to take roughly one hour, each question was given a certain amount of time that was controlled by the moderators (Krueger, 1998). Question #1 was an opening question that made the participants feel included and be given a sense of comfort to speak in the group. Question #2 to #4 derived shorter discussions and made the group discuss healthcare in general: their idea of good versus bad healthcare, their previous experience of receiving healthcare service, and their perception of private versus public healthcare (the latter will then open up the discussion towards private telehealth firms in particular). Questions #1 to #4 were each allocated five minutes of discussion each.

When the participants were warmed up to engage in the core questions, which was why Questions #5 to #8 will be allocated ten minutes of discussion each. Regardless of the participants' prior experience with telehealth, we wanted to study their opinions and feelings of the current trend of healthcare transitioning online. We wanted to hear why some have used telehealth services and their positive or negative anecdotes, and at the same time hear why some have *not* used telehealth services and what would make them decide to use the services. The moderators made the participants emphasize the motivations behind the decisions to use or not use telehealth. Furthermore, enabling features of telehealth usage, as well as barriers to telehealth usage, were discussed, either experienced first-hand, word-of-mouth tales, or hypothesized. Lastly, the participants' willingness to pay for healthcare in general and telehealth in particular was discussed, as well as their reasoning behind their opinions. Because of the Swedish tradition of publicly available healthcare this might impose political standpoints. It was taken into consideration by the moderators that tried to steer the conversation to non-ideological arguments.

Sampling and operation

To ensure that everyone participating in the focus groups would get their voice heard, we attempted to keep the groups on the lower end of the suggested participation number of *n*: 4 to 12 members (Oates & Alevizou, 2018). Segmentation was further utilized to create groups consisting of specific categories (Morgan, 1996). In our case, we initially decided to focus on Swedish citizens across several different age groups and created groups of participants aged 18 to 30, 31 to 50, and 51 to 70 years old; however, due to the current COVID situation, the elderly segment, 51 to 70 years old, was later excluded. Due to Swedish regulations, no one below the age of 18 is entitled to a 'BankID' (i.e., a digital identification

tool critical to telehealth usage) and was therefore disregarded in the study. No prior experience of telehealth was deemed necessary since we wanted to hear experiences and opinions. As Morgan (1996) acknowledges, segmentation can be of disadvantage as the number of groups can be inconceivably large, which is why we have decided to stick to the three wide segments of age groups mentioned. COVID-19 restrictions posed a practical issue of gathering large groups of people, this is in particular true for the older population, aged 51 or above.

Online focus groups can produce less rich data compared to face-to-face focus groups as non-verbal communication, visual cues, group dynamics can be missed, and conversations might lack flow (Oates & Alevizou, 2018; Stewart & Shamdasani, 2017). If found necessary, we will resort to webcam facilitated online synchronous focus groups. The elderly population might struggle with technology which is why an online focus group might be suboptimal for that particular segment group. Additionally, older people that *do* participate in the online focus groups might be more tech-savvy than the population that they represent and thus skew the data results. This is another reason for their exclusion. There are some advantages when face-to-face focus groups are complemented with online focus groups as the convenience of online facilitated discussions can balance the inconvenience with face-to-face focus groups, such as the absence of geographical boundaries, decreased costs, and easier accessibility to remote participants (Stewart & Shamdasani, 2017).

The participants were sampled using a non-probability, purposive, sampling method with the aim to learn from 'information rich' participants (Saunders et al., 2016). To create a wide spectra of differences in each focus group, the only criteria were their residence in Sweden, their respective age, and their prior use of general healthcare services, online or offline. Two focus groups will initially be conducted, one for each age segmentation (thus, due to the COVID situation, excluding an older segment). If found necessary, more focus groups will be held until saturation is reached (however, due to time constraints, maximum six groups). In the case of face-to-face focus groups, the chosen location will be a neutral outdoor space for all participants to feel comfortable and follow current COVID-19 restrictions (Oates & Alevizou, 2018). To sample the focus groups participants we used social media platforms where we announced our desire to conduct focus groups in different age categories. Please see Appendix H for the focus group segmentations and Appendix I for the focus group participants.

Limitations

The critical point of conducting focus groups is to do ongoing data collection until saturation is reached (Morgan, 1996). However, due to the aggravating circumstances that COVID-19 restrictions impose, we have been unable to reach the desired amount of focus group discussions. Despite online tools and the possibility of online focus groups, not enough participants have been motivated to join. Therefore, a limitation to the focus group data collection lay in the low number of participants in each focus group, and the low number of focus groups conducted. Also, even though the research looks at both nationwide telehealth service providers (i.e., Min Doktor and Kry) and region based telehealth payers (i.e., Region Skåne), the participants are considered as Swedish residents, and disregarding their regional attachment. This might skew the data, with the risk to fail capturing the whole country population of service receivers. As healthcare experience at times can be private and personal, some participants might feel an unwillingness to disclose some healthcare experience details in front of others – in those cases one-on-one in-depth or semi-structured interviews could be a better alternative. Lastly, it would be beneficial for the research to include an older segmented focus group, as the restrictions are more relaxed this can be an additional add-on to our study.

4.2.5. Evaluation of methods: Trustworthiness

To guarantee that the research produced is of adequate quality, we will constantly refer to the trustworthiness criteria developed by Guba and Lincoln (1985). These criteria were a qualitative take on the quantitative measures for confirming validity, reliability, and generalizability, a move from the scientific term to the naturalistic term. Validity is dependent on an object being quantitatively measured, since qualitative studies do not measure anything it becomes an invalid criterion. Reliability is dependent on the positivistic idea of separating the researcher from the method which cannot be done in a qualitative study where the two cannot be differentiated. Quantitative studies attempt to conclude results that are general for a particular population to reach generalizability; however, in qualitative studies no specific population is represented since the end result is intended to be general in respect to theory (Stenbacka, 2001). The trustworthiness criteria were specifically developed to escape quantitative evaluations and to ensure that qualitative studies met the highest possible standards. They include credibility, transferability, dependability, and confirmability (Guba and Lincoln, 1985; Guba, 1982). The four criteria, its scientific

counterparts, and our attempts to meet the criteria is presented below, as well as a summarized table in Appendix J.

Credibility

Credibility is concerned with the descriptions of the experiences that are found and analysed are authentic that makes the findings plausible (Guba, 1982). Therefore we were careful to prolong our engagement in the case and pay certain attention to its multiple influences and varying contexts. By applying both in-depth interviews and focus groups, we were also able to reach data triangulation; it was further accentuated by us continuously reading reports and other secondary data. We engaged in peer debriefing with our competent supervisor that is well acquainted in the world of digital platforms and, if deemed necessary, member checking by feeding data back to the source (i.e., the interviewee or the focus group member) to confirm that our interpretations are reasonable.

Transferability

To apply the findings of this research in other contexts outside of this particular multiple-case with other respondents, transferability is needed; the findings produced need to be context-relevant (Guba, 1982). To reach the criterion and enable applicability, we used thick descriptions of the respondents behaviour, experiences, and context. For instance, the participants that joined the focus groups had their age, gender, hobby, and educational level noted to gain an understanding of the contextual premises of the focus group members. Furthermore, for the in-depth interviews, we used purposive sampling methods and did background checks of the interviewees, making sure they have a clear connection with the topics in question.

Dependability

To make sure that the research findings are consistent and stable, we actively and continuously aimed for dependability (Guba, 1982; Golafshani, 2003). The methods used to collect data – in-depth interviews and focus groups – had a slight overlap to reach method triangulation. All audio data were transcribed and coded in the NVivo software using the Gioia-method of first order concepts, second order themes, and aggregated dimensions (Gioia et al., 2012) to create consistency in the interpretations. Additionally,

we (informally) documented each step in the research process as well as examined the process of data reduction, also known as "dependability audit" (Guba, 1982, p. 83).

Confirmability

To ensure researcher neutrality, the risk for our own biases and self-interests need to be decreased to avoid the data collection and interpretations to be skewed (Guba, 1982; Cohen & Crabtree, 2006). Since we were co-producing data along with the participants through our qualitative and interactive data collection methods, we accepted a certain level of reflexivity. However, interpretation should be free from our own preferences and viewpoints. Confirmability is especially important to consider for this research paper due to our philosophical standpoints of not being separated from the case that is studied. To aid the mission for confirmability, we kept (informal) notes on our decisions, research team meetings, reflective thoughts, findings, and interpretations, thus creating an audit trail, also called "confirmability audit" (Guba, 1982, p. 83). These notes were used to look for support in the data as the research took form.

5. Empirical data findings

Through exhaustive coding of the qualitative data, the Swedish telehealth service offering will be introduced first. The actors' interactions are then divided into the subchapters of supply-side and demand-side motivations. Lastly, the central interaction where all actors meet will be described. The insights of their interactions will aid the understanding of the Swedish telehealth ecosystem as well as the industry.

5.1. The value proposition of telehealth

As the previously mentioned challenge of increased healthcare service demand and resource scarcity, this may lead to a negative impact on the healthcare service supply and put the healthcare quality at risk. In the *Report of the operational and budget plan for 2022-2023*, Region Skåne points out that digital solutions are needed to satisfy the demand from both citizens and healthcare providers (Region Skåne, 2020).

5.1.1. Accessibility and productivity improvement

Region Skåne emphasized that they will continue to prioritize the accessibility of healthcare and they kept stressing the important role that technology and digital solutions play in this effort. The Health and Healthcare Strategist of Primary Care at Region Skåne explained that one of their main goals is to implement the concept of 'digital if possible and physical if needed'. She continued explaining that this will free up part of their resources which hopefully can lead to more open time slots for the patients who need care at physical clinics (Health and Healthcare Strategist of Primary Care, Region Skåne, 10/03/2021).

The private sector saw the deficiency of accessibility and productivity as a business opportunity when it comes to healthcare services in Sweden. It pushed private firms to develop this novel service offering of telehealth with the mission of revolutionizing the accessibility of healthcare services in Sweden. The CEO of Kry emphasized the importance of offering the right type of service to fulfill a patient's need.

He agreed with the 'digital if possible and physical if needed' principle and added that this is their 'recipe' of practicing primary healthcare service.

Patient self-care in which patients can perform a certain degree of healthcare measure at home, assisted by the healthcare service provider, can be realized through telehealth. The Health and Healthcare Strategist of Primary Care at Region Skåne meant that patients with 'healthcare needs' [vårdbehov] are the ones being worried or anxious regarding his or her symptoms in which 'self-care' [egenvård] often is sufficient. The Group Financial Controller at Region Skåne pointed out that this is where telehealth can make a difference since it is a "good way to clean up certain types of patients in the waiting room". The Community Youth Center Assistant, 26, and the Retail Assistant, 30, in focus group #1 have had experiences in self-care through telehealth. They also expressed their views on which patient's involvement is crucial in the consultation process and there is a need for a good understanding of one's own symptoms. On the other hand, the Sommelier, 38, in focus group #2 underlined that he will only consider using telehealth when it comes to mild symptoms. With more severe symptoms, he will feel more secure with physical face-to-face healthcare consultation.

In the beginning, Region Skåne aimed at increasing accessibility through telehealth, especially for the target group living in the rural area who have a long distance to primary care clinics (Health and Healthcare Strategist of Primary Care, Region Skåne, 10/03/2021). However, the outcome is not as Region Skåne expected. Instead, it shows that women between 20 and 40 years old are the largest client group who seek medical help for their children. The Head of Business Analysis at Min Doktor agreed that women being the biggest client group. In addition, he mentioned that clients are often from bigger cities which is opposite from what Region Skåne aims for. All the participants with children from focus group #2 meant that digital healthcare services do not only increase accessibility, but they also mentioned the importance of convenience and effortlessness. Having ill children and visiting a physical clinic appeared to be a hustle for parents. One of the reasons for preferring telehealth rather than visiting a physical clinic is tackling easier tasks such as renewing a prescription. The BSc Student in Web Analysis, 30, in focus group #1 who currently has no children explained that he cannot see any reasons for him to use telehealth now, but he will consider using telehealth when he has children in the future due to the easier process and time-savings.

Increasing efficiency is essential in easing the aforementioned phenomenon that the healthcare system is facing in Sweden. The CEO of Kry claimed that when it comes to productivity within the primary care service, Sweden is the worst in Europe. Region Skåne's Group Financial Controller accentuated that:

> *The turnover of primary healthcare clinics in Sweden is approximately 50 billion SEK and the number will not go down in any ways. Therefore, it is important to improve efficiency so that the same amount of money can be in better use.*
> (Group Financial Controller, Region Skåne, 07/04/2021)

Both Region Skåne and the private sector underlined that telehealth can solve up to approximately 65 to 75 percent of the cases which can increase the efficiency of the total healthcare system (CEO, Kry, 12/03/2021; Project Manager, Region Skåne, 11/03/2021). The Head of Innovation and Partnerships at Min Doktor indicated that telehealth delivers five percent of the primary care service with the cost of two percent of the total primary care budget. It means that telehealth has a lower cost and higher productivity.

5.1.2. Normalization of telehealth

Overall, all the interviewees employed in the healthcare sector agreed that telehealth has had a positive impact for the healthcare system in Sweden. The interviewees from the public sector see private telehealth firms as a push factor for the development and innovation of public healthcare. The Head of the Program for eHealth and Digitalization at Region Skåne added that private telehealth firms do not only focus on productivity but also value creation and incentives to keep patients as 'customers'.

The Head of Innovation and Partnerships and the Head of Business Analysis at Min Doktor emphasized their vision of normalizing telehealth for the next generations. Right now, the focus is to build up the telehealth category. To do so, educating people and building awareness of this new service innovation is vital.

We are on the way to the normalization of telehealth. The older the population, the more healthcare we need. If we now can introduce telehealth to this target group actively, the barrier will be pretty low to use telehealth and it will be the primary method of seeking medical help, as well as for healthcare providers who work in this industry. […] That is why we focus on people aged between 35 and 55. If we can implement telehealth to them and work on it for 10 to 15 years, after that, it will be natural for them to keep using telehealth service. (Head of Innovation and Partnerships, Min Doktor, 09/03/2021)

To normalize telehealth and nudge the senior population into the engagement of digital healthcare, Min Doktor is focusing today on a middle-age target group. As this group grows old, telehealth will be a natural part of their way of seeking healthcare.

5.2. Supply-side value co-creation

As the stakeholders have been mapped out and reduced to the four groups of payers, telehealth, providers, and customers, the data collected has given great insights into the relationships between these groups, the motivations behind their actions, what exactly they supply, and to whom they supply it to. All four actors are dependent on these and connected in a circular process to successfully enable services to function. These four motivations will be presented in the order of *payers* (deliver remunerations to telehealth), *telehealth* (create jobs and pay salaries to services providers), *providers* (provide healthcare services to service customers), and *customers* (pay taxes and insurances to the payers).

5.2.1. Payers: deliver remunerations to telehealth

Ever since 2009, when the 'law of freedom of choice in systems' [lag om valfrihetssystem] was set in place by the judicial system of the Swedish government, public and private primary healthcare businesses have operated side by side in the Swedish market. The state of Sweden distributes tax money to each of the 21 Swedish regions that in turn allocate the resources evenly to both public and private primary healthcare businesses, regardless of their digital or physical operation. Thus, there is no requirement to have a physical clinic to be allowed to offer healthcare services. The amount each healthcare firm receives from the public sector is based on the number of patients that the firm has enrolled and is distributed on a monthly basis. It represents the vast majority of the revenue stream for both public and private primary healthcare and does not discriminate between physical or digital procedures. The 'National Healthcare Authority' [Hälso- och sjukvårdsnämnden] is the purchaser of the healthcare services and is obliged by the 'National Agreement' [Riksavtalet] to pay for the healthcare consumption of the population (Group Financial Controller, Region Skåne, 07/04/2021).

The Head of Innovation and Partnerships at Min Doktor described Sweden's "historic and unique decision" to allow for private actors to "deliver healthcare services on state-funded grounds". He explained the development and alteration of their business model. When they launched their telehealth business, 80 to 85 percent of their revenue came from private insurance companies. They have now changed the revenue streams so that 80 percent of today's income stem from public remuneration and

the remaining 20 percent stem from private insurance companies and individual patients (Head of Innovation and Partnerships, Min Doktor, 09/03/2021).

The rulings placed Region Skåne in a complex situation with their multiple roles as both healthcare service providers in their branch of Primary Healthcare Region Skåne, but also as payers that finance private telehealth firms. Since they launched their own telehealth subdivision in 2020, Primary Digital Healthcare Region Skåne, and since telehealth firms ventured outside of the digital and established physical facilities they are in direct competition. Region Skåne needs to distribute their scarce resources that are financed by the state to cover their own healthcare operations costs while simultaneously paying the invoices from telehealth firms. It has led to some friction between public healthcare service and telehealth firms. Much criticism is grounded on the greater costs that telehealth firms allegedly are causing Region Skåne, leading to monetary losses that cannot be used for running the operation smoothly or hiring healthcare staff. It is thought to lead to a decrease in the quality of healthcare service delivery (Health and Healthcare Strategist of Primary Care, Region Skåne, 10/03/2021).

In 2016, a new legislation was passed that entailed a nation-wide agreement between the Swedish regions, called the 'foreign region remuneration' [utomlänsersättning]. Min Doktor opened their first physical primary healthcare facility in the city of Jönköping the same year to exploit the system of 'foreign region remuneration'. Other telehealth firms in the Swedish industry followed shortly thereafter. It allowed them to have a physical base in one Swedish region and through online telehealth services digitally offer healthcare to patients all over the country. The only requirements are for them to 1) ensure legal identification of healthcare workers and payment, which is done using the digital identification software BankID, 2) promise that the digital service should replace a physical visit, and 3) that a record is kept on the patient and her needs. In 2016, the reimbursement amount in the model of 'foreign region remuneration' was 2200 SEK per visit; however, it has decreased in different stages ever since. In the spring of 2017, the amount was lowered to 1200 SEK per visit, in the fall of the same year it was lowered further to 600 SEK. The current amount enjoyed by telehealth firms is down to 500 SEK minus eventual patient fees. It is today still a revenue stream that telehealth firms can use to boost revenue, albeit not as profitable as it once was (Group Financial Controller, Region Skåne, 07/04/2021).

The remuneration that the Swedish state, and thus Region Skåne in extension, provides to the telehealth market cannot be overstated. It is the main revenue stream for both public and private digital healthcare service initiatives. As private telehealth firms gain market shares in Sweden, the public healthcare sector loses market shares by decreased registered patients and increased costs. According to the Group Financial Controller at Region Skåne, not only the public primary healthcare clinics loses registered patients, but a similar decline is seen in other public healthcare branches, such as the 'pediatric health clinic' [barnavårdscentralen] and 'maternal health clinic' [mödrahälsovården]. This decline has been seen each month the last 10 years and the patients register themselves at private clinics instead. Matter-of-factly he stated that "market shares are lost" (Group Financial Controller, Region Skåne, 07/04/2021). Furthermore, the Head of Program - eHealth and Digitalization at Region Skåne, shared her insights of the public healthcare and its costs that increase 7 to 8 percent annually, commenting that she thought it was "unsustainable". She thought that elderly people that live longer and are multi-sick was the main reason behind the cost increase.

The Group Financial Controller at Region Skåne criticized that the issue of telehealth has been poorly managed. This is because of the lack of dialogue between the public healthcare sector and the 'medical profession organization' [Läkarkåren]. In his opinion, there should be a guideline regarding the types of cases which can be approved as working digitally. Also, this guideline should be discussed and decided by medical professions, not economists or politicians as it is now.

The Project Manager in Region Skåne said that the first telehealth player in Sweden, Min Doktor, who started their business in Skåne, contacted Region Skåne at the beginning of their business launch. The private telehealth player expressed their willingness to a partnership with the public sector. Since Region Skåne is the biggest player within the healthcare industry, they could see a win-win situation if they become partners. However, Region Skåne had a defensive attitude and turned down the offer directly. He meant that right after that, these private players started to penetrate the healthcare system and found their way to grow their market share. He continued that this has led to an enormous economic consequence and Region Skåne has no one to blame but themselves.

The public sector sees friction by essentially financing their competitors. Ever since the 'law of freedom of choice in systems' [lag om valfrihetssystem], the public sector has lost patients, and thus revenue, and simultaneously detracts talents and increases their costs. Having a mission not aimed at profit, but rather to improve the overall health of the population, they lose market shares to private telehealth firms.

5.2.2. Telehealth: create jobs and pay salaries to services providers

The capital provided by the Swedish government allowed early private telehealth firms to thrive. One way they managed steady growth was through their ability to attract a competent workforce such as nurses and doctors. As was noted from two of the private telehealth firms they only had to strive to become a better employer than the public sector, a task seemingly easy based on the negative reputation that the public healthcare sector has earned. The CEO of Kry specifically mentioned how his employees were actively looking for an employer with "some forward-thinking and change" and found it easy to recruit competent staff since Kry offered them "something smarter and better and simpler". The Head of Innovation and Partnerships at Min Doktor agreed that they also found it easy with recruitment of competent employees, they only need to "remove administration, double documentation, and everything that is of frustration in the traditional healthcare sector".

Through standardization and flow optimization the private telehealth firms increase both the service quality to customers (i.e., patients) and the working conditions to the employees. According to the CEO of Kry, standardization allows for a holistic flow where employees at Kry can work safely and with flexible hours; a perk that he claimed was "clearly incredibly appreciated" by the employees. The public sector, on the other hand, struggles with a sluggish and bureaucratic organizational culture where efficiency is halted and change takes time. The public sector itself believes that the perception of being slow and old-fashioned is one reason why healthcare workers change to a private telehealth firm. As was mentioned by the Health and Healthcare Strategist of Primary Care at Region Skåne, the public sector is hindered by time-consuming procurement processes and long contracts. Private actors can move much faster. She uses this perception as yet another reason for enhanced attractiveness for employees to move towards the private sector, she even said that the public sector might be viewed as "a bit 'dusty'" (Health and Healthcare Strategist of Primary Care, Region Skåne, 10/03/2021).

She further believes that the private telehealth firms can attract workers by simply paying them more. She mentioned that it is difficult to attract employees and offer a monthly salary of 30 000 SEK when the competitor can offer 40 000 SEK. Considering the sole dependence of governmental funding, the public healthcare clinics struggle to compete on salaries and need to stick to set regulations and strict budgets. Instead of money, the public sector can offer the employees stability (Health and Healthcare Strategist of Primary Care, Region Skåne, 10/03/2021).

Telehealth firms have steered their efforts to improve conditions for their employees that come from the public sector. They have created flexible working conditions, competitive salaries, and an agile and forward-looking organizational culture that has made telehealth an attractive employer for service providers. This is in stark contrast to public and physical healthcare firms and their rigid working conditions, lower salaries, and sluggish and bureaucratic culture. Telehealth firms are thus, in a sense, better at employing higher competence with stronger operant resources. Interviewees from both private telehealth firms and the public sector seems to agree.

5.2.3. Providers: provide healthcare services to service customers

The employees at telehealth firms enjoy enhanced flexibility, higher salaries, and an agile culture. As the attractiveness of telehealth firms' working conditions increases, the competition among the employees – the service providers – increases correspondingly, leading to more competent employees in the private sector. In exchange to the attractive perks provided by the telehealth firms, the healthcare providers are assumed to use their expertise in accordance with the telehealth firms' internal processes to supply high-quality and efficient healthcare services to the patients. At Kry, quality management efforts such as quality processes and live surveillance are used for each service exchange encounter to ensure a "patient secure approach". The CEO of Kry argues that these quality management measures do not exist at public primary healthcare clinics; instead, the doctor is there "seen as a king and God", a mindset that hinders quality development.

In opposition to the telehealth platform management, the perspective of the patient is different. The participants of Focus group #1 came to the consensus that quality-focused service providers were of

utmost importance. Even though digital service providers are quality managed and more accessible for the patients, they lack credibility compared to their physical face-to-face counterparts:

> *Yeah, in an abstract way it's like a calculation between convenience versus quality, like if it's something that requires not a whole lot of quality, like getting a new prescription, then convenience way outweighs quality.* (Community Youth Center Assistant, 26 y/o, 16/03/2021)

According to the Retail Assistant, 30, there is a higher risk for the doctor to miss important details when engaging in online healthcare services compared to physical examinations. He concluded thereby that online healthcare cannot offer the same service quality as a traditional healthcare clinic. During the discussion of service quality in Focus group #1, the BSc Student in Web Analysis, 30, stated that the quality aspect was the main feature for him when choosing a healthcare service, physical or digital. The Ph.D. Student in Microbiology, 27, agreed and added that "I think with someone who's being a doctor for an app, you've got less trust". The BSc Student in Computer Science, 29, weighed in and openly asked "Can you have a quality examination of a person through a digital app?" which no one had an answer to.

Also focus group #2 came to the conclusion regarding service quality, where emphasis was placed on lack of credibility for digital service providers in regards to more complicated injuries and needs. For instance, the Sommelier, 38, explicitly stated that it is easier to engage in telehealth services for smaller issues; however, he would feel safer going to a physical healthcare clinic with more complicated injuries.

Professional interviewees from both the private telehealth sector and the public physical sector argued that digital healthcare providers help to take on easier and smaller cases. Even though this aspect of telehealth business models has received some critique in the media (e.g., Järhult, 2019; Lennen Merckx, 2018), some advantages were pointed out by the interviewees. For instance, the Group Financial Controller at Region Skåne explained that human resources would be freed up at physical healthcare clinics that then can aid in more serious and acute needs. He stated that this process "cleans up in the

waiting room" at "the real [i.e., physical] healthcare clinics". Also the Health and Healthcare Strategist of Primary Care at Region Skåne mentioned the advantage with digital healthcare services as the healthcare providers can deal with easier issues digitally that would free up time for the more serious healthcare demands. Additionally, she explained that as a consequence to the COVID-19 pandemic, there have been employees that could not work in physical clinics due to the risk of contamination as they might be "in a risk group or being pregnant and do not want to be exposed for infection". Working digitally instead would enable them to keep the job, feel needed, not having to be furloughed, and that the clinic can keep the staff. Furthermore, this notion was echoed in the Focus group #2 where the Nurse, 48, appreciated that digital tools could be used to avoid going to an "unnecessary healthcare meeting" and instead solve some specific symptoms digitally.

As for the professionals interviewees, the Project Manager at Region Skåne shared his insights of the effectiveness of digital healthcare. According to him, 65 to 70 percent of all patients are happy with getting their cases solved remotely through telehealth and self-care; 20 to 25 percent need some type of physical support process; lastly, five to seven percent of the patients can never engage in self-care, will never have their needs satisfied by telehealth, and will always need the service provided physically. Interestingly, the CEO of Kry stated similar percentage numbers, stating that digital telehealth "undoubtedly" can solve 65 to 75 percent of all symptom-cases. He added that telehealth "cannot solve everything" and that physical clinics are needed to cover all patient needs.

5.2.4. Customers: pay taxes to the payers

The fourth and final supply-side motivation in telehealth service processes is the one that occurs from the patient, the customer, to the payer. In the case of the telehealth sector in the Swedish market, the payment from the patient can is passive in terms or taxes. Even though the private telehealth firms charge a small fee from the patient for each visit, the government has set a ceiling that prohibits firms to charge more than 1100 SEK on a yearly basis, calling it a 'free card' [frikort] (1177 Vårdguiden, 2021). Hence, private telehealth services can be considered as relatively affordable in Sweden. In both focus groups there was some misunderstanding and unawareness of this concept; particularly one participant in Focus group #1 expressed his confusion: "So you can sign up to a private one here, not really pay anything more? And why would you do it? Do you get better healthcare?" (Ph.D. Student in Microbiology, 27 y/o,

16/03/2021). Another participant that had been an active customer of telehealth services, in particular for renewing prescriptions, answered the questions by saying that the private telehealth service is "faster sometimes" (BSc Student in Computer Science, 29 y/o, 16/03/2021). In Focus group #2, a similar situation occurred. The Communicator, 40, was aware of the patient fee of 200 SEK (in the region of Skåne) but was unaware that the 'free card' is applicable on private telehealth services. When she was explained that she would not have an annual cost exceeding 1100 SEK if using telehealth services, she expressed gratitude for the information. She said that because of the affordability, she now could see herself using telehealth more in the future and exclaimed "This is great!" (Communicator, 40 y/o, 18/03/2021).

Historically, healthcare is mainly public-driven in Sweden. In recent years, more and more private players have appeared which has raised different opinions, debates, as well as concerns. Both the CEO of Kry and the Head of Innovation and Partnership at Min Doktor articulated the strong public versus private mindset in Sweden and how it is affected by right versus left politics. The CEO of Kry meant that there is some kind of taboo that "healthcare must be public driven otherwise it is bad and equal to poor quality due to the politicized atmosphere in Sweden". Even though their firm has been examined and gotten the highest rating by both the Data Inspectorate and the Health and Care Inspectorate. The Head of Innovation and Partnership at Min Doktor shared the same opinion. He added that the same scenario appeared 15 years ago when private healthcare providers came to Sweden. Now, both customers and healthcare service providers thrive and are satisfied with private healthcare firms. The same situation happens now with telehealth.

A reminder from the project manager at Region Skåne is that there are differences between private players who are accredited and non-accredited. The accredited private players are included in the agreements of Region Skåne and they have to follow their rules to be able to perform healthcare services. She meant that these two often have different views on how to run healthcare.

The Retail Assistant, 30, in Focus group #1 shared his doubts on the business model that several private telehealth firms execute in Sweden, including Kry and Min Doktor. Notwithstanding the minor out-of-pocket patient fee, he expressed concerns of the telehealth firms' main revenue stream coming from

taxpayers via governmental fund allocation. In his opinion, they are exploiting, undermining, and essentially hollowing out state resources. He stated: “In general, I’m [extremely] skeptical of digital healthcare”. When asked to elaborate on his unwavering standpoint, he responded that the public remunerations are unproportionally high compared to the service provided. He also mentioned that he is willing to go to great lengths to reach a public healthcare clinic and has taken active measures to avoid private telehealth firms (Retail Assistant, 30 y/o, 16/03/2021). The Community Youth Center Assistant, 26, agreed with the Retail Assistant, 30, at least on an ethical level, and thought that public healthcare was “fairer” (Community Youth Center Assistant, 26 y/o, 16/03/2021).

The CEO of Kry disagreed with the narrative presented by the Retail Assistant, 30, in Focus group #1 and explains that the first out of three foundational principles of Kry is “the patient goes first”. Furthermore, he clarified that Kry can cut costs by their nationwide operation and increased flexibility; that is in contrast to decentralized regional-based healthcare operations with immobile physical clinics and healthcare providers. He argued that a nationwide telehealth operation would decrease the patient’s regional tax rate related to primary healthcare services. At the current situation, however, he expressed despair on behalf of the taxpayers that he claimed to pay higher healthcare taxes than necessary (CEO, Kry, 12/03/2021).

5.3. Demand-side value co-creation

Considering the many different service exchange touchpoints in the Swedish telehealth sector, all types of interactions must be investigated. In accordance with network effect theory, multi-sided platforms realize both supply and demand movements (Fürstenau et al., 2021). As Fürstenau and Auschra (2016) pointed out this is true for telehealth services as well; in addition to supply-side push effects, there are also demand-side pull effects present in telehealth firms. As an antipole for supply-side processes that motivates value co-creation, this chapter will present the four demand-side pull-effects identified in the collected data that enable value co-creation in Swedish telehealth firms. The circular process of the four different stakeholders is therefore the same, although reversed. The four demand-side effects will be presented in the order of *payers* (need the population to be healthy), *customers* (a demand for healthcare

service towards providers), *providers* (supply telehealth's demand of healthcare competence), and *telehealth* (relieve the payers' increase in healthcare demand).

5.3.1. Payers: need the population to be healthy

The state of Sweden is the purchaser of healthcare and the regions are allowed to allocate an equal number of resources to public and private, physical or digital, healthcare businesses. As telehealth has emerged in the private sector, the public sector of Region Skåne has now started to implement their own telehealth branch. According to the Health and Healthcare Strategist of Primary Care at Region Skåne, the telehealth branch was launched with the main reason for it to complement traditional healthcare. This statement did not correspond well with the argument from the Group Financial Controller at Region Skåne. When asked why they ventured out and launched their own telehealth service, he responded by stating that "it is of course to increase the accessibility" and that the public sector needs to catch up with private telehealth firms and their superior accessibility. The main purpose is to offer accessible healthcare services to the population, the patients (Group Financial Controller, Region Skåne, 07/04/2021).

There have also been found different missions in the public versus the private sector. When asked to compare the two, the Health and Healthcare Strategist of Primary Care at Region Skåne explained that: "Region Skåne is public, we have a completely different mission compared to our private competitors. We have a different responsibility towards tax money, a responsibility towards our employees. It is completely different". This is reiterated on the website of Region Skåne where it is stated that they are responsible to provide healthcare to the population of Skåne, and that the healthcare should be characterized by "safety, respect, integrity, and accessibility" (Region Skåne, 2021b). According to the Head of Innovation and Partnerships at Min Doktor, the mission of Region Skåne is indeed different and can be divided into two missions: 1) to finance and satisfy the healthcare needs of the population in the respective region, and 2) to deliver healthcare offerings for the citizens in the respective region. Although Kry and Min Doktor explicitly have a 'patient first' mission, they have the aspiration to become profit-makers and need to eventually satisfy investors' return on investment. As the CEO of Kry stated: "I also need to run this as a business" (CEO, Kry, 12/03/2021).

Several professional interviewees also discussed the question of the patient's responsibility. In terms of the proactive healthcare provided by the healthcare firms, patients also have a responsibility to take care of themselves; for example, to decrease risk of getting sick and lower infection risks. The Project Manager at Region Skåne argues for the public healthcare sector to have a more supportive role for the patient and that responsibility should be shared between the public healthcare sector and the patient. In his opinion that would benefit both the healthcare sector, the patient, and the governmental remunerations (thus also taxpayers).

We also received some input from the private telehealth sector in regard to the government's proactive healthcare practice and push of patient responsibility. At Kry, it was described how proactiveness is included in Kry's mission and even is a prerequisite for accredited telehealth firms to operate. Furthermore, it was explained that Kry, with its newly established physical clinics, is economically incentivized to act proactively since the "remuneration model is based on capitation models, which means that if the patients are healthy and don't come to you, you will get paid anyways" (CEO, Kry, 12/03/2021). If the payers (i.e., the regions) can discourage patients from becoming sick in the first place they would free up more human resources in the healthcare sectors. The population increase and its further aging must be accompanied with the proper healthcare; in the case of an unhealthy population the citizens will be unable to perform their work. A decrease in active labour force puts more pressure on the Swedish treasury as they, in addition to healthcare, need to provide welfare and lose the taxable income that otherwise would be circulated back in the governmental budget.

5.3.2. Customers: a demand for healthcare service towards providers

As the pool of potential patients increases in correspondence with the population growth and aging, their demand for high quality healthcare services is also increased (Kangro & Nyhlén, 2017; Kolmodin & Sundström, 2021). The service providers and the patients are co-creating value every time a service is exchanged; thus, the perceived service quality depends just as much on the patient's perception as the healthcare provider's skills and service execution. In terms of service quality, one member of Focus group #1 saw the quality as the single-handedly most important feature of a visit at a primary healthcare provider. He also declared that, for an examination, he would not trust digital healthcare as much as a physical doctor (BSc Student in Web Analysis, 30 y/o, 18/03/2021).

While the younger segment seemed to be more concerned about service quality, the older segment had a different perspective. The Communicator, 40, and the BSc Student in Teaching Education, 37, in focus group #2 agreed with each other that accessibility is of utter importance considering they have kids and live very hectic city-lives. To be able to receive healthcare services for their children without going to a physical clinic was compelling for them; the Communicator, 40, even said that "speed is the most important aspect". It should be mentioned that both participants live in suburban areas with relatively easy access to physical healthcare clinics. Technical Salesman, 32, chipped in and said: "I have many acquaintances that use [telehealth] for their kids. When they are snotty or squeaking or something else."

As was confirmed by the Health and Healthcare Strategist of Primary Care at Region Skåne, many telehealth users are adults that seek healthcare for their children; specifically, the primary telehealth user group is "20 to 40 year olds, more women than men". In regards to the most occurring telehealth customer, there was a consensus among the interviewees. The Head of Innovation and Partnerships of Min Doktor said that "the typical Min Doktor user is a woman somewhere between 35 and 55 years old", and the Head of Business Analysis at Min Doktor agreed by stating that "50 percent of all our cases are based on women between 18 and 45" years of age. The statement was reiterated in the case of Kry as well, where the typical patient is "below 40 [years old], and a preponderance of women instead of men" (CEO, Kry, 12/03/2021). When asked why this particular segment was targeted, two explanations emerged. The Head of Innovation and Partnerships at Min Doktor explained that it is typical in Swedish households that the woman – the wife, the mother – take responsibility for the family's health. Also, this age segment is seen as more technologically adaptable with the hope to normalize telehealth in the future when middle-aged customers grow into seniors. As for the main issue that the customers seek treatment for, "skin abnormalities" was mentioned by both the Health and Healthcare Strategist of Primary Care at Region Skåne and the Head of Business Analysis at Min Doktor.

The aging population and their greater probability of catching multiple diseases was mentioned by the Head of Program - eHealth and Digitalization at Region Skåne, when discussing the increased demand for healthcare services. Other reasons behind the increase in healthcare demand also include physiological illness – especially the younger population – and lifestyle illnesses – such as alcoholism,

obesity, smoking. Digitalization and self-care were seen as two measures to cope with the increased healthcare demand. She explained that they cannot supply the increased demand sufficiently with the decreasing resources. Instead, digitalization and automation can deliver service more effectively and thus serve more patients without increasing the resource costs. Self-care for simpler cases was emphasised as a means to free up time for the professionals that can focus on complicated issues.

Compared to a traditional physical healthcare visit, telehealth requires different knowledge, competencies, and skills from organizations, healthcare service providers, and patients. For healthcare providers and patients, the main required competence which is different from traditional healthcare visit is technological competencies. The Head of Innovation and Partnership at Min Doktor agreed that there are currently thresholds when it comes to introducing new technology to the older population. Since it is often the older generation who have more complex healthcare needs due to their age or multi-illness, it is extra important that there is no digital exclusion for the elderly. Often, the indication is that the younger generation has an easier time acquiring skills to adapt to new technology and harder for the older generation.

The Ph.D. Student in Microbiology, 27, and the Retail Assistant, 30, from Focus Group #1 agreed that many elderlies will not be able to use telehealth due to the technology hindrance. The BSc Student in Computer Science, 29, meant, however, the group that is incapable of handling digital services will shrink as the digital world grows over time. The BSc Student in Teaching Education, 37, from focus group #2 meant that her elderly parents have never used telehealth and prefer face-to-face consultation at a physical clinic.

On the other hand, the Head of the eHealth and Digitalization Program at Region Skåne meant that technological competencies are not only related to age – there are technologically insecure people in all age groups. The CEO at Kry agreed and said that he is surprised that many patients are fully capable of seeking help digitally and therefore, he does not think it is an age issue. The Nurse, 48, from focus group #2 pointed out that technology competencies can be related to other factors such as social and economic vulnerability or even traits of personality.

5.3.3. Providers: supply telehealths' demand of healthcare competence

For the telehealth platforms to be able to meet the increased demand of healthcare, they need the service providers to be competent and skilled to work efficiently and provide high-quality healthcare service. This is particularly important considering some potential patients perceive the digital interaction present in telehealth as less trustworthy compared to traditional primary healthcare. As was pointed out by one participant in Focus group #1: "I would just never trust, not the doctor or me, just like the [digital] interaction. It is just not sufficient to do a serious diagnosis." (Community Youth Center Assistant, 26 y/o, 16/03/2021). The CEO of Kry described how to ensure both high efficiency, accessibility, and quality among the staff. In addition to enhanced processes, standardized practices, and live surveillance of the employees that was mentioned in chapter 5.2.3., he explained that "you need to have other types of processes, first and foremost you need to have a very large pool of staff that can service incoming cases" (CEO, Kry, 12/03/2021). He claimed that Kry is unique in their digital resource pool where they have 50 clinicians working during the busiest hours with services open 24 hours a day, 365 days a year.

The Head of Innovation and Partnerships at Min Doktor had a slightly different point of view that was more focused on data points. Min Doktor tries to collect as much data as possible of the "700 000 to 800 000 registered users" to improve the decision-making of the service providers. He wanted his employees to have access to a vast amount of patient data that would support them in the direct visit by faster case solutions. For private telehealth firms, the gathered data intel is easily shared across the platform without any regional boundaries. Min Doktor can thereby discover both national trends and on-specific consumption patterns to quickly pivot the processes to meet these patient demands. The great number of active customers and the data that each of these customers create with each visit is yet another model for enhancing the necessary quality that service providers in telehealth can deliver (Head of Innovation and Partnerships, Min Doktor, 09/03/2021).

The data gathering aspect can seemingly create some valuable benefits for how telehealth service providers can improve both quality and efficiency for the patients, and in turn improve the platform itself. However, in Focus group #1, there were opposing opinions regarding personal data collection and its use to enhance telehealth services. One participant based his scepticism on the lack of IT security transparency and ideological beliefs. He questioned telehealth firms' storage procedure of the personal

data and claimed that they cannot guarantee that the data will not be hacked, stolen, or sold to a third party. He finished his arguments by stating that "This question is highly political, whether you like it or not" (Retail Assistant, 30 y/o, 16/03/2021). Another participant did not mind have his personal data used to improve the service quality in the healthcare that he and others would receive and thus benefit from, but felt at unease if it was to be sold to a third-party in which he would lose the control of his data and firms would profit off "a fraction of your privacy" (Community Youth Center Assistant, 26 y/o, 16/03/2021).

Even though all group members explicitly agreed on this argument, a third participant of the group claimed that the knowledge of exactly what your data is used for is limited and that the data is vulnerable for future unpredictable corporate changes. He proposed a hypothetical scenario where the customer allows a telehealth firm to use the personal data, just for it to be acquired by an insurance firm that then takes over the ownership of the customer's personal data. He concluded that he agreed with the Retail Assistant, 30, and would have a problem with simply giving away his data (BSc Student in Web Analysis, 30 y/o, 16/03/2021). This comment led to an interesting development in the reasoning of the BSc Student in Computer Science, 29, who previously had used telehealth several times. He first stated that he did not care if telehealth firms use his data to learn more about his case to benefit others, but after the personal data discussion he changed his mind: "So after [BSc Student in Web Analysis, 30]'s input, I'm not sure if I want to share all my data anymore. That made me really scared." (BSc Student in Computer Science, 29 y/o, 16/03/2021). He further said that this new realization would affect his future usage of telehealth services.

As a comparison, the consensus in focus group #2 was not as critical towards personal data collection, even though there was a broad understanding to why some people might object to having their data displaced. Especially the Communicator, 40, did not show any doubts about sharing her personal data: "No, I'm never scared of digitalization. I test everything. But when I listen to my colleagues maybe I can understand that you might be scared." Another partaker in the same group answered this statement by assuming that "the region and the government are probably worse [than private telehealth firms] when it comes to cyber security" (Technical Salesman, 32 y/o, 18/03/2021), but added that the potential use of the personal data is more arbitrary in private telehealth firms compared to public traditional healthcare

services. His argument is grounded in his assumption that private telehealth firms have the main strategy mission to create profit. He said that misconduct of even a small amount of personal data points can be sensitive for the individual.

Telehealth firms have an advantage towards traditional healthcare businesses as they can scale, streamline, and make the service more accessible for more people over a greater geographical area. They can employ a large number of competent staff that are not bound by geographical barriers and serve a large number of patients that generate data points. Personal data is used to improve the efficiency and the service quality to make the service providers better and faster at providing healthcare service to the patients. Regardless of the opinions of the potential or active user, they can serve more patients and thus increase revenue and simultaneously decrease costs.

5.3.4. Telehealth: relieve the payers' increase in healthcare demand

The private telehealth firms and the public primary healthcare branches are in essence competitors; they compete on the number of registered patients and the number of visits or usage of the services. However, considering that the public healthcare providers finance a large portion of the private telehealth revenue based on national laws, the market is somewhat paradoxical. It has led to partnerships where the public healthcare sector outsources specific missions to the telehealth firms that they do not have the required resources for and expanded the interactions between the payer (Region Skåne) and the telehealth firms. This has been the case of simpler vaccination missions that have been a recurrent event each flu season and has been particularly seen in the COVID-19 crisis, where an interviewee from Region explained that their outsourcing decisions are based on their own lack of human resources. The procedure of deciding which firm they will outsource to is time-consuming and follows public procurement laws (Health and Healthcare Strategist of Primary Care, Region Skåne, 10/03/2021).

The public sector's inability to handle the influx of increased healthcare demand, even prior to the COVID-19 pandemic, and their collaboration with telehealth was needed to free up resources in the public healthcare firms. Telehealth firms were thus encouraged to take on simpler cases, such as providing vaccinations. The reason to why the public sector did not expand their own businesses was explained by the fear that it would lead to a squeeze effect: "If we were to vaccinate the whole population

in the [public] primary healthcare clinics it would be difficult [for the patient] to reach the [public] primary healthcare clinics for general issues" (Group Financial Controller, Region Skåne, 07/04/2021). He added that the telehealth firms take the easy cases so that the public healthcare clinics can save the resources they have and spend them on physical needs.

As was learned from the interview with the Head of Program - eHealth and Digitalization at Region Skåne, the patient groups that take up much time and physical resources are those with multiple illnesses and younger individuals that do not wish to book a time and instead "go straight to the emergency room for a minor symptoms that actually don't belong to the emergency room". The Group Financial Controller at Region Skåne claimed that "If the reimbursement is not too high, [private telehealth firms] are not hollowing out the economy for them that are in need of more advanced healthcare services" (Group financial controller, Region Skåne, 07/04/2021). On the other hand, the squeeze effect was emphasized by the CEO of Kry that claimed that the public sector's efforts to introduce their own telehealth branch was insufficient and incompatible with their current, physical, operations: "Often, if you apply a digital platform on an existing operation, you don't get more resources, you have still the same resource squeeze".

According to the Group Financial Controller at Region Skåne, the bottom line of Region Skåne is rather stable even after the influx of telehealth firms. In areas where the population growth stagnates or declines, they lose out on patients and thus revenue, but in areas with stable population growth the number of registered patients and the incoming revenue is unchanged. However, private telehealth firms choose to open and operate their facilities in dense populated cities which force the public sector to take care of the sparsely populated rural areas with minimum profitability. Thus, if the public healthcare sector cooperates with private telehealth firms the government can ensure that the increasing population of Sweden receives the healthcare necessary.

5.4. Digi-physical integrative value co-creation

Given the lengthy discussions in the interviews and focus groups, we learned the drivers and barriers that the telehealth firm faced. By further discussions about the motivations and attitudes that the four actor groups had towards healthcare in general and telehealth in particular, we also came to understand how value was co-created through both supply- and demand-side service exchange. A recurring topic during the interviews and focus groups was the combination of digital and physical healthcare service, 'digi-physical healthcare' as referred to by the CEO of Kry.

In both focus groups, it was early pointed out that telehealth was great for some needs but might be insufficient for other symptoms. In Focus Group #1, one member shared a hypothetical example if he would injure his foot "it would be more logical to go and see someone than show it on my phone [through a telehealth app]" (BSc Student in Web Analysis, 30 y/o, 16/03/2021). Another group member opposed the example and meant that it would be difficult "to walk to the foot doctor" (Ph.D. Student in Microbiology, 27 y/o, 16/03/2021). In Focus Group #2, the Technical Salesman, 32, thought that it "would feel a bit safer" to know that a telehealth service had a physical facility nearby to back up with a visit if needed. Both the Communicator, 40, and the BSc Student in Teaching Education, 37, agreed with the Technical Salesman whereas the BSc Student in Teaching Education explicitly added that if a telehealth service was backed up by "a real clinic" it would "feel safer".

In the telehealth firms that now open up physical facilities, the Nordic CEO of Kry explained his perspective and argued that telehealth should not be seen as solely digital. He thought that the idea of telehealth only being based on digital platforms is a "misconception" and thought that people that think so "have not understood anything [about telehealth]" (CEO, Kry, 12/03/2021). He emphasized that Kry wants to help patients and increase accessibility. He was a strong believer of not categorizing their healthcare service as 'telehealth' and that the discussion of digital or physical healthcare service was irrelevant, he proclaimed: "We are a healthcare provider. This is how our healthcare service looks like, end of story." (CEO, Kry, 12/03/2021).

One interviewee from the public healthcare sector shared his experience of digital and physical healthcare and had "always believed in integrated digital services" but that "the synchronization is missing". He

argued that the patients today have too many choices regarding healthcare services, that they receive contradicting guidelines, and "a lack of connection between all of the possible entries". He also shared his daughter's experience of telehealth in her position as an Emergency Room medical doctor at the Karolinska Hospital in Stockholm. According to her, she receives a lot of patients that have first tried telehealth services; however, the service did not cover the needs demanded and the patient had to end up at the hospital (Project Manager, Region Skåne, 11/03/2021).

For the case of Min Doktor, by opening up healthcare receptions and merging the digital and physical healthcare service processes they can cater even to non-digital patients. On the day of the interview with the Head of Business Analysis at Min Doktor, he told us that they just opened their 22nd physical clinic in Sweden. Their vision is to integrate digital and physical healthcare. They have strategically located all their clinics in connection to ICA Maxi supermarkets that have a lot of people in motion to exploit these opportunities to sustain a better cost structure. He continued by explaining that there are some cases that digital healthcare cannot cover and that the number of patients and the costs of each visit play a large role in Min Doktor's strategy of opening up physical clinics. He proposed that there could be different physical clinics that supplied different types of needs, depending on the seriousness of each case. A "clinic light" could meet the largest portion of patient demand, be more accessible, flexible, and much more cost-efficient (Head of Business Analysis, Min Doktor, 10/03/2021).

The development of telehealth firms is greatly influenced by the laws and regulations that determine the rate that the healthcare firms can charge the state and patients for both each individual visit and registration; the Swedish government has changed the amount offered as the 'foreign region remuneration' [utomlänsersättning] several times. Based to the history of everchanging legal regulations, one interviewee from the public healthcare sector shared his theory on why telehealth firms recently have ventured offline:

> *Well, if you ask me, this type of [digital] healthcare could completely flood the system and hollow out [the economy]. Then, maybe, the parliament would get a large opposition and end it. Maybe they decide to prohibit them from charging the public*

sector if they don't have the possibility to physically accept patients. They would have created a legislation. And to avoid being outcompeted on the market they have opened up and shown that: 'We can also offer physical [healthcare], you don't have to legislate. We meet you halfway.' (Group Financial Controller, Region Skåne, 07/04/2021)

This theory resonates with a statement from an interviewee in the private sector, he mentioned that the "regulators in Sweden are very preoccupied with physical buildings, which is very old-fashioned" (CEO, Kry, 12/03/2021). That being said, there is no formal requirement to have a physical healthcare establishment in order to receive accreditation from the state. According to the Group Financial Controller at Region Skåne, the strategy of engaging in a digi-physical strategy can be seen as building moats and future-proofing the telehealth market. He viewed the launch of physical clinics as a "demonstration" by the telehealth firms to show that they are a force to account for and believed that it is a display of "saving-business-behavior" (Group Financial Controller, Region Skåne, 07/04/2021).

There was also a similar narrative from several of the interviewees from the private telehealth sector that the public healthcare sector should engage in what they do best, i.e., physical healthcare, and not attempt to engage in digital healthcare implementation. That would allow the telehealth firms to stick to what they do best, i.e., digital healthcare. One interviewee had the perception that the public sector "do not know how to integrate digital healthcare in the existing system without creating these frictions" (Head of Innovation and Partnerships, Min Doktor, 09/03/2021). The CEO of Kry agreed, and stated that if you would "apply digital platforms on top of an existing establishment nothing happens"; instead, he advocated for a thorough implementation structure that should permeate the whole business.

6. Discussion

This study aims to gain a deeper understanding of the telehealth value proposition and its ecosystem. The purpose of this investigation is to explore if there is any potential value co-creation in the interactions between the involved telehealth actors. To do this, we apply the S-D logic and attempt to answer the research question:

How do the actors in a telehealth ecosystem interact with each other from a service-dominant logic perspective?

The coding of the empirical findings led to several interesting insights that will be discussed in this chapter. The emerged theoretical framework has helped us to explain the findings and its implications. This framework model is first presented below with the ambition to guide and enlighten the readers of our reasoning. Secondly, the four touchpoints will be inspected and discussed individually using the S-D logic where main challenges will be highlighted. Thirdly, the encompassing joint sphere of multi-actor interaction will be thoroughly described and solutions for all actors will be discussed. Fourthly, the S-D logic is problematized and minor alterations are suggested.

6.1. Theoretical framework

The theoretical framework visually displays the interactions between the four actors that co-create value in the telehealth ecosystem. Four touchpoints of value co-creation have been discovered, each of which will be closely examined in this chapter. Furthermore, each touchpoint inherits challenges for value to be co-created; these will also be thoroughly discussed and potential solutions and preventions will be offered. Centered is the proposed comprehensive joint sphere where all actors meet and co-create value. This framework may also be used as a means of transferability to other telehealth firms, and even born-digital service firms with similar ecosystem settings.

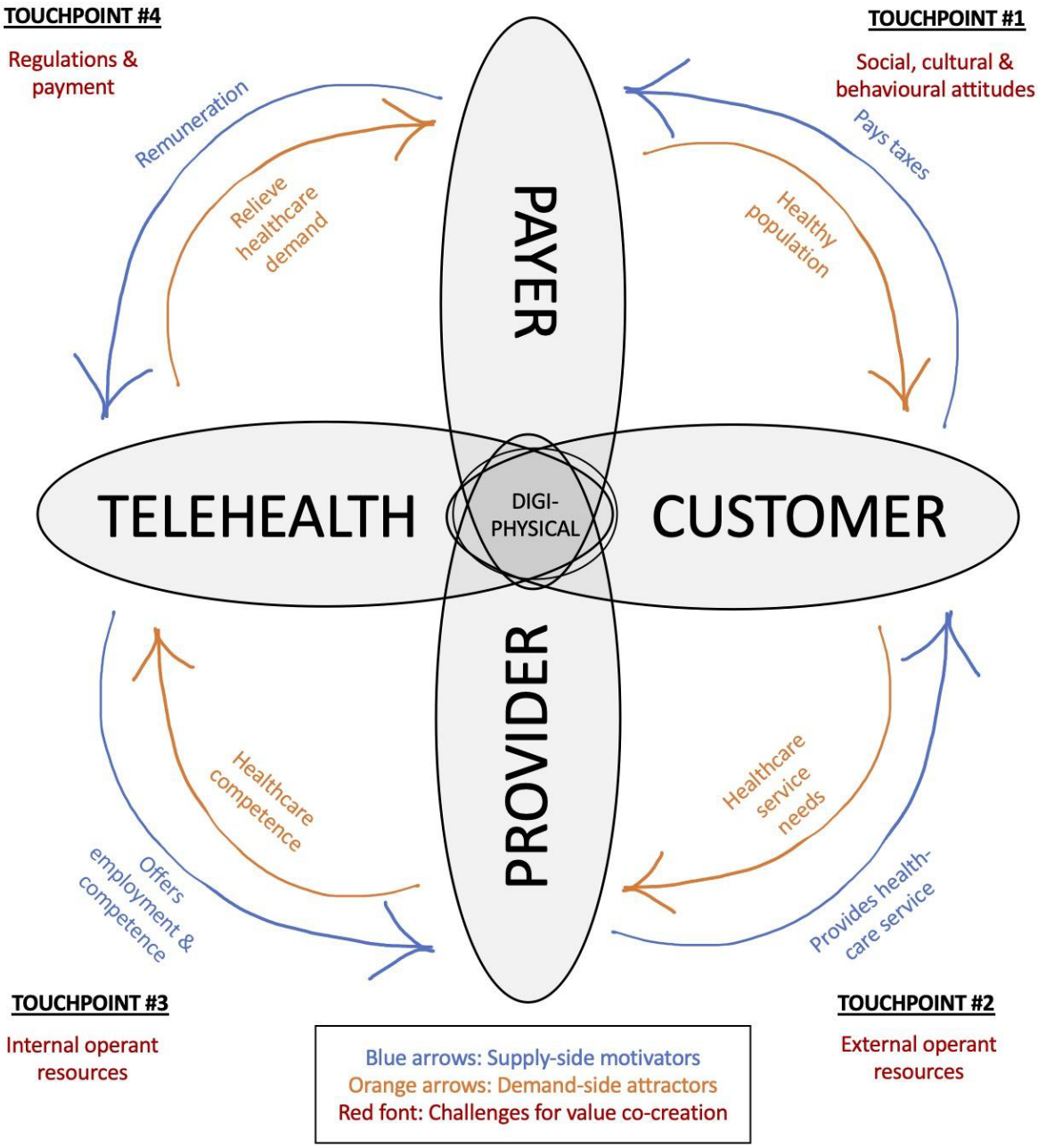

Figure 1: Theoretical framework of value co-creation in a telehealth ecosystem

6.2. Interactions of telehealth actors

To understand how telehealth firms strategize in Sweden, an understanding of their value creation is needed. In accordance with the S-D logic "only the customer can determine value" (Lusch & Vargo, 2006, p. 49). In the telehealth ecosystem, there are several constellations and many have the role of customer. Telehealth firms are themselves customers to the service providers as they purchase an increased supply of healthcare competence. The public sector is a customer as they both outsource activities to telehealth and collaborate with them. The patient is the customer of the service provider but pays the public sector, the 'payer'. Following the S-D logic, each service exchange implies value co-creation that can only be determined by the customer, the purchaser. The empirical data findings have demonstrated many different service exchanges in the loop of value co-creation between the actors of payers, customers, service providers, and telehealth firms. The interactions found between each actor group will be scrutinized to find gaps and challenges for value to be co-created. If the challenges can be solved and gaps can be filled, it will solidify the telehealth ecosystem. In that case, according to S-D logic, all the actors will be better off, telehealth firms included.

6.2.1. Touchpoint #1: Payers – Customers

Sweden is one of the countries who has the highest tax rate, historically. There is an expectation that the public sector offers quality services such as healthcare and education. Therefore, Region Skåne has the explicit responsibility towards taxpayers to deliver healthcare that is equally available and that is provided with "safety, respect, integrity, and accessibility" (Region Skåne, 2021b). The empirical data showed that healthcare demand increases due to population growth, mental illness, and lifestyle diseases. Simultaneously, the healthcare costs for Region Skåne have increased by seven to eight percent

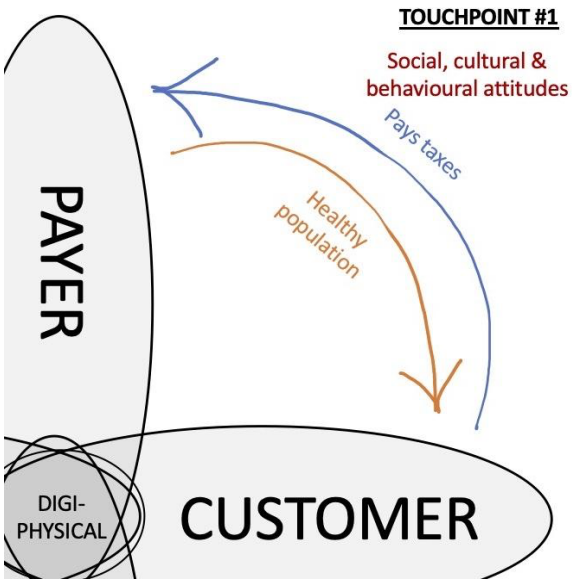

Figure 2: Touchpoint #1

annually in the last decade. Taking this into consideration, healthcare has a need for improving accessibility so that customers can seek help easier and healthcare can be delivered more efficiently.

The public sector has been working proactively and imposing a responsibility on customers, with the assistance of healthcare providers, for them to engage in self-care at home. It is important that correct diagnosis and treatment are given before the patients' symptoms worsen. This is because the treatments and medicines needed when illnesses become more serious, are often more expensive. Through digitalization of the healthcare sector, the hindrance of seeking healthcare can be reduced which offers a more accessible primary care for the population. It can potentially lead to an improvement in terms of cost of primary care as well as productivity and resource allocation.

Furthermore, the increased demand in healthcare leaves Region Skåne with a steady flow of patients and revenue. Telehealth helps the public sector to relieve some of the demand and are monetarily incentivized to take on easier cases; however, they might struggle to live up to the foundational premises of being equal for all customers. Regardless, the beneficiary is the payer that needs a healthy population, a goal that is achieved by collaborating with telehealth firms.

Challenges for value co-creation: Social, cultural, and behavioral attitude

Sanders et al. (2012) and Agarwal et al. (2010) found that social, cultural, and behavioral attitude are the motivations behind the patient resistance for telehealth. In Sweden, there is a tradition that healthcare has been public. Until 15 years ago, private healthcare providers started to receive remuneration from regions. However, the mindset is still affecting some of the citizens who prefer public driven healthcare. In the focus groups, there are both types of opinions but the majority choose their healthcare providers based on accessibility such as locations, how easy it is to book an physical appointment, and the perceived costs of private telehealth services.

Another issue is the criticism private telehealth firms have been receiving from part of the public sector and citizens. It is based on the problematic issue of 'foreign region remuneration' [utomlänsersättning]. Some think that these private players are 'cherry picking' patients with easier symptoms to maximize their profit so that the public healthcare is left with less financial resources and the costly patients with

complex diseases. However, the fact is that the very first telehealth player tried to set up a partnership with one of the regions but was turned down. Furthermore, the private firms are incentivized by the public sector to take on simpler case-symptoms. The outcome of an economic consequence was followed by this traditional mindset of keeping public and private healthcare separately instead of building partnership.

When it comes to telehealth, customers perceive telehealth as undependable and only trust them with smaller cases due to a fear of them missing out important details when interacting digitally. Furthermore, many raised concerns about the relationship part with the healthcare service provider, especially when symptoms are more complicated. Witte et al. (2020) found a tension in ‘data prosumer’ and customers’ lack of direct value appropriation as a result of producing data. There is a relationship between face-to-face contact and trust level. The focus groups mentioned cyber security issues such as uploading personal photos on telehealth platforms to show healthcare service providers their symptoms as a reason to not use digital healthcare services. They further believed that the private sector would be better at handling private data compared to the public sector. These aforementioned perceptions can potentially hinder people seeking the fastest available healthcare choices which becomes an obstacle for reaching the payer’s goal of a healthy population. The low trustworthiness for telehealth can be improved with the knowledge that they are backed up by physical clinics that they can resort to if there is need; it “feels safer”.

6.2.2. Touchpoint #2: Customers – Providers

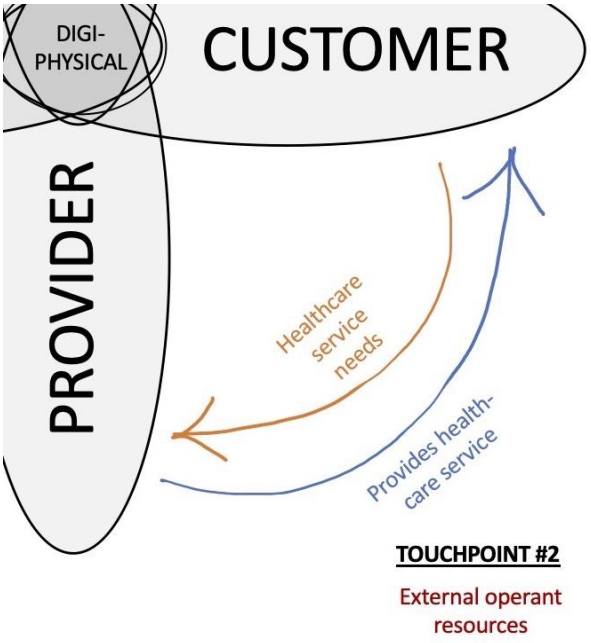

Figure 3: Touchpoint #2

In order for value to be realized by the beneficiary, the patient (i.e., the customer), the two parties that are engaged in the service exchange must have their skills and knowledge matched (Möller et al., 2008). Thus, customers and providers need to have equal operant resources for the value of the co-created service to be determined by the customers (Lusch & Vargo, 2006). Likewise, the service providers, (i.e., the nurses and doctors) need the customers to properly participate in the service exchange process to be able to meet their healthcare service needs. Strategically, the operant resources are a necessity for the service to be delivered as intended, meaning that the customer must have the skills and knowledge to receive, appreciate, and value the service offered by the provider (see Appendix D for FP4: "Operant resources are the fundamental source of strategic benefit." (Vargo & Lusch, 2016, p. 8)).

Both groups of customers agreed upon the idea that telehealth was better suited for simpler cases and that physical clinics were still needed for more complicated cases. Despite the media critique that telehealth firms have received for accepting these 'easier cases', the data findings showed evidence that it is in the public sector's interest to incentivize private telehealth firms to do so. It helps the physical healthcare clinics to spend more resources on complicated issues where digital solutions are insufficient.

However, as found in the empirical data, not all cases can be solved using self-care and telehealth. Telehealth, solely, can solve between 65 and 75 percent of all cases while the remaining cases, often more complicated, need further assistance (Health and healthcare strategist, Region Skåne, 11/03/2021; CEO, Kry, 12/03/2021). Whereas the S-D logic states that all involved actors need to be better off for value to be co-created, digital-only telehealth seems to not have this realized. Some interviewees further

believed that there is a lack of synchronization between digital and physical. In this case, the customer is the beneficiary in this interaction as it is the actor that receives the service and determines the value. This is in line with FP6/axiom2 that reads "Value is co-created by multiple actors, always including the beneficiary" (Vargo & Lusch, 2016, p. 8).

Challenges for value to be co-created: Lack of external operant resources

Standing et al. (2018) and Möller et al. (2008) found that one of the biggest reasons behind the difficulties, for provider-driven innovation in a company-centric view, in extracting value from customers is lack of operant resources. These resources are their knowledge and skills in adapting the new service offering. In the case of telehealth, the most challenging part is the requirement of technological competence. This is in relation to both the customers and the service providers. If the customers do not have the skills and knowledge required to receive the services, no value co-creation can be realized. This is especially true with novel and technical innovation, such as telehealth.

Möller et al. (2008) emphasized that success lies on the assistance that service providers give to clients in co-creating value, as well as providers' market sensing capabilities. Both public and private telehealth players meant that they offer education to help their clients in mastering the transition from traditional to digital healthcare systems. So far, no one has expressed any concerns and they meant that it has been working smoothly. However, if their technological competences greatly surpass the service recipients the communication between the two is at risk; thus, the value co-creation process is also at risk.

Sanders et al. (2012) found that elderly patients who traditionally have been seen as beneficiaries of telehealth use, struggled to adapt to the new technology. This point might be true, however, from our empirical data, we have found that there are technological insecure individuals across every age group. It is not solely an age problem, it is also because of other factors such as personality traits and socioeconomic vulnerability. The focus groups showed some evidence that the current seniors might struggle to use telehealth services as intended. Except from the technological difficulties, the customers have noted the problem of explicitly explaining their symptoms to a professional healthcare provider. This issue is particularly problematic when it regards more complicated case-symptoms. These customers do not partake in neither the service provided nor the value co-creation. Another important misconception

in the customer group were the costs to utilize telehealth services. Not one participant in either focus groups was aware of the pricing structure and everybody had the preconception of private telehealth services being expensive. When we explained the pricing setting for them, most seemed to perceive the service as objectively affordable.

6.2.3. Touchpoint #3: Providers – Telehealth

Telehealth firms are purchasing competence in terms of skilled service providers as they hire nurses and doctors. In return, they provide employment, a decent work space, and telehealth knowledge to the service providers. One of the main value propositions of telehealth is to deliver accessible healthcare through digital service offerings. For telehealth to be able to fulfil their promise, they need a large pool of high-quality service providers. As was pointed out by both Standing et al. (2018) and the CEO of Kry, this large pool of human resources is needed for telehealth to be accessible and serve incoming cases efficiently as advertised. Without a great number of employees, accessibility, as one of the most important value propositions of telehealth, would fail. Standardization, digitalization, and process iteration is also actively used as quality management measures that in turn is aimed towards an improvement of efficiency. Telehealth can attract competent workers by being modern, flexible, and offering high salaries.

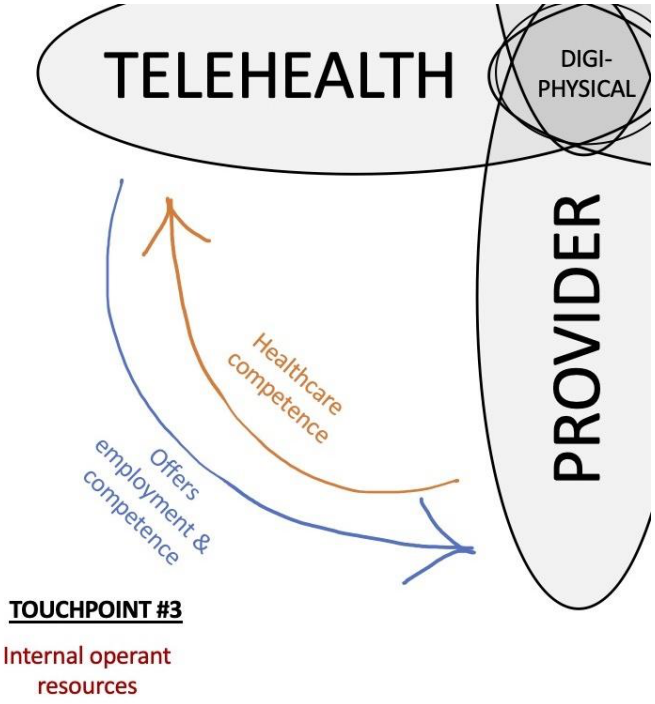

Figure 4: Touchpoint #3

It can furthermore be assumed that the employees in question have a basic technological competence. Those that are 'forced' to join telehealth firms, for example through mergers and acquisitions, are trained in the required competences. Telehealth and its digital interactions also enables more employees to be active in the workforce even if they are impaired or restrained, leading to better use of human resources.

The human resources and the professional competencies is what transfers the proposed value from by the firm to the beneficiary through service exchange. Applying FP9, it implies a "network structure" is necessary for value to be co-created (Vargo & Lusch, 2016, p. 6) and emphasizes the importance of a large resources pool for telehealth firms to co-create value (see Appendix D for FP9/axiom3 "All social and economic actors are resource integrators" (Vargo & Lusch, 2016, p. 8)).

The bureaucratic public sector struggles to keep up with the private telehealth agile movement. Through the public Region Skåne's own launch of a telehealth platform, they now try to reclaim some of the dormant stigma. Telehealth firms' largest competitor when competing for talents is the public healthcare sector. It seems to be relatively easy for telehealth to outcompete public healthcare, as interviewees from both sides agree that healthcare providers leave the public sector to join the private telehealth firms. The salaries and working conditions at telehealth firms are perceived as better than at the public sector. There is also a more forward-thinking and agile corporate culture in telehealth firms; on the contrary, the public healthcare sector is perceived as "dusty". Presuming that the majority of professionals join a telehealth firm out of free will, it can be assumed that a certain type of person is attracted to agility, flexibility, and higher income. As the provider receives these perks it can be argued that the provider group, in this setting, is the beneficiary.

Challenges for value to be co-created: Lack of internal operant resources

Telehealth firms are dependent on a large pool of employees for them to provide the promised value proposition of high levels of accessibility. It is therefore critical for telehealth firms to sustain and develop their scale of employees which is done through continuing to attract competent service providers. However, when studying the nuances from the empirical data, there are potential hindrances to the attractiveness of working in telehealth. The Health and Healthcare Strategist of Primary Care at Region Skåne perceived the nurses and doctors that choose to join telehealth firms as driven by solely monetary incentives and occupying a different set of values compared to the same professionals that seek employment at the public sector.

Solely digital telehealth service processes are looked down upon by some of the traditional healthcare professionals as they cannot solve all cases, leading to some of the patients with unsolved symptoms

eventually ending up at the public's physical clinics. This is further seen as being costly for the public sector. The telehealth coverage by the Swedish media is also filled with stigma attached to digital healthcare, mainly regarding its governmental remunerations, its preference towards 'easier' cases, their creation of healthcare demand, and the service providers that chose to work there (see e.g., Järhult, 2019; Lennen Merckx, 2018). There is a friction between the publicly and privately employed professionals, where the former seems to be disapproving of the latter and blaming them for hollowing out the economy of their own, public, workplace (Cederberg, 2019). These stigma and disagreements creates a reputational threat for the telehealth firms and has the potential to do more harm in the future. If the negative reputation is widely spread and accepted as truth, telehealth firms' internal identity of being an attractive employer can be flawed. Even worse, this can lead to a decrease in professionals seeking employment at telehealth, which subsequently would make them lose their advantageous scale and high accessibility.

The public sector also has a reputational challenge of being seen as sluggish, bureaucratic, and "dusty". They are also vulnerable to the threat of losing competent employees that are more attracted to telehealth. Their lack of seamless healthcare flow, low efficiency, and geographically hindered accessibility has made them earn their stigma of being old-fashioned. Several interviewees shared their insights of how easy it was for telehealth firms to offer a workplace more attractive than the public.

6.2.4. Touchpoint #4: Telehealth – Payers

Telehealth is a new service innovation which is designed to increase both accessibility and efficiency for the healthcare system. This is especially important when healthcare demand is increasing due to the aging population, while the expansion of resources is however limited.

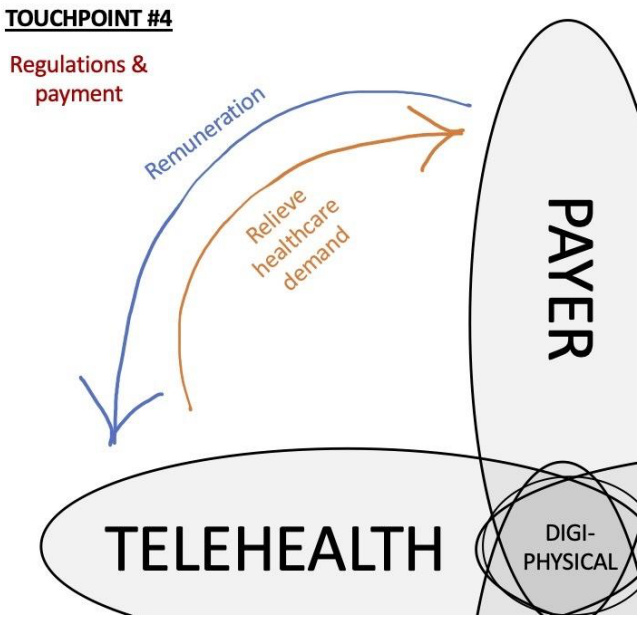

Figure 5: Touchpoint #4

The private sector saw this worsening phenomenon and came up with this new business proposition, telehealth, which can potentially improve the deficiency of accessibility and productivity in the healthcare system. In general, telehealth firms are prone to handle easier cases with lighter symptoms which is approximately 65 to 75 percent of the total demand. The rest need further input. Private telehealth firms focus their target segment on clients aged between 18 to 55 years old. This group is seen as early adopters, i.e., 'champions' (J. Ross et al., 2016), and also as the future client base that may accept digital healthcare as a norm. If they can normalize telehealth services for particularly the middle-aged segment, they will be capable of utilizing telehealth once they grow older and take on the role as seniors customers. This long-term strategic thinking would hypothetically release the full potential for telehealth: to not only cater for a middle-aged population living in cities, but also reach rural areas that house an older segment.

The telehealth business model is that they can relieve part of the healthcare demand for the nation in exchange for remuneration from the public sector (21 regions). The public sector accepts this because it shows that there is a need for this service offering but they soon realized that the situation is not sustainable since the remuneration sum is growing rapidly. The private telehealth firms are highly dependent on the public remuneration since it represents approximately 80 percent of their revenue.

Nevertheless, since 2016, the remuneration has been reduced from 2200 SEK to 500 SEK per case. This appears to be a potential risk for the profitability for the private telehealth sector. The public driven healthcare mindset, which is mentioned in touchpoint #1, is one of the factors that lead to this conflict in touchpoint #4. It creates a competitive attitude instead of collaboration. The telehealth actors determine the sufficiency of the remuneration which affects their business proposition that is essential for relieving the payer's healthcare demand. Therefore, the telehealth actos is the beneficiary in this touchpoint.

Challenge for value co-creation: Regulations and payment

Telehealth firms are dependent on public remunerations based on the number of customers and visits – 80 percent of their income stem from public remunerations. Even though some customers and interviewees from Region Skåne believe that telehealth is hollowing out public funds and imposing monetary losses for the public healthcare sector, the population growth and increased demand proves otherwise. Fürstenau et al. (2018) warned that too strict health care policies, market regulations, and laws can be potential threats for the development of a telehealth platform. In this case, 'foreign region remuneration' [utomlänsersättning] has seen a steady decrease since 2016, mostly affecting private telehealth players (and not public healthcare).

Private telehealth firms have been criticized for only taking easier cases. In fact, this is actually incentivized by the public sector since there is a need for someone to take easy cases that do not take resources from the public sector. The underlying problem is that the healthcare sector in Sweden is extremely dependent on politics which means that regulations are often set by politicians and economists. When it comes to telehealth, the conflict of 'taking easier cases' could have been avoided if medical professionals are actively involved in the process of setting up guidelines. The guidelines can motivate specifically what cases are suitable for telehealth and why.

The public healthcare sector is facing a problem of people having difficulties in understanding the correct procedure of seeking healthcare help. One example is that some people go directly to the emergency room when physical clinics are not available. The problem is that once they are at the emergency, healthcare providers have to offer help, no matter if it is serious or not. This appears to be extremely costly. Today's remuneration per case, compared to 2016, has had a 77 percent decrease. Opening

physical clinics require burdensome operand and operant resources for a born-digital telehealth firm. However, due to the fear in telehealth of further decreased remunerations and new regulations, telehealth firms are starting to look into opening physical facilities to proactively combat these threats.

6.3. Digi-physical integration

In the previous discussion chapters, we have laid out the four current main interactions, denoted as touchpoints, that enable telehealth businesses to operate. Each touchpoint has an ideal certain value co-creation process, but in reality each process faces a challenge for value to be co-created. These challenges are summarized in the table below:

Table 1: *Summarized challenges for value to be co-created*

Touchpoint	Overarching challenge	Challenge implications
#1	Social, cultural, and behavioral attitude	• Customer perception of private vs public healthcare • Customer trustworthiness for telehealth
#2	Lack of external operant resources	• Not being able to solve all cases digitally • Customers and provides having different sets of operant resources
#3	Lack of internal operant resources	• Public sector has the stigma of being ‘dusty’ • Private telehealth has the stigma of not being ‘real’ • If they lose employees they lose scale, efficiency, and accessibility
#4	Payment and regulation	• Threat of decrease/elimination of remuneration may disturb the telehealth business model • Unpredictable regulations

According to S-D logic, value should be co-created between actors for all actors to be better off (Vargo & Lusch, 2016). The above challenges hinder telehealth to achieve their proposed value proposition. However, we found that digi-physical integration can be a potential strategy for telehealth firms to enhance their value proposition. In the bigger picture, this could potentially benefit all actors involved and improve the situation for the healthcare industry in Sweden. Below we will suggest how digi-physical integration is the joint sphere where all actors meet and can confront the current and potential challenges.

6.3.1. Payers

The aim of telehealth is to improve accessibility and productivity of the healthcare system in Sweden. If people can receive healthcare in time, the cost of treatment and medicine will be lower. Ideally, telehealth can fulfill the interaction in touchpoint #1 which can free up more resources, tax money can be better used, and the population will have better health. However, digital healthcare can only cover approximately 65 to 75 percent of all cases. In other words, a patient that seeks digital healthcare in a telehealth firm and is in need of further, physical assistance will have to contact a physical clinic. This unsynchronized service offering will thereby disrupt the 'healthcare flow' [vårdflöde], resulting in additional effort for the patients in order to solve their health issues.

In addition, a vision of the government is to deliver equal healthcare to all citizens of Sweden. Since digital healthcare excludes part of the population due to, for instance, technological difficulties, disabilities, or socioeconomic vulnerability, an integrated digi-physical healthcare service would mitigate this potential inequality. Additionally, the government has an incentive to keep the population healthy since an active labour force is an important source of income tax that brings revenue to the state, hence to the public healthcare sector.

6.3.2. Customers

The literature gave us an idea of customers that struggled to adapt to telehealth services due to lack of technological competence, mostly senior citizens. This group was also seen as mistrusting digital healthcare services (Sanders et al., 2012). Our empirical data findings somewhat contradicts this statement as it was found that there was lack of competence, denoted as operant resources, and mistrusts towards the telehealth services in *all* age groups, not only for the elderly. Instead of categorising the

target group into age, we suggest a categorization based on resistance. Our findings show that there are two main types of resistance, *trustworthiness towards telehealth* and *lack of operant resources*. We argue that a digi-physical integration would alleviate these resistances and attract more customers. According to Hong et al. (2019), different forms of service attract different users. Therefore, identifying the influential factors can help service firms to navigate and focus on different services and their target customers.

The first trustworthiness issue lies in the interaction with service providers, condemning the digital interaction available in telehealth services less reliable compared to face-to-face healthcare. One reason is that telehealth takes on easier cases, making people concerned for the providers missing important information when being digitally examined. Another reason is the external operant resources of customers regarding communicating skills, especially when it comes to more complicated symptoms. Furthermore, the handling of personal data and cyber security was expressed as another factor of mistrust to digital services and a reason for preferring physical healthcare.

The second trust issue relates to the customers' perception of private firms as healthcare operators. Firms that deliver healthcare in a physical facility and reach a certain threshold set by the public sector are rewarded as being accredited. They are then seen as equally competent as a public healthcare clinic. A digi-physical combination could ensure born-digital telehealth firms to enhance their credibility by earning the status of accreditation. When it comes to the public versus private mindset, it is important for private firms to educate the customer regarding if they are accredited by the public sector, for example Region Skåne. If they would communicate explicitly with the customer so that they understand these private players operate under the same regulations as the public healthcare, it could increase the trustworthiness of private healthcare services.

The third issue of trustworthiness for telehealth regards the service quality. In this case, people with more complicated symptoms do not fully trust telehealth. Based on that, telehealth services need to consider being backed up by physical facilities as well so that customers feel more secure. This appears to boost their confidence in seeking help from telehealth. If the customer's problem cannot be solved by the digital

service offering, there is a well-connected physical facility where they can get further help. The digital and physical integration can improve the 'flow of healthcare' [vårdflöde].

The other type of resistance is the lack of operant resources. The empirical data findings and the previously scrutinized literature show evidence of healthcare solely being offered by digital means in terms of telehealth might be insufficient as there always will be members of the society, thus potential customers, that lack the operant resources to engage in the online service. For the service to reach its full potential, the technological capabilities of the service provider and service receiver must be matched. If these groups would acquire the operant resources to be able to receive the service provided by telehealth, both customers and service providers would be better off as resources would be freed up.

For telehealth to be useful for customers with complicated needs, unabilities to engage in self-care, or technical illiteracy, online-only telehealth can be insufficient. These 'invisible citizens' should not be disregarded; following the logic of Go Jefferies et al. (2021) they should be focused on to co-created sustained value through the potential to deliver novel service offerings. These invisible citizens can be reached through physical service provision. To attract more customers to telehealth services can free up scarce human and physical resources, both payers and telehealth firms have an incentive to attract all customers to telehealth firms.

6.3.3. Providers

The healthcare professionals are the most important resources of any healthcare services. Reputational damage can change the perception of both potential and current employees and make them adopt an image of their workplace being unattractive or inadequate. This is true for both the private telehealth firms and the public healthcare sector that each have been stigmatized, yet for divergent reasons. To increase employee retention, the employers need to minimize the reputational damage that already exists, as well as decrease the risks of potential unfavourable image developments. Therefore, we argue that both private telehealth firms and public healthcare sectors need to engage in digi-physical integrations.

Telehealth firms should build physical clinics that tangalize their operations and allow them to accept a wider customer base. It would prove that they are aware of their shortcomings and take actions to cover

them, for example being able to solve all cases, not only the minor issues. Telehealth's physical clinics would also bridge the misconceptions that telehealth professionals are any different from physical healthcare professionals, hopefully eliminating stigma and alienation and make telehealth workers feel proud of their workplace. The public healthcare sector should enhance their own telehealth platform, improving the integration between the physical and digital, and allow more employees to try to work digitally. Hopefully, this would alter the negative perception that employees have of the physical healthcare sector of not developing themselves enough, with the aim of not losing professionals to the telehealth firms.

6.3.4. Telehealth

It has been seen that laws and regulations regarding telehealth services are unpredictable. Based on the trend of decreasing remuneration from the public sector, a way for private telehealth players to sustain their business is to act proactively. Opening physical clinics can function as moats against future legislation but also demonstrate credibility. Some players have even started to implement the vision of 'digital if possible and physical if needed'. On one hand, people can get a primary assessment of their symptoms through telehealth, which has higher accessibility compared to physical clinics. On the other hand, this can show that they are capable of handling more difficult cases as well as to offer an integrated healthcare service.

Hong et al. (2019) suggest that telehealth organizations should adopt the strategy of focusing more on personalization with special focus on targeted groups. They argue that organizations can build an environment that fits targeted groups' perception of risk, benefit, and trust as it has a positive impact on continued adoption intention. This is further in line with Vargo and Lusch's (2016) S-D logic that entails that value is contextual, different customers and different settings require different service offerings. Born-digital telehealth firms can choose to engage in building up different types of physical facilities. Some choose to develop traditional health clinics with both doctors and nurses while others may choose to develop physical facilities focusing on some specific tasks such as vaccination. For born-digital telehealth firms to build physical clinics is a practical way to create awareness with the purpose of normalizing telehealth services in the near future.

6.3.5. Summary

Evidently, both private telehealth and public healthcare sectors have the same goal when it comes to an optimal 'healthcare flow' [vårdflöde] and that is 'digital if possible and physical if needed'. To achieve this goal, the born-digital private telehealth sector may need to consider developing physical facilities that integrate with their digital service offerings. On the opposite side, the public sector, who have had their focus on physical facilities, need to further develop their digital services. Both private and public healthcare services that attempt to integrate digital with physical service processes need to allow their service providers to be more involved in the service process development.

Furthermore, scale is of utmost importance for telehealth operations. Currently, different regions in Sweden are attempting to develop their own digital healthcare service platform which require both human and financial resources. However, considering that the population in Sweden is only ten million people, having numerous telehealth platforms due to the decentralized public healthcare structure is inefficient and could fail to reach sufficient scale. This also goes against their mission of 'better use of the tax funds'.

To sum up, if telehealth services were backed-up by physical clinics, they could handle the majority of the cases digitally, *customers* would experience shorter waiting lines, and the digitally excluded customers – together with the customers with complicated cases – would be able to get physical aid and also be eased into the world of digital healthcare. The *telehealth firms* can make use of their national scale and thus enhance accessibility, efficiency, and service quality by exploiting patient data that easily can flow in their born-digital organization. The possibility of using the collected data may bring advantages in establishing physical facilities in terms of quality and productivity of their service offering. *Service providers* would enjoy increased efficiency that can be utilized to improve service quality. Telehealth firms can help more customers and thus increase their scale, accessibility, and revenue. Lastly, the *payers*, the public sector, will have their human and physical resources freed up. The excess resources can then be spent on cases that require physical care and in the long term would decrease the payers costs. Thus, a digi-physical integration may benefit all actors in the telehealth ecosystem by mitigating the challenges in each touchpoint and thereby reach value co-creation in all interactions.

6.4. Theory problematization

After the empirical data findings have been discussed, we revisit the literature that was presented in section 3 and found that some of the conclusions differ from our research settings. Go Jefferies et al. (2021) question who the actual beneficiary is if not all actors are equally benefited as proposed by the S-D logic. Furthermore, this proposition deviates from the findings of Gadeikienė et al. (2021) that concluded that patients were the greatest beneficiary in telehealth settings, this is in line with FP10/axiom4 that states that "Value is always uniquely and phenomenologically determined by the beneficiary" (Vargo & Lusch, 2016, p. 8). This implies that the patient is the foremost value determinant of the service exchanged. However, in our research paper, the service providers are just as important for the service that telehealth proposes. The stigma of telehealth professionals described in section 6.2.3. affect the necessary scale of telehealth firms. Therefore, we argue that the services providers, in the Swedish telehealth setting, are just as important for value determination as the patients.

The paradigm of S-D logic has proved to fulfil its purpose of uncovering value co-creation processes in all four touchpoints as well as exposing a joint sphere where all actors meet. Relying on the statement of value-in-use that "posits that only the customer can determine value; this occurs as the customer uses the offerings of the service provider" (Lusch & Vargo, 2006, p. 49). Hence, the theory implies that the beneficiary is a necessary component as that is the actor that determines the value of the value offering. However, we have now discovered that each actor is its own beneficiary in each interaction. Thus, depending on the interaction of focus there is always an actor that functions as a service recipient. FP6/axiom2 states that "Value is co-created by multiple actors, always including the beneficiary" (Vargo & Lusch, 2016, p. 8). Importantly it implies that there is only one singular beneficiary. Likewise, FP10/axiom4 states that "Value is always uniquely and phenomenologically determined by the beneficiary" (Vargo & Lusch, 2016, p. 8); further emphasizing that the beneficiary is of a singular character.

We propose that all actors involved in the telehealth ecosystem are beneficiaries in each touchpoint with its own incentives. In touchpoint #1, the beneficiary is the payer that determines the value of having a healthy population by collaborating with telehealth firms. In touchpoint #2, the beneficiary is the

customer that determines the value of receiving healthcare service by the service provider that is employed by telehealth firms. In touchpoint #3, the beneficiary is the service provider that earns employment from the telehealth firm, the service providers need to feel a sense of pride to sustain their medical professional status. Lastly, in touchpoint #4, the beneficiary is the telehealth firm that determines the value of the remuneration. If it is insufficient, telehealth will break the ecosystem and exit the value co-creation. This line of thought is in line with the argument made by Fürstenau, Auschra, Klein, et al. (2018), namely that too strict law and regulations hinder the development of telehealth. This would affect the payer negatively since telehealth has the potential of relieving the healthcare demand, as well as the other ecosystem actors. All beneficiaries should receive incentives to engage in the telehealth ecosystem and interact with each other; these relationships need to be nourished to make all actors better off. To implement a digi-physical integration, telehealth firms could potentially solve the aforementioned value co-creation challenges, attract more diverse patients, attain their needs with higher accessibility and efficiency, and thereby assist in improving the Swedish healthcare sector.

7. Conclusion

In the Swedish healthcare system, a novel service innovation has been developed to cope with increased healthcare demand due to an aging population and population growth that has led to resource scarcity. The deficiency of accessibility and productivity urge the digitalization of the healthcare system, as a business opportunity when it comes to healthcare services in Sweden. It pushed private firms to develop a new service offering with the mission of revolutionizing the accessibility of healthcare services in Sweden, denoted as telehealth.

The purpose of this paper is to gain a deeper understanding of telehealth and how the involved actors interact with each other from a S-D logic perspective. First, we discovered four main actors: payer, customer, provider, and telehealth. We then applied the S-D logic and looked at how actors interact in the ecosystem of telehealth and found four touchpoints and clashes between them due to different reasons. These clashes are seen as challenges which can potentially hinder the process of value co-creation between the actors that is necessary for telehealth to deliver their value proposition. From the empirical data finding, a theoretical framework emerged that can be used as a means of transferability to similar settings.

The main findings of our thesis are three-fold. Firstly, we have uncovered four challenges in each of the four touchpoints that can prevent value from being co-created, these are 1) social, cultural, and behavioural attitudes, 2) external operant resources, 3) internal operant resources, and 4) regulations and payments. Secondly, in the joint sphere of the theoretical framework, value is co-created by all actors. We therefore propose a digi-physical integration strategy to tackle the aforementioned challenges and can thus enhance the value co-creation processes in the telehealth ecosystem. Thirdly, after investigating the phenomenon at scope, we have examined the S-D logic and its reasoning and have come to the conclusion that 1) the client-centric view should be revised in the Swedish telehealth ecosystem since the service providers (doctor and nurse) are just as important as the client (i.e., the patient), and 2) all actors are beneficiaries, hence, all actors can determine the value for the service offering. FP6 implies that there is only a singular beneficiary, our research posits that all actors are beneficiaries, thus

challenging the idea that one single beneficiary determines the service value. For telehealth to reach its full potential, all actors need to be accounted for and included in the proposed value proposition.

Limitation

Although we have gone to great lengths to create a coherent and valid research paper, some limitations are realized. Due to the COVID-19 pandemic, the situation posed constraints in the data collection. Regarding the sample of professional interviewees, we were unable to get in direct contact with certain service providers. The reasons were that the healthcare sector was at capacity as well as confidentiality policies; the service providers did not have time or the approval to join for an interview. Instead, we got in contact with managers that have insights in the everyday practices. Additionally, we are aware of the lack of an older segmented focus group, aged 51 and above, which could have brought supplementary data to this research. However, because of the state restrictions, a non-biased sample group proved to be difficult to gather.

Future research

Considering the aim of this research has been to provide a meso-level explanation of the interactions that makes a telehealth firm co-create value, it allows for much future research. For instance, micro-level examination of each of the four touchpoints could potentially lead to a deeper understanding of the sector as a whole. The S-D logic would still be a valid theory to utilize; however, to discover how telehealth can reach its full potential, a greater focus on the network effects required could also be applied. Furthermore, more empirical data could be collected by using observations in combination with in-depth interviews to fully grasp the practical reality of the service providers in both telehealth firms and the public traditional healthcare. It is shown that telehealth service benefits from scale and the current Swedish healthcare system is greatly decentralized. Therefore, another suggested future research topic is the possibility of establishing a nation-wide public telehealth service for Sweden.

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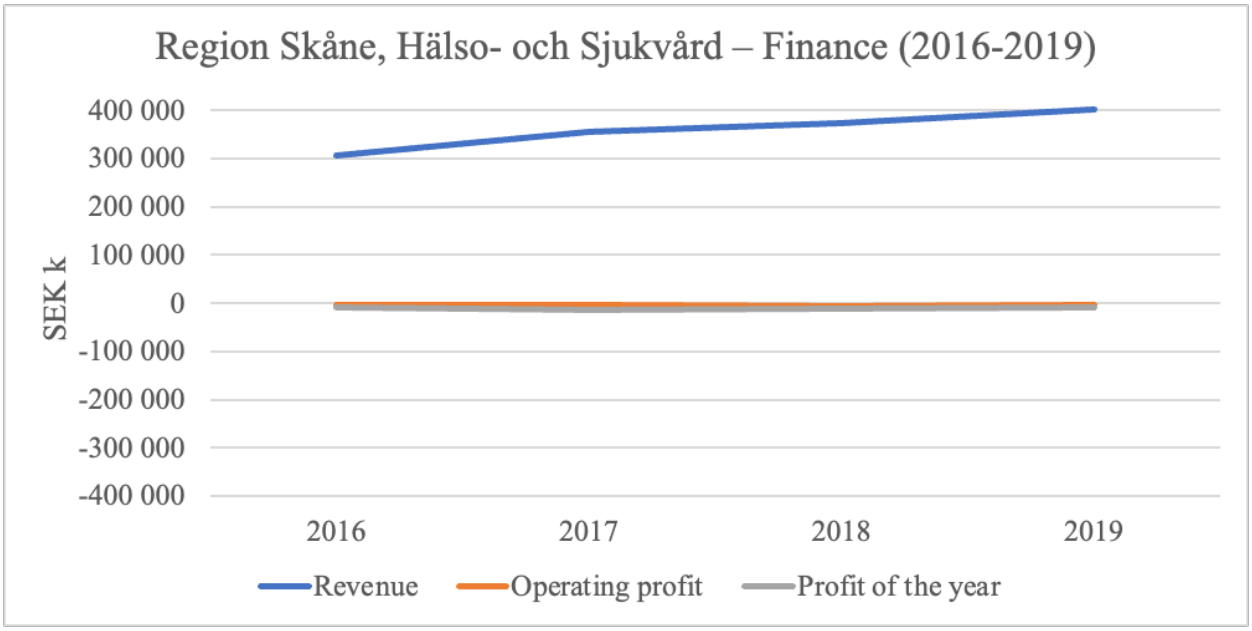
9. Appendices

9.1. Appendix A – Region Skåne, financial information

Table 2: *Region Skåne, Hälso- och Sjukvård – Finance*

(SEK k)	2016	2017	2018	2019
Revenue	306 840	357 120	373 400	401 380
Operating profit	-4 547	-4 620	-4 760	-4 347
Profit of the year	-7 450	-12 860	-10 170	-8 390

Figure 6: *Region Skåne, Hälso- och Sjukvård – Finance*



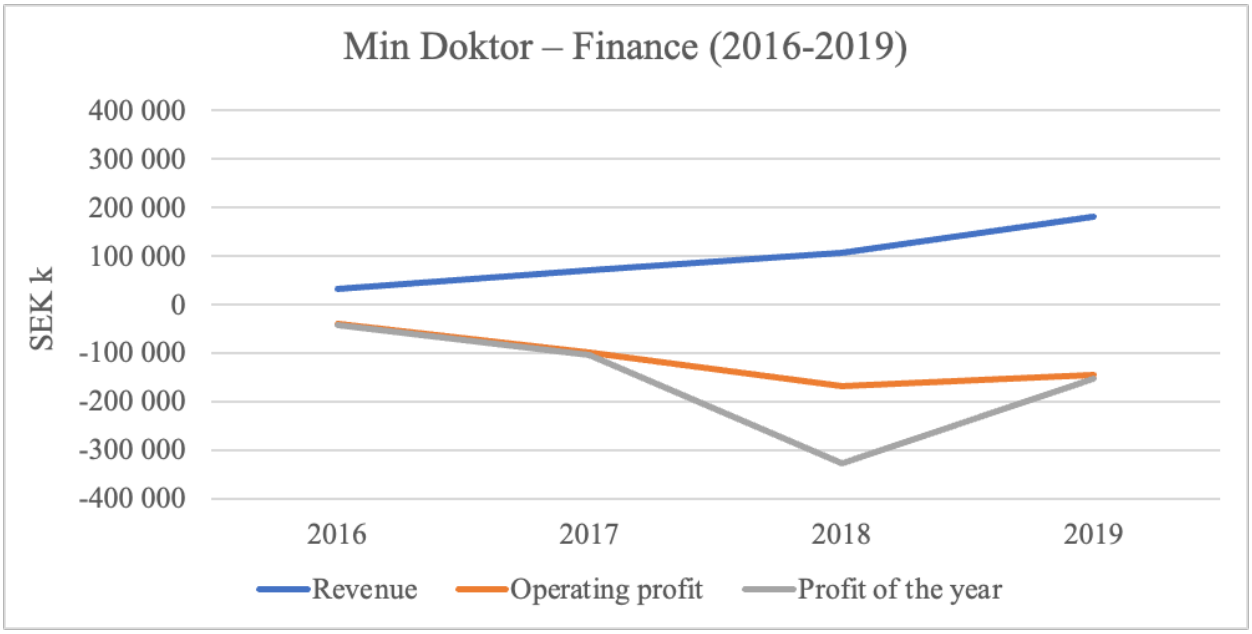
(Region Skåne, 2021a)

9.2. Appendix B – Min Doktor, financial information

Table 3: *Min Doktor (MD International AB) – Finance*

(SEK k)	2016	2017	2018	2019
Revenue	33 782	70 365	108 380	182 749
Operating profit	-39 702	-99 108	-167 311	-144 713
Profit of the year	-42 065	-102 299	-327 996	-152 707

Figure 7: *Min Doktor (MD International AB) – Finance*



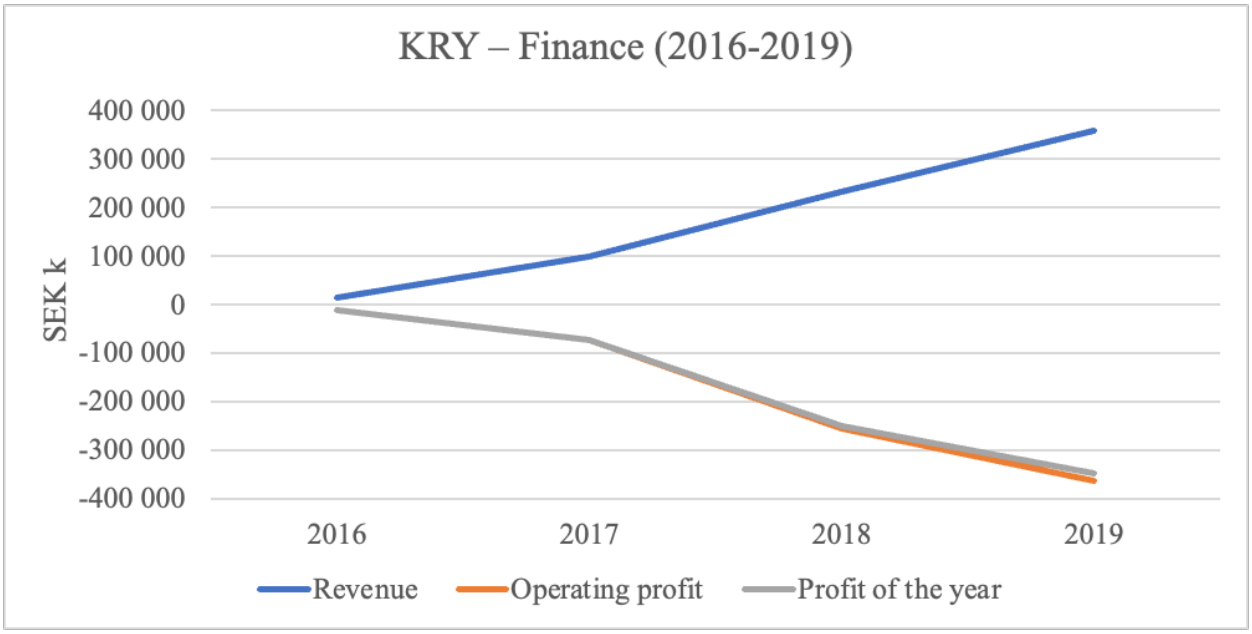
(Min Doktor, 2021)

9.3. Appendix C – Kry, financial information

Table 4: *Kry (KRY International AB) – Finance*

(SEK k)	2016	2017	2018	2019
Revenue	14 512	99 686	234 227	358 941
Operating profit	-11 551	-73 242	-255 800	-362 232
Profit of the year	-10 786	-73 721	-250 681	-347 870

Figure 8: *Kry (KRY International AB) – Finance*



9.4. Appendix D – The evolution of S-D logic's FPs and axioms

Table 5: *The evolution of S-D logic's FPs and axioms (simplified)*

Foundational Premises	Vargo & Lusch, 2004a	Vargo & Lusch, 2016	Axioms
FP1	The application of specialized skills and knowledge is the fundamental unit of exchange.	Service is the fundamental basis of exchange.	Axiom 1
FP2	Indirect exchange masks the fundamental unit of exchange.	Indirect exchange masks the fundamental basis of exchange.	
FP3	Goods are distribution mechanisms for service provision.	Goods are a distribution mechanism for service provision.	
FP4	Knowledge is the fundamental source of competitive advantage.	Operant resources are the fundamental source of strategic benefit.	
FP5	All economies are services economies.	All economies are service economies.	
FP6	The customer is always a coproducer.	Value is co-created by multiple actors, always including the beneficiary.	Axiom 2
FP7	The enterprise can only make value propositions.	Actors cannot deliver value but can participate in the creation and offering of value propositions.	
FP8	A service-centered view is customer oriented and relational.	A service-centered view is inherently customer oriented and relational.	
FP9	-	All social and economic actors are resource integrators.	Axiom 3
FP10	-	Value is always uniquely and phenomenologically determined by the beneficiary.	Axiom 4
FP11	-	Value co-creation is coordinated through actor-generated institutions and institutional arrangements.	Axiom 5

9.5. Appendix E – Interview guides

INTERVJUGUIDE: Finansiär – Region Skåne

Angående digital vård och dess digifysiska strategier

Intervjudeltagare: <NAME>

Intervjuare: Eric Klingener
Karen Ip Wiinberg

Datum: <DATE>

Tack så mycket för att du vill ta dig tid och ställa upp på vår intervju!

Denna uppsats är den huvudsakliga delen av det sista momentet på vår utbildning på Copenhagen Business School där vi båda studerar MSc of Economics and Business Administration. Projektet kommer att resultera i en master thesis på 30 ECTS-poäng (kursbeskrivning finns här).

Uppsatsen kommer att kvalitativt behandla fenomenet gällande serviceföretag som startas online/digitalt för att sedan expandera i en offline/analog marknad. Vi har valt att fokusera på företag inom digital vård (“telehealth”) på den svenska marknaden där vi kommer att undersöka hur digitala vård-plattformar konkurrerar med traditionell primärvård.

Vid eventuella frågor, var vänlig ta kontakt med oss. Kontaktuppgifter:

Eric Klingener | erkl16ab@student.cbs.dk | +46 79 333 74 49
Karen Ip Wiinberg | kwip16ab@student.cbs.dk | +46 70 242 06 54

1. **Information om intervjudeltagaren**
   - Vad är din position och vilka ansvarsområden har du på Region Skåne?
   - Hur länge har du varit anställd på Region Skåne?
   - Vilka projekt inom digital vård har du arbetat med på Region Skåne?

2. **Digital vård som service**
   - Vilka målgrupper och huvudsakliga användare har ni sett i digital vård?
   - Vilka behov i de respektive målgrupperna hjälper digital vård att täcka?

3. **Relationen mellan den offentliga sektorn och privata aktörer inom digital vård**
   - Hur påverkas Region Skåne av ökad konkurrens i primärvården?
     - Positivt / oförändrat / negativt?
   - Varför väljer Region Skåne att outsourca några av deras tjänster till privata digital-analoga vårdföretag?
   - Hur väljer den offentliga sektorn deras partners? T.ex:
     - Kontrakt angående antikroppstest med Min Doktor och COVID-vaccin med KRY.

4. **Möjligheter inom digital vård**
   - Hur påverkar digital vård allokeringen av resurser i Region Skåne?
     - HR? Vårdcentraler? Effektivitet av arbetskraft?
   - Hur påverkar digital vård Region Skånes ekonomi?

5. **Hinder inom digital vård**
   - Hur påverkas digitalisering av vårdtjänster av olika kunskaper av teknologiska färdigheter?
     - Patienter, läkare, finansiärer, plattform.
   - Är där några aktörer som inte gynnas av digital vård?
   - Hur påverkas den digitala vården av regulationer, lagar och patientsekretess?
     - GDPR, etc.

6. **Framtiden för digital vård**
   - Hur kan digitala vårdplattformar dra nytta av användardata?
     - Databaser? AI (patient-screening)?

7. **Övriga kommentarer?**

INTERVJUGUIDE: Telehealth – KRY

Angående digital vård och dess digifysiska strategier

Intervjudeltagare: <NAME>

Intervjuare: Eric Klingener
Karen Ip Wiinberg

Datum: <DATE>

Tack så mycket för att du vill ta dig tid och ställa upp på vår intervju!

Denna uppsats är den huvudsakliga delen av det sista momentet på vår utbildning på Copenhagen Business School där vi båda studerar MSc of Economics and Business Administration. Projektet kommer att resultera i en master thesis på 30 ECTS-poäng (kursbeskrivning finns här).

Uppsatsen kommer att kvalitativt behandla fenomenet gällande serviceföretag som startas online/digitalt för att sedan expandera i en offline/analog marknad. Vi har valt att fokusera på företag inom digital vård ("telehealth") på den svenska marknaden där vi kommer att undersöka hur digitala vård-plattformar konkurrerar med traditionell primärvård.

Vid eventuella frågor, var vänlig ta kontakt med oss. Kontaktuppgifter:

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Karen Ip Wiinberg | kwip16ab@student.cbs.dk | +46 70 242 06 54

1. **Information om intervjudeltagaren**
   - Vad är din position och vilka ansvarsområden har du på KRY?
   - Hur länge har du varit anställd på KRY?
   - Vilka projekt inom digital vård har du arbetat med på KRY?

2. **Digital vård som service**
   - Vilka målgrupper och huvudsakliga användare har ni sett i digital vård?
   - Vilka behov i de respektive målgrupperna hjälper digital vård att täcka?

3. **Relationen mellan den offentliga sektorn och privata aktörer inom digital vård**
   - Hur påverkas KRY av ökad konkurrens i den digitala primärvården?
     - Positivt / oförändrat / negativt?
   - Varför väljer KRY att samarbeta med den offentliga sektorn?
   - Hur fungerar relationen mellan privata aktörer sinsemellan och relationen mellan privata aktörer och den offentliga primärvården idag och i framtiden?

4. **Möjligheter inom digital vård**
   - Hur påverkar digital vård allokeringen av resurser inom primärvård?
     - HR? Vårdcentraler? Effektivitet av arbetskraft?
   - När det gäller digifysisk strategi, hur kommer det sig att KRY expanderar med fysiska vårdcentraler medans konkurrenter (t.ex. Min Doktor) expanderar med fysisk vård?

5. **Hinder inom digital vård**
   - Hur påverkas digitalisering av vårdtjänster av intressenters olika kunskaper och teknologiska färdigheter?
     - Patienter, läkare, finansiärer, plattform.
   - Är där några aktörer som inte gynnas av digital vård?
   - Hur påverkas den digitala vården av regulationer, lagar och patientsekretess?
     - GDPR, etc.

6. **Framtiden för digital vård**
   - Hur kan digitala vårdplattformar dra nytta av användardata?
     - Databaser? AI (patient-screening)?
   - Undersökningar har visat på en generellt ökning av användning av vårdtjänster. Varför verkar det vara fler som använder sig av vård? Vad säger detta om KRYs affärsmässiga framtid?

7. **Övriga kommentarer?**

9.6. Appendix F – Interview participants

Table 6: *Participants in semi-structured interviews*

#	Stakeholder group	Firm	Position	Length	Date
1	Payer (pilot)	Region Skåne	Former CTO / Former Medical Technician	00:36:12	05/03/2021
2	Payer	Region Skåne	Project Manager / Health and Healthcare Strategist	00:56:51	11/03/2021
3	Payer	Region Skåne	Group Financial Controller	00:55:17	07/04/2021
4	Telehealth	Region Skåne	Head of Program – eHealth and Digitalization	00:45:40	08/03/2021
5	Telehealth	Min Doktor	Head of Innovation and Partnerships	01:15:01	09/03/2021
6	Telehealth	Min Doktor	Head of Business Analysis	00:47:26	10/03/2021
7	Telehealth	Kry	CEO Sweden / Managing Director Nordics	00:43:20	12/03/2021
8	Service provider	Region Skåne	Health and Healthcare Strategist of Primary Care	00:48:15	10/03/2021

9.7. Appendix G – Focus group guide

Table 7: *Focus group guide – Questions [ENG]*

#	Question	Time
1	Please tell us your name, where you are from, and a spare time hobby of yours.	05:00
2	What is important when you are in need of healthcare services? a. Timely diagnosis, geographical location, personal treatment, relationship with the healthcare provider?	05:00
3	Would you rather receive healthcare at home or at a physical facility? a. Comfort, convenience, safe, own engagement in illness?	05:00
4	What are your opinions about public vs private healthcare services?	05:00
5	Have you used digital healthcare services? a. If yes, what operator? b. If yes, why? What did you think about the service? i. Personal treatment, medical competence, time? c. If not, what would encourage you to use digital healthcare services?	10:00
6	What do you think about digital healthcare (in general)? a. Positive, negative, neutral? Why? i. E.g. pros: convenience, accessibility, timely diagnosis, etc. ii. E.g. cons: difficult, technical, lack of personal touch, etc.	10:00
7	Have you faced technical difficulties while using digital healthcare services? a. If you haven't used digital healthcare, do you think that you *would* face technical difficulties? i. Chatting, video calling, explaining issues, do you own testing and monitoring, etc. b. If faced with technical difficulties, how would you tackle them?	10:00
8	Even though both private and public healthcare is free for all Swedish citizens, could you see yourselves pay for healthcare services (above the tax rate)? Could you see yourselves pay for *digital* healthcare services? a. E.g., expectation of quality, time saving (opportunity cost). b. Why? Why not?	10:00

Table 8: *Focus group guide – Frågor [SWE]*

#	Fråga	Tid
1	Var vänlig och berätta ditt namn, var du kommer ifrån, var du bor, och ett fritidsintresse.	05:00
2	Vad är viktigt för er när ni är i behov av primärvård? (Oavsett om det är fysisk eller digital.) a. Snabba diagnoser, kort väntetid, geografisk plats, personlig vård, nära relation med vårdgivaren?	05:00
3	Skulle du hellre få vård hemma eller i en fysisk vårdcentral. a. Bekvämlighet, lättillgängligt, säkerhet, eget engagemang?	05:00
4	Vad är era åsikter om offentlig vs privat primärvård?	05:00
5	Har ni använt digital vård tidigare? a. Om ja, vilken operatör? b. Om ja, vad tyckte du om tjänsten? i. Personlig hantering, medicinsk kompetens, tid? c. Om nej, vad skulle få dig att vilja använda digital primärvård?	10:00
6	Vad tycker ni om digital primärvård generellt? a. Positivt, negativt, neutral? Varför? i. E.g. pros: lättillgängligt, effektivt, etc. ii. E.g. cons: svårt, tekniskt, brist på personligt touch, etc.	10:00
7	Har ni haft tekniska problem när ni har använt digital primärvård? a. Om ni inte har använt digital primärvård, tror du att du *skulle* får tekniska problem vid användandet? i. Att chatta, ha videosamtal, förklara problem, göra sina egna test, själv övervaka och följa upp, etc. b. Vid tekniska problem, hur skulle ni tackla dem?	10:00
8	Trots att både privat och offentlig primärvård i Sverige är gratis för alla i Sverige, kan ni se er själva betala för primärvård? Kan ni se er själva betala för *digital* sjukvård? a. E.g., förväntan av kvalitet, spara tid (opportunity cost). b. Varför? Varför inte?	10:00

9.8. Appendix H – Focus group segmentations

Table 9: *Focus Group segmentations – Customers*

Stakeholder group	Age span	Years in university	Marital status	*n*	Length	Date
Customers	18-30	3-7	Single or partnership, w/o kids	*n:* 5	01:11:57	16/03/2021
Customers	31-50	1-3	Single or partnership, w/ and w/o kids	*n:* 5	00:48:59	18/03/2021
Customers	51-70	--	--	--	--	--

9.9. Appendix I – Focus group participants

Table 10: *Participants of Focus Group #1, aged 18-30*

#	Gender	Age	Years in university	Profession	Marital status	Hobby
1	Male	26	3	Community Youth Center Assistant	Single, no kids	Skateboarding and playing music
2	Male	27	7	Ph.D. Student in Microbiology	Single, no kids	Playing the guitar and party
3	Male	29	4	BSc Student in Computer Science	Single, no kids	Climbing and surfing
4	Male	30	3	Retail Assistant	Partner, no kids	Reading books and playing video games
5	Male	30	5	BSc student in Web Analysis	Partner, no kids	Skateboarding and reading books

Table 11: *Participants of Focus Group #2, aged 31-50*

#	Gender	Age	Years in university	Profession	Marital status	Hobby
1	Male	32	1	Technical Salesman	Married, two kids	Fishing
2	Female	40	3	Communicator	Married, three kids	Running
3	Female	48	3	Nurse	Married, two kids	Various physical activities
4	Male	38	1	Sommelier	Partner, no kids	Wine, food, and fitness
5	Female	37	1	BSc Student in Teaching Education	Married, two kids	Running, being outdoors

Table 12: *Trustworthiness as quality criteria*

Criteria	Implication	Suggested strategy	Measures to meet strategy
Credibility (Internal validity)	Authentic description of experiences.	• Prolonged engagement. • Triangulation of sources and investigators. • Peer debriefing. • Member checking.	• The researchers will be deeply invested in the case and focus interpretation on "multiple influences and mutual shapers and contextual factors" (Lincoln & Guba, 1985, p. 304). • Interviews from several sources and focus groups will ensure triangulation of sources. • The researchers will be in close connection with a supervisor that is competent in the field of study. • The group members will continuously re-read each other's texts and analysis.
Transferability (External validity)	The applicability of the findings in other contexts.	• Thick description. • Purposive sampling.	• A thick description will enable the determination of the degree of transferability of the concept to another case. • Only participants with a clear connection to the case will be interviewed.
Dependability (Reliability)	The demonstration of findings being consistent (Golafshani, 2003).	• Triangulation of methods. • Consistency in interpretations.	• Both in-depth interviews and focus groups will ensure triangulation in methods. • All data found from empirical data collection will be coded in the same way.
Confirmability (Objectivity)	The degree of biases, motivations, and interests that influences interpretations (Cohen & Crabtree, 2006).	• Audit trail. • Reflexivity.	• The findings, interpretations, and recommendations will be examined to ensure support from the data. • The research group will consciously reflect on what and where they are, and what and how they act.

The table in its entirety is inspired by "Table II Criteria for evaluating qualitative research [sic]" by Baxter and Eyles (1997, p. 512), whereas other contributors have been supplemented to give a holistic view of the concept of transferability and to contextualize it to the project at hand. The table was used as a framework in the project "A study of Danske Bank" (Maach Korsholm, Klingener, Trangosova & Christoffersen, 2020).

9.11. Appendix K – Coding process

Table 13: *Coding structure – The value proposition of telehealth*

	Raw data	1st order concept	2nd order themes	Aggregate dimensions
Health and Healthcare Strategist of Primary Care, Region Skåne	*It is clear that it is easier to access a clinic and hospital for people who live in the larger cities. However, they are not as accessible for those who live in the rural areas where it may take 40 minutes to get access to the closest clinics. That is why accessibility is an important part when it comes to digitalization of healthcare services. […] The hope, ambition, and thought with digital solutions is the possibility of offering more available time slots at healthcare clinics so that we can pick up the easier cases there and spare time slots for the patients who need care at physical facilities.*	● It is easier for people in cities to reach clinics. ● Digitalization is important for people in rural areas. ● Digital solutions that take on easy cases open up time in clinics for complicated cases. ● Digital if possible and physical if needed.	Telehealth improves accessibility and free up resources at physical clinics.	Accessibility and productivity improvement
CEO, Kry	*To increase healthcare accessibility, we need to fulfill the patient's needs by offering the right type of service. We believe in the approach of offering digital healthcare when it is possible and physical if the patient's need is not fulfilled. The thing that we have done in recent years is to merge the digital and physical service offerings to give patients a smooth healthcare service experience through a seamless interface. […] The digital way is the most effective in which we can solve 75 percent of all symptom cases and the unsolved cases can be investigated in the physical facilities. […] We practice primary healthcare service, and this is our recipe which we operate both digital and physical service.*	● Match the needs with the service. ● Digital if possible and physical if needed. ● Digital plus physical healthcare in a seamless integration. ● Telehealth can solve 75% of all symptom cases.	The need demanded is contextualized and most symptoms can be solved digitally.	

Health and Healthcare Strategist of Primary Care, Region Skåne	*Our thought at the beginning is to increase accessibility and equality of healthcare through telehealth so that people can reach out for service no matter where they live in Skåne, even for those who live far away from a clinic.*	● To increase accessibility and equality. ● Targeting rural populations.	Region Skåne push telehealth to increase accessibility and make healthcare available to all.
Head of Business Analysis, Min Doktor	*50 percent of all our cases are from women between the ages of 18 and 45. […] In a household in general, it is often women who take decisions for their partners and children when it comes to healthcare. Usually, it is mothers who live in bigger cities who use telehealth to get help for their children for problems such as skin rashes and threadworm. Our digital healthcare service is easy and convenient to use when it comes to these kinds of easier cases. […] When it comes to younger women in fertile age but do not have family, they often use telehealth to get contact with midwives regarding contraception.*	● In the average household, the woman takes healthcare decisions for the family. ● The woman often lives in bigger cities. ● Younger women without families use telehealth to get access to contraceptives.	Females in big cities are the foremost user of telehealth, regardless of having a family or not.
Communicator, 40 y/o, Focus Group #2	*I am the one who often contacts healthcare clinics for my children when they are ill. It is important for me to know that I get the right answer directly and speed is crucial.*	● As a parent, healthcare is needed. ● Speed and the right answer is required.	The most important aspects for parents are efficiency and accuracy.

BSc student in web analysis, 30 y/o, Focus Group #1	*I don't see any reason for me to change now. But I think if I would have kids then I just know that kids are sick, like, always. Then I would maybe consider getting the Kry app to make it easier to have really easy appointments, like if the kids have a flu or something. So, I can tell my job that I have to treat the kid. I think that that process would be easier to do it. […] I just imagine when you're stressed like a parent, if I could avoid going to the clinic with sick people and maybe save two hours in a day, I would definitely consider it.*	● Currently no reason to use telehealth. ● If kids were involved there would be a need. ● Time would be saved.	Time-saving processes are more important during parenthood.	
Group Financial Controller, Region Skåne	*The turnover of primary healthcare clinics in Sweden is approximately 50 billion SEK and the number will not go down in anyways. Therefore, it is important to improve efficiency so that the same amount of money can be in better use.*	● The public primary healthcare sector has a turnover of SEK50bn. ● The demand will not decrease. ● Efficiency must be improved to keep up with demand.	Efficiency must be improved to meet the demand while keep costs down.	
Head of Innovation and Partnerships, Min Doktor	*We are on the way to the normalization of telehealth. The older the population is, the more healthcare we need. If we now can introduce telehealth to this target group actively, the barrier will be pretty low to use telehealth and it will be the primary method of seeking medical help, as well as for healthcare providers who work in this industry. […] That is why we focus on people aged between 35 and 55. If we can implement telehealth to them and work on it for 10 to 15 years, after that, it will be totally natural for them to keep using telehealth service.*	● Telehealth is on the way to being normalized. ● Aging population implies more healthcare needs. ● The target on people 35-55y/o is for a future implementation.	Once telehealth has been normalized, future seniors will be able to enjoy the digital service.	Normalization of telehealth

Health and Healthcare Strategist of Primary Care, Region Skåne	*The main goal of Region Skåne to develop its own telehealth platform is not to compete with the private platforms. […] But of course, the private platforms are also exposed to competition and compete against us and other private competitors. […] The competition has, for example, driven digital care very much forward, which has been an advantage for patients. I do not see that we would have gotten where we are if we had not had the competition.*	● Competition is not the focus of telehealth. ● Competition drives the development of healthcare and telehealth. ● Competition benefits the patient.	Competition is a catalyst for telehealth normalization
Head of Program – eHealth and Digitalization, Region Skåne	*Healthcare has a focus on productivity, and it is easy to measure. […] Private players see another opportunity to develop. They can create more value, incentives, as well as how to keep you as a customer.*	● Healthcare efficiency is measured in solved cases. ● Private telehealth can create more value for the customer and be better at follow-ups.	Private telehealth focus more on customer loyalty than the public sector.

Table 14: *Coding structure – Supply-side value co-creation*

	Raw data	1st order concept	2nd order themes	Aggregate dimensions
Group Financial Controller, Region Skåne	*They are reimbursed in the same way, regardless if they are private or public. And if we didn't do it like this, we would get the 'National Competition Authority' [Konkurrensverket] knocking on the door. […] The 'National Healthcare Authority' [Hälso- och sjukvårdsnämnden] is the purchaser of the healthcare services in this model. […] There is no requirement for the digital healthcare services to have a physical clinic in Skåne for us to pay them, they simply take a detour through other regions. […] They just refer to the so-called 'National Agreement' [Riksavtalet] that we are obliged to pay for our population and their healthcare consumption.*	● Reimbursement is the same regardless of private or public. ● The 'National Healthcare Authority' [Hälso- och sjukvårdsnämnden] purchases healthcare services. ● No requirement for the healthcare firms to have physical clinics. ● The public sector is obliged to pay for the population's healthcare.	Online telehealth is treated like offline public healthcare by the Swedish gov't.	Payers deliver remunerations to telehealth
Head of Innovation and Partnerships, Min Doktor	*Fifteen years ago, Sweden made a both historic and unique decision. It was to allow for private actors to be established and deliver healthcare services on common state-funded grounds. Not all healthcare that is delivered in Sweden should be delivered by public businesses.*	● Private healthcare actors were allowed to deliver healthcare in Sweden in 2009). ● They are state-funded.	The Swedish state remunerates private healthcare actors.	
Head of Innovation and Partnerships, Min Doktor	*You could say that we today have three business models or revenue streams. We have public healthcare where the public sector pays or defray the healthcare that we provide. If we talk about healthcare services, it represents 80 percent of the revenue related to healthcare. It has revolved 180 degrees. The first two to three years the insurance companies represented almost 80-85 percent of the revenue, but now they are only a small part of the revenue. […] The primary healthcare is financed to 80 percent by public funding.*	● Three business models or revenue streams. ● 80% is paid by the public sector. ● 15% is paid by insurance companies. ● 5% is paid out-of-pocket by patients.	Private healthcare firms earn revenue from public remunerations (80%) and insurance companies & patients (20%).	

Health and Healthcare Strategist of Primary Care, Region Skåne	*I think much of the criticism stems from what kind of money flow you have. It is a question about costs that these private healthcare firms emerge. […] We receive invoices every month from the private [healthcare firms] where we need to pay for each visit. We strongly notice these monetary losses. […] If we can't afford to operate, then we can't afford to hire [healthcare staff], and we can't afford to maintain the healthcare service that we currently have. It affects costs, we are of course concerned that the money should fund the right things. It should be used for the working environment, the patients, the right healthcare services, the service quality, and to increase professionalism.*	● Public sector pays for the private sector. ● It leads to increased costs for the public sector. ● Monetary losses affect the operation of the public sector. ● It is more difficult to hire employees and leads to decreased service quality.	The public sector remunerates the private and is thereby taking an extra cost that affects their operations.
Group Financial Controller, Region Skåne	*In 2016, Region Jönköping approved that it does not matter if it is physical or digital [healthcare services]. It resulted in a dynamic reimbursement of 2200 SEK per visit; they did not receive a revenue for the registration. […] However, the regions realized shortly that it was not realistic to pay 2200 SEK for a ten-minute-long phone call or chat or video chat. So they decreased the reimbursement to 1200 SEK in the spring of 2017. […] It was then decreased even further to 600 SEK minus eventual paid patient fee. That price was accepted by all regions in the fall of 2017. Then it was questioned further and was subsequently decreased further to 500 SEK minus eventual patient fees.*	● In 2016, patients outside their own region cost the state 2200 SEK per visit. ● In the spring of 2017, the reimbursement was decreased to 1200 SEK. ● In the fall of 2017, the reimbursement was decreased to 600 SEK. ● The reimbursement was further decreased to 500 SEK minus patient fees.	'Foreign region remuneration' [utomläns-ersättning] has been on the decrease ever since its start.
Group Financial Controller, Region Skåne	*The public primary healthcare clinics, also the 'children's healthcare clinic' [BVC] and the 'mother's healthcare clinic' [mödrahälsovården] and other units, have lost registered patients every month the last 10 years in relation to the private [clinics]. Market shares are lost.*	● The public sector loses registered users. ● They have done so for a decade. ● Market shares are lost.	The public sector loses market shares by loss in registered patients.

Head of Program – eHealth and Digitalization, Region Skåne	*We always increase the costs in the budget. The healthcare services become more and more expensive; the costs increase by 7-8 percent each year. And that is unsustainable. Especially when we see more elderly people that are multi-sick and that lives longer.*	• Healthcare has become more and more expensive. • Costs are increased by 7-8% each year makes it unsustainable. • More elderly people and more multi-sick makes.	The public sector loses market shares by increased costs.	
CEO, Kry	*We don't have any real challenges [with recruiting], it is rather many employees in the public healthcare sector that are extremely frustrated about how bad it is in other places and how slowly it moves, and they search far and wide for someone with some forward-thinking and change. It is actually very easy to recruit healthcare workers that want to do something smarter and better and simpler.*	• Employees in the public sector are frustrated. • It moves slowly. • Easy for the private sector to recruit.	It is easy for telehealth to attract competence.	Telehealth create jobs and pay salaries to services providers
Head of Innovation and Partnerships, Min Doktor	*We wanted to create a platform that gave [the healthcare providers] the prerequisites to work with both their professional competence but also their personal competence to deliver better and more qualitative healthcare to the consumers that seek out our service. Remove administration, double documentation, and everything that is of frustration in the traditional healthcare sector*	• Develop the competences of the employees. • Remove frustrating administration and double documentation.	Employee development and the removal of frustrating elements attracts employees to the private sector.	

CEO, Kry	*[Standardization] is done to optimize the holistic flow. It is fastest and easiest primarily from the patient's perspective. […] In that way we noticed that it is easy for us to recruit. Now we will use [standardization] proactively, to do marketing aimed towards healthcare workers. […] We are without a doubt super attractive to workers: 'Oh, this is something completely new, it is conceptually secure, safe, and standardized. I can work flexibly'. […] We give all our employees a different kind of flexibility which is clearly incredibly appreciated.*	● Standardization optimizes the flow. ● Standardization makes it faster and easier for the patient. ● Standardization makes it easier to recruit. ● Flexibility also makes it easy to recruit.	Standardization in telehealth improves the service efficiency and attracts talents.
Health and Healthcare Strategist of Primary Care, Region Skåne	*What can be attractive [working at private telehealth firms] is the likelihood that development is a bit faster. Sometimes it moves slowly in the public healthcare sector, and we can probably think that we are a bit 'dusty'.*	● Telehealth has faster development processes. ● Faster development processes attract employees. ● Public healthcare sector is slow and 'dusty'.	Faster development processes attracts talents.
Health and Healthcare Strategist of Primary Care, Region Skåne	*In general, you could say that the private [healthcare firms] have a higher salary base. […] It matters. Money is the driving force in almost everything. If we can offer 30 000 SEK and our competitor can offer 40 000 SEK… Well, that's difficult. […] At the same time, I think that much of our staff stay with us because we are a service healthcare provider. We don't see the money; we see the patients. It depends of course on what kind of person you are.*	● Private telehealth pays higher salaries. ● Money is the driving force. ● The public sector sees the patient, not the money.	Telehealth can pay higher salaries that attract talents.

CEO, Kry	*And we refined the internal processes which made it more efficient for both healthcare providers and patients. I would like to claim that we have a much more patient secure approach compared to regular primary healthcare clinics. We have huge standardized quality processes and live surveillance of everything that's going on. Nothing is omitted to the respective doctor's or nurse's individual sugarcoated assessment. We have incredibly controlled quality management. Usually, that does not exist in [public] primary healthcare clinics at all; instead, you place your trust in an educated doctor that is seen as a king and God, even though that's often not the case.*	• Refined internal processes make it more efficient for providers and patients. • Standardized quality processes enhance quality management. • Live surveillance enhances quality management. • Telehealth do not blindly trust the doctor as a king or God.	Kry focuses on standardized processes to impose quality management to improve service quality and efficiency.	Providers provide healthcare services to service customers
Community youth center assistant, 26 y/o, Focus Group #1	*Yeah, in an abstract way it's like a calculation between convenience versus quality, like if it's something that requires not a whole lot of quality, like getting a new prescription, then convenience way outweighs quality.*	• For minor issues, convenience is more important than quality. • For more complicated issues, quality is more important than convenience.	Different issues have different valuable factors attached; value is contextual.	
Retail assistant, 30 y/o, Focus Group #1	*The risk of missing out missing things will always be higher when you have a digital platform, always. You will never be able to have the same quality and examine when it's through a screen or like you send in a picture, there will always be details that will be missed that a face-to-face interaction can't be replaced.*	• Telehealth will miss important details. • Examination quality is lower in telehealth. • Face-to-face interactions cannot be replaced.	Telehealth is perceived as less trustworthy – and irreplicable – to physical healthcare.	
Sommelier, 38 y/o, Focus Group #2	*I agree with Lena on this one. Especially smaller things are of course easier to do digitally from home. But for bigger and more complicated things I would feel safer going to a physical primary healthcare facility…*	• Smaller things are easier digitally. • Bigger and more complicated things are better at physical clinics.	Minor issues are well-suited for telehealth.	

Group Financial Controller, Region Skåne	*It also 'cleans up in the waiting room' in, if I may say so, the real [i.e., physical] healthcare clinics, so maybe accessibility is increased there. It's an act of balance between how much resources should be allowed go to the one type of patients and how much should go to the other type of patients.*	• Digital healthcare cleans up in the waiting room. • Physical healthcare is "the real healthcare". • Resource balance.	Telehealth frees up resources for the physical clinics.	
Project Manager, Region Skåne	*And they calculated the percentage, 65-70 percent ended up in two groups. You could say that different remote solutions and much self-care is enough. They just want to 'solve my case and then I'm happy'. Then there was a middle group of 20-25 percent that need a helping hand and a support process. Lastly there are 5-7 percent that never can take care of themselves.*	• 65-70% of all patient cases can be solved through digital and self-care. • 20-25% of all patients need physical support. • 5-7% of all patients always need physical healthcare services.	Telehealth can help 65-70% of all patients, but physical clinics are needed for the remaining 30-35%.	
CEO, Kry	*Naturally, focus is on the digital because that is the most efficient where you can solve 75 percent of all symptom-cases digitally. There is no doubt about that. But you cannot solve everything. And we want to be there for all.*	• 75% of all symptom-cases can be solved digitally. • Not everything can be solved digitally.	Telehealth can solve 75% of all cases, but physical clinics are needed to help the remaining 25%.	
Communicator, 40 y/o, Focus Group #2	*Now when you have informed me, I can see myself use [the private telehealth services] more, I thought that I had to pay for each visit. It was such a long time ago when I researched. Back then I thought: 'Why should I pay for something when I can go [to a public healthcare clinic] for free?' […] This is great!*	• Due to unawareness she thought it was expensive with digital healthcare. • Do not want to pay for something that can be provided for free.	Low willingness to pay, affordability is important.	Customers pay taxes and insurances to the payers

Retail assistant, 30 y/o, Focus Group #1	*The thing is, and it has been on the news a lot, especially regarding Kry and similar services, is that... What they charge us and what they charge the government is an astronomical difference between the money that we're talking about. So, if you decide to go to a private clinic, the amount of money that you as a patient pays stays the same, but the amount of money that costs the state is a lot, lot more. So, they are undermining state funded health services through that, which is fucked. […] Yeah, I have actively made the decision to change clinic just to avoid that specific thing, not to end up in a private clinic. So I would rather travel far [than use a private telehealth service].*	● Kry charge one amount to the patient and much more to the gov't. ● Private healthcare is more expensive for the gov't. ● Private digital healthcare is undermining state funded health services. ● Active decision to avoid private digital healthcare.	Criticism pointed toward private telehealth firms with the opinion of undermining public healthcare; leading to active decision to avoid telehealth.
Community youth center assistant, 26 y/o, Focus Group #1	*A point to add to is that the criticism of public services in general is that they're inefficient, but surely the point of digitizing things is to increase efficiency. Like, I kind of agree with Anton on an ethical level, I prefer things to be public because it is fairer. And so, if you're digitalizing public health care, shouldn't that solve some of the problems? A little bit of inefficiencies?*	● Digitization increases efficiency. ● Ethically, public healthcare is fairer.	Public healthcare is perceived as more fair; private telehealth is perceived as more efficient.
CEO, Kry	*You need to have this national approach, and not many people have understood that. There's a lot of 'We will also do this'. A bit more pride and then they think about it in a completely wrong way. It doesn't matter to us, they are more than happy to give it a try, I just feel bad for the taxpayers that have to pay more money than necessary.*	● A national approach is needed that is difficult to understand because of pride. ● Taxpayers pay more money than necessary.	A national approach is important to reach scale and affordability.

Table 15: *Coding structure – Demand-side value co-creation*

	Raw data	1st order concept	2nd order themes	Aggregate dimensions
Health and Healthcare Strategist of Primary Care, Region Skåne	*Our purpose is to complement the healthcare services that we already offer. […] We have an approach where we see telehealth as a complement to a healthcare service that already exists. That means, we don't want to replace anything but rather complement what's already in place*.	● Telehealth as a complement. ● Not replace traditional healthcare.	Telehealth is a complement to traditional – no creative destruction undesired.	Payers need the population, the healthcare customers, to be healthy
Group Financial Controller, Region Skåne	*…I would say it is of course to increase the accessibility. And to free up human labor for more prioritized patients. […] The new competition [in the form of telehealth firms] is an indirect cause. The reason is that accessibility in [telehealth firms] – is either perceived or de facto is – better than the one that we deliver…*	● Telehealth increases accessibility. ● Telehealth free up human labour. ● Competition is an indirect cause to launch telehealth.	Telehealth increases accessibility, free up human labour, and ensure competitivity.	
Head of Innovation and Partnerships, Min Doktor	*The public system today has essentially two missions. On the one hand, it is to finance and to satisfy the healthcare needs for the population in the respective region. […] On the other hand, the regions have the mission to deliver and define what kind of healthcare services should be offered in the region for our citizens.*	● The public system has two missions: ● Finance healthcare needs. ● Deliver healthcare.	The two missions of the public sector are finance and deliverance of healthcare services.	
CEO, Kry	*I also need to run this as a business.*	● Run Kry as a business.	Enable Kry to become a profit-maker.	

Project Manager, Region Skåne	*Then the question is, should the society spend tens of thousands or hundreds of thousands SEK on a bypass operation? […] You do something to have a partner in life that can help me support my health. I think that the public healthcare should be operate more supportive. We need to take a shared responsibility in this life journey and be much more proactive earlier.*	● Should the public sector pay for all healthcare? ● Public healthcare should be more supportive. ● Shared responsibility and proactiveness is needed.	Moral dilemma of healthcare payment; a supportive, shared, and proactive service is suggested.	
CEO, Kry	*It is included in our mission, if you are accredited by your region it is practically the mission that you have and want to have, because the remuneration model is based on capitation models which means that if the patients are healthy and don't come to you you will get paid anyways. […] Of course, that is our mission, both as principled mission but also from a pure economic perspective it is naturally something that you clearly work towards. So, you have an economic incentive from the regions to make sure that the patients are healthy.*	● Proactiveness is included in the mission statement. ● The remuneration model is based on capitation. ● Economic incentive (from the regions) to keep patients healthy.	The public sector economically incentivizes proactiveness unto private telehealth firms.	
BSc student in web analysis, 30 y/o, Focus Group #1	*I think we have to mention quality because we haven't really talked about quality, I think to me that's the like the main thing. […] I think that quality is so important and as I see it, I think we aren't there yet. Not that I would like to trust digital health care in a way that I would trust the doctor. Yet. For a lot of stuff.*	● Quality is the most important aspect of healthcare. ● Not the same trust for digital healthcare compared to a doctor.	Less trust for telehealth services and a discourse that telehealth do not have doctors.	Customers have a demand for healthcare service towards providers
Communicator, 40 y/o, Focus Group #2	*But for me, I usually contact the primary healthcare clinic on behalf of my children, for child diseases. And then I know that I will get the correct answer straight away and then speed is the most important aspect.*	● Healthcare is contacted on behalf of the children. ● Accuracy and speed is the most important aspect.	Healthcare is used for children with a requirement to solve the needs accurately and fast.	

Head of Business Analysis, Min Doktor	*50 percent of all our cases are based on women between 18 and 45 [years of age]. That's the lion's share of all our cases. It is very focused and in particular women are the larger target group compared to our competitors.*	● 50% of all cases are based on women, 18-45 y/o. ● Min Doktor has young women as target groups.	Women, 18-45y/o, are the main user and target group (Min Doktor).
CEO, Kry	*If you look at those that only use our digital services, it is in general younger people, […] meaning below 40 [years of age], and a preponderance of women instead of men.*	● Younger people use the digital services (<40y/o). ● At Kry, female users are over-represented.	Women, <40y/o, is the main user group (Kry).
Head of Innovation and Partnerships, Min Doktor	*…the typical Min Doktor user is a woman somewhere between 35-55 years of age*	● The typical Min Doctor user is a woman, 35-55y/o.	Women, 35-55y/o, is the main user group (Min Doktor).
Health and Healthcare Strategist of Primary Care, Region Skåne	*However, the reality is that the largest group who use telehealth is women age between around 20 and 40. Many of them seek medical help for their children with skin problems and that I would say is the most common symptom seen on our telehealth platform.*	● The typical Region Skåne Online Care user is a woman, 20-40y/o. ● Skin problems are the most recurring symptom.	Women, 20-40y/o, is the main user group (Region Skåne telehealth branch).

Head of Program – eHealth and Digitalization, Region Skåne	*Especially when we are getting more multi-sick people that live longer. This has also been the preach of digitalization, that we cannot decrease resources and at the same time we cannot expand indefinitely. We need to find more effective ways to work to meet the great demand for healthcare services, and you try to focus on self-care, that is to handle easier symptom on your own.*	● More multi-sick people live longer. ● Need to meet the great demand for healthcare through digitalization. ● Easier symptoms can be handled by the patient though self-care.	Increased demand due to the aging of multi-sick population that need to be met by digitalization and self-care.	
Head of Program – eHealth and Digitalization, Region Skåne	*There are many reasons behind the increased demand. One of the reasons can be the increase in physiological illness. More and more people feel worse. Not least the younger part of the population. That takes resources as well. It is not just to talk about the elderly and the multi-sick, but you can say that is a group that requires much care. […] Now you want to have people at home and the healthcare providers think that you should be at home because 24 hours in the hospital is very expensive. So, you want to move out the resources. So, there are different drivers to cost increases, but the demography is only a part of the answer. We live longer and have more lifestyle illnesses, such as alcoholism, obesity, smoking, where you need to change your behavior yourself.*	● Many reasons are behind the increased demand. ● Aging population. ● Mental illness in the younger population. ● Lifestyle illness (e.g., alcoholism, obesity, smoking).	Several reasons behind the increase in demand, e.g., aging population, mental illness, and lifestyle illness.	
CEO, Kry	*We have a pool with doctors. If you see us in the middle of the day, during those hours where we are most pressured, we have 50 clinicians that work in our digital service. You won't find that anywhere else. There is no one with that digital resource pool. […] Digital services are open 365 days per year, 24 hours every day.*	● Large pool of doctors. ● The largest digital resources pool in the market. ● Digital services are open 24/7/365.	Kry uses their large pool of human resources digitally to ensure accessibility.	Providers supply telehealths' demand of healthcare competence

Head of Innovation and Partnerships, Min Doktor	*We try to collect as much data as possible prior to each visit to be able to support the healthcare providers' decision-making so that they as fast as possible will understand what needs to be done to meet the needs of the patients. Is there a need for test-taking or do I need to send the patient to a different colleague or can I commence the treatment directly based on the amount of information that I get thanks to the platform? It is a support in the direct visit.*	● Data collection prior and during each visit. ● Data support the service providers in their decision-making. ● Data speed up the decision-making.	Patient data functions as a support to enhance and effectivize service providers decision-making.
Head of Innovation and Partnerships, Min Doktor	*We have approximately 700 000 – 800 000 registered users in our service. We do not only have one region's citizens in our service, but we have the embryo for a national information bank. Do the citizens of Kalmar seek out healthcare for needs that is different from citizens of Östergötland? Or citizens of Norrbotten? How does their consumption pattern look like? So, this becomes an absolutely unique set of data.*	● Min Doktor has data that covers the whole nation. ● The data can be used to compare different regional needs. ● The data can be used to compare different regional consumption patterns.	Telehealth can use nationally covered data to find regional patterns in terms of needs and consumption.
Retail assistant, 30 y/o, Focus Group #1	*…how would [the personal data] be saved? Like what security do they have? Because we know of like banks getting attacked by cyber-attacks, by getting hacked. How do they store that? […] And can they ensure that your data will never be stolen or hacked and then published on the internet? They can't. […] The risk of missing out things will always be higher when you have a digital platform, always. […] This question is highly political, whether you like it or not.*	● How is personal data stored in telehealth? ● Telehealth cannot protect themselves from security breaches. ● The question of telehealth and data protection is political.	Concern of telehealth cyber security mistrust in their protection of personal data.

Community youth center assistant, 26 y/o, Focus Group #1	*Yeah, the reason like selling data rings alarm bells is not because the company that you are having interaction with is using your data. That's fine. It's the moment as the way they make profit is by selling your data to third parties, which is a fraction of your privacy. That's why it's an alarm bell. I would have no problem if [a telehealth firm] used my data and kept it for themselves, if it's used to improve the services, but I would be very cynical that they would do [sell it to a third party].*	● Companies are welcome to use personal data to improve their services. ● Companies are *not* welcome to sell personal data to third parties to make a profit. ● Cynical for telehealth to not sell personal data.	Mistrust in telehealth that they would not only use personal data but also sell it to third parties.
BSc student in web analysis, 30 y/o, Focus Group #1	*I was just thinking, and maybe if Kry would promise: 'OK, we won't use your data.' And then maybe in the future something like an insurance company could be a part owner of [a telehealth firm] and then suddenly you have someone owning [the telehealth firm] who is an insurance company. And they have they have a lot of reasons to use your data. So just as Anton was saying before, I see problems with just signing up for: 'OK, take all my data, do whatever you want.'*	● Telehealth firms can be bought in the future, for example by an insurance firm. ● Personal data would join the acquisition.	Customers realize their minimal control of their personal data in big picture corporate M&As leading to mistrust in telehealth.
Technical salesman, 32 y/o, Focus Group #2	*[The private telehealth firms] have a mission, a job. And that is* not *to look after the best for each individual […], all employees at a company are there to earn as much money as possible for as long time as possible for the company; if it is listed on the stock exchange that's the strategy. So, maybe they don't take all [of the personal data] but if they only take a little bit [of the personal data], those few data points were perhaps the sensitive data for one particular person.*	● Private telehealth firms have the foremost strategic mission to create profit. ● Telehealth might not use all personal data, but even some of it is sensitive.	Since private telehealth firms are profit-makers they cannot be trusted with decent personal data protection.

Health and Healthcare Strategist of Primary Care, Region Skåne	*That one chooses to outsource is almost always grounded in the lack of possibilities to do it yourself. Meaning there is not enough staff, there is not enough resources to do it. […] We need to place our recourses on that, and then what we can outsource we sometimes need to outsource. Which was the case in [vaccinations]. And this is done by public procurements.*	● Outsource decisions lay in lacking supplying the demand. ● Resources are scarce. ● Resources optimization is crucial.	The public sector has scarce resources making optimization crucial and outsourcing necessary.	Telehealth firms relieve the payers' increase in healthcare demand
Group Financial Controller, Region Skåne	*But at the same time, we have had an underlying population growth in Skåne so the public healthcare businesses have not been as burdensome, because the population has grown the reimbursement per registered user… Let's say it is 200 SEK and that index is calculated by 200 SEK per month per registered user on average. So, when you have a population growth of 1 percent – now it has been over 1 percent, on average 1,4 percent – and if you lose 1 percent of you registered users in the public businesses, then you still have just as many customers as you did before.*	● Patients leave the public healthcare to join the private healthcare. ● Despite patients leaving the public sector, population growth creates a steady flow of patients to public sector. ● Reimbursement stays the same.	Even though many patients leave the public healthcare for the private healthcare, population growth ensure a steady flow of options and netto remuneration.	
Group Financial Controller, Region Skåne	*If the reimbursement is not too high, [private telehealth firms] are not hollowing out the economy [of the public sector] for them that are in need of more advanced healthcare services.*	● Telehealth firms are not hollowing out the state budget. ● However, the reimbursement cannot be too high.	As long as the remuneration rate is at a low level, telehealth firms are not hollowing out the state fundings.	

Table 16: *Coding structure – Digi-physical integrative value co-creation*

	Raw data	1st order concept	2nd order themes	Aggregate dimensions
BSc student in web analysis, 30 y/o, Focus Group #1	*It would be more logical to go and see someone than show it on my phone [through a telehealth app].*	● Injuries are better handled by face-to-face services.	Mistrust in telehealth's value proposition.	Service enhancement
CEO, Kry	*The driving force has always been to help patients and make healthcare services accessible. […] I usually don't say that we are a digital healthcare provider. I usually don't say that we are a digi-physical healthcare provider either, I say: 'We are a healthcare provider'. This is how our healthcare service looks like, end of story.*	● Telehealth makes healthcare accessible. ● Kry is first and foremost a "healthcare provider".	Telehealth attempt to become normalized through increased accessibility.	
Retail assistant, 30 y/o, Focus Group #1	*My grandma just figured out how to shop online for when she needs groceries. It took her like a year or so.*	● Difficult for the elderly population to adapt to digitalization.	Old people are late adopters in digital (i.e., telehealth).	Market share increase
Head of Business Analysis, Min Doktor	*We bought these clinics – and right now they are 22 since we are actually opening one today in Bromma – on the premises that we have a vision of how we can integrate digital and physical healthcare, particularly the cases that we want to take. It means that the clinic infrastructure that we have now is at very attractive locations and connected to [the Swedish supermarket chain] ICA Maxi. There are a lot of people in motion, and we offer favorable terms and conditions that also create much more value for the ICA shoppers which we can exploit by investing back into our clinics to sustain a better cost structure.*	● Min Doktor bought 22 physical clinics to integrate digital and physical healthcare. ● Increased value is created for the customers. ● The profit is used to sustain a better cost structure.	Physical clinics are bought to increase accessibility and create scale that can drive down costs.	

Head of Business Analysis, Min Doktor	*We would rather see that there are different levels of physical instances that might be needed. For example, in 'clinic light' you can meet the largest portion of patient demand in a much more flexible way, and also much more cost-efficient. To do the examination that is necessary where digital healthcare is insufficient, and thereby compensate and create a rather comprehensive offering, to a low cost, with high quality and also increase the accessibility for the patients.*	● Suggestions of different levels of physical clinics, e.g., "clinic light", this would improve flexibility. ● Physical clinics can complement telehealth. ● Physical clinics can increase quality and accessibility.	For physical clinics to complement telehealth could improve flexibility, quality, and accessibility.	
Group Financial Controller, Region Skåne	*Well, if you ask me, this type of [digital] healthcare could completely flood the system and hollow out [the economy]. Then, maybe, the parliament would get a large opposition and end it. Maybe they decide to prohibit them from charging the public sector if they don't have the possibility to physically accept patients. They would have created legislations. And to hinder being outcompeted on the market they have opened up and showed that: 'We can also offer physical [healthcare], you don't have to legislate. We meet you halfway.'*	● Telehealth could flood the market and hollow out the state budget. ● The new legislation would be created. ● Physical clinics can be used to not be pushed out from the market.	Telehealth uses physical clinics as moats against new laws and regulations.	The building of moats
CEO, Kry	*Regulators in Sweden are very preoccupied with physical buildings which is very old fashioned.*	● In the eyes of the public sector, physical buildings are still an important part of a business.	Regulators are preoccupied by physical buildings.	