What Healthtech Companies Should Consider When Approaching the UK Healthcare Market

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MASTER THESIS

Zymego

What Healthtech Companies Should Consider When Approaching the UK Healthcare Market

An Investigation of Market Challenges, and How Companies Can Respond

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Abstract

Healthcare systems around the world are facing a multitude of challenges, mostly because of aging populations. The Covid-19 pandemic put further strain on the sector and has left many countries with a backlog of medical procedures, which further exacerbates the issues. New technological products and solutions are one way to relieve healthcare workers and enable more efficient care. Zymego is a company providing such a solution: a service for bookings which automatically fill cancellations, allowing for shorter waiting times for patients and less administrative work for doctors and nurses.

Zymego is looking into the possibility of entering the UK healthcare market. Due to the size and complexity of UK market and healthcare system, there is a need for further investigation to understand how the market can and should be approached. Therefore, this study investigates the UK healthcare market with the aim of identifying what challenges exist for a healthtech company entering the market, and how companies can respond to these challenges.

The thesis identifies answers to these questions through a literature review, a multiple case study and interviews with people in the industry. Insights from all collected information were compiled, and the thesis results in a framework of the main challenges on the market with corresponding ways for companies to respond to them. These general findings are also applied to Zymego.

Keywords: UK healthcare, NHS England, healthtech, internationalization, market entry, market barriers

Sammanfattning

Sjukvårdsystem runt om i världen står inför flera stora utmaningar, framför allt på grund av åldrande befolkningar. Covid-19-pandemin belastade sektorn ytterligare och har lämnat många länder med en stor vårdskuld, vilket ytterligare förvärrar problematiken. Nya tekniska produkter och lösningar är ett sätt att avlasta vårdpersonal och kan möjliggöra en effektivare vård. Zymego är ett företag som tillhandahåller en sådan lösning: en tjänst för bokningar som automatiskt fyller avbokade tider, vilket möjliggör kortare väntetider för patienter och mindre administrativt arbete för läkare och sjuksköterskor.

Zymego undersöker möjligheten att ta sig in på den brittiska sjukvårdsmarknaden. På grund av den brittiska marknadens storlek och sjukvårdssystemets komplexitet finns det ett behov av utredningar för att förstå hur företag kan och bör närma sig marknaden. Därför undersöker denna studie den brittiska sjukvårdsmarknaden med syfte att identifiera vilka utmaningar som finns för ett hälsoteknikföretag som vill gå in på marknaden samt hur företag kan hantera dessa utmaningar.

Arbetet identifierar svar på dessa frågor genom en litteraturgenomgång, en multipel fallstudie och intervjuer med personer i branschen. Insikter från all insamlad information sammanställdes och examensarbetet resulterar i ett ramverk med de mest signifikanta utmaningarna på marknaden samt korresponderande sätt för företag att hanterad dessa. Dessa allmänna fynd tillämpas även på Zymego.

Nyckelord: UK sjukvård, NHS England, hälsoteknologi, internationalisering, marknadsinträde, marknadsbarriärer

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This Master's Thesis was conducted at the Division of Innovation Engineering at the Department of Design Science, Lund University, in collaboration with Zymego, Stockholm. It is the final step in completing our Master of Science degrees in Industrial Engineering and Management.

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Lastly, we want to direct our sincerest thank to all interviewed company representatives and market experts, for taking your time to provide material for out thesis. It would not have been possible without your contribution.

Lund, June 2022

Ella Björklund and Lovisa Hökstrand

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Abbreviations

CCG	Clinical Commissioning Group
DOI	Diffusion of Innovation
DMA	Digital Maturity Assessment
EHR	Electronic Health Record
GP	General Practitioner
ICS	Integrated Care System
NICE	National Institute for Health and Care Excellence
NHS	National Health Service

Definitions

Healthtech

Healthtech can be defined as a product or service which improved healthcare through digitalization. The word can be used to cover a wide range of data-based services and tools intended for use in healthcare (Healthtech Nordic n.d). Healthtech can refer to services used by either patient or care providers. While there are many similarities to medtech, and the two terms are sometimes used interchangeably, healthtech is often less oriented towards diagnostics and treatment of patients (Krajewski 2021). In this thesis, a wide definition of healthtech is used, primarily focusing on software-based services.

The Researchers

The authors of the report, Ella Björklund and Lovisa Hökstrand, are referred to as 'the researchers' throughout this thesis. To not be confused with authors of literature presented in the report, these authors are referred to by name or in conjunction with a source.

1 Introduction

In this chapter, the reader is introduced to the topic of the thesis, its problem formulation, and purpose with related research questions. The delimitations of the study are presented, followed by an account of who this thesis aims to serve, and a closing overview of the thesis' deposition.

1.1 Background

Today's healthcare systems are facing a multitude of challenges, mostly due to aging populations around the world. As the sector deals with these growing issues, long waiting times for patients are becoming an increasingly severe problem. The Covid-19 pandemic has left a backlog of medical procedures, which further exacerbates the issue (Stoye et al. 2021). Meanwhile, the number of patients expecting and demanding better care standards, are rising (The King's Fund n.d.). One of the sustainable development goals (SDGs) set by the United Nations states the need for quality healthcare, with the SDGs proclaiming that nations should work to "Ensure healthy lives and promote well-being for all at all ages" (United Nations n.d.).

These trends are putting more stress on the healthcare sector, increasing the need for time- and cost-efficient healthcare solutions. New technological products and solutions are one way to relieve healthcare workers, enabling them to provide more and better care for their patients. While many sectors have been digitalized over the last couple of decades, the healthcare sector has lagged behind. The administrative workload for healthcare professionals has slowly been increasing, with some workers now spending over 50 percent of their time on administrative tasks (Lee 2016). At the same time, in a survey conducted in the UK, patients have expressed their preference to manage all communication digitally. The same survey showed the patients' wish to be notified by the healthcare provider if available time slots would emerge from short notice cancellations (Healthcare Communications 2018).

One major source of inefficiency is late cancellations and missed appointments, causing 5-20 percent of all care appointments in Sweden to go unutilized. This seems to be an issue in several other countries as well, with Germany reporting that 5-20 percent of appointments were missed in 2018 (The Local 2019). The situation is similar in the UK with 5 million missed appointments nationwide in 10 months,

measured from April 2020, at an estimated cost of £760 million (Reynolds 2021). Another estimate showed that the annual missed appointment cost for 2017 was approximately £1 billion for the UK system (Slawson 2018). Late cancellations rarely get filled with new patients due to the administrative cost associated with finding a patient. This is a manual process where a healthcare worker, often a nurse, must call patients from a waiting list. Besides being time consuming, it is often unsuccessful, meaning that the appointments remain unused (Veinberg 2021).

To reach the SDGs goal, the healthcare sector needs to take advantage of the many digital solutions available. This thesis investigates the possibilities for healthtech companies to enter the UK healthcare market, particularly in the case of Zymego.

1.2 Zymego

Zymego is a Swedish healthtech company developing digital solutions that can unload administrational work from healthcare staff while simultaneously contributing to better healthcare access for patients. Their main product, Zymego Now, is a digital platform where patients can shorten their waiting time through signing up for canceled appointments. Their system then uses advanced algorithms to automatically fill these appointments with patients from the waiting list. Zymego's platform integrates to other systems used by healthcare services, such as booking systems and Electronic Health Record (EHR) systems (Zymego n.d.).

The company was founded in 2020, during the pandemic, when the issue of canceled appointments was exacerbated. Today, the product is developed, and is currently being tested in a pilot project. To date, evidence shows that the service can fill over 90 percent of short notice cancellations (Zymego n.d.).

In addition to Zymego Now, Zymego plans to develop other features for the platform, which focus on automating administrative tasks such as a mobile arrival and payment system and triage (Zymego n.d.).

1.3 Problem Formulation

Zymego is looking into expanding to new geographical markets. As healthcare is a relatively complex system, it is of interest to find markets which have a similar healthcare system to that in Sweden. The UK is one such market. The UK healthcare system also has an ambition to use more services from third-party integrators (DIT 2021).

However, the UK healthcare market is far larger and more complex than the Swedish market. Therefore, there is a need to investigate the market, and identify significant challenges and barriers to an entry.

1.4 Purpose

This study seeks to investigate the UK healthcare market, its structure, internal organization, technology utilization, openness to innovation and the conditions for entering the market space. The researchers also aim to define the procedure for entering this market, what challenges exist, and how companies can respond to these. The purpose is thus partly to describe and analyze the UK healthcare system, and partly to formulate recommendations on how to approach the market, both in general and specifically for Zymego.

1.4.1 Research Questions

This thesis aims to investigate the following research questions:

RQ1: What are the main challenges for healthtech companies entering the UK healthcare market?

RQ2: How can healthtech companies respond to the challenges on the market?

RQ3: How should Zymego approach a UK healthcare market entry?

1.5 Delimitations

When framing the problem, numerous delimitations have been made. The thesis solely intended to study the market entry of a non-domestic health-tech company. Final findings are aimed at and will serve small and mid-size enterprises (SMEs), as larger companies possess different capacity and resources, making the findings less relevant.

While the initial scope of this thesis included the entire UK market, this was soon revised to primarily focus on the English healthcare system. This is because the four constituent countries of the UK have their own separately operated healthcare systems, which would make the scope of this thesis scattered, and not allow for deeper understanding. Consequently, final findings will primarily apply to the

English healthcare system, and the researchers cannot guarantee that they can be applied to other markets within the UK. However, as sources used in this study sometimes mix information concerning the UK and England, both terms are used throughout the report. It can neither be ruled out that the terms sometimes are used synonymously.

There are both public and private healthcare providers in England. However, most of the care is provided through the public National Healthcare System (NHS), which is the focus of this thesis. Fully private healthcare providers are excluded from the scope of this thesis.

1.6 Target Audience

The conclusions of this thesis can be applicable for a wide range of companies. A general framework for entering the UK healthcare market is presented and can be utilized by healthtech companies. The findings are primarily based on Nordic healthtech companies but may also be applicable for companies from other nations, as well as for med-tech or non-technological services. This thesis is also of relevance to an academic audience, for those wishing to pursue further research or simply find this research interesting.

1.7 Thesis Disposition

The thesis is divided into nine individual chapters with the disposition seen in Table 1.1. In addition, a short presentation of each chapter's content is provided.

Table 1.1 Overview of the thesis disposition.

Chapter	*Content*
1 Introduction	Introduces the reader to the relevant area and the problem formulation. The purpose, research questions as well as the thesis' delimitations are also presented.
2 Theoretical Background	Relevant theoretical models are presented. The selected theory is used as a guide to the literature review, interviews and in the analysis of the results.
3 Methodology	Presents the methodology used to conduct research, including choices of strategy and methods. Furthermore, an elaboration of research ethics and quality is done.
4 UK Healthcare and Previous Findings	Describes the infrastructure of the English healthcare system and relevant organizations. Previous findings of market challenges are compiled and summarized.
5 Result - Case Studies	Results from case company interviews are presented. The chapter contains a compilation of each case and a summary of insights from the entire multiple case study.
6 Result – Experts	Results from expert interviews. Presents a compilation of significant insights from all conducted expert interviews.
7 Analysis and Discussion	The researchers compile and analyze the results. A framework of challenges and company responses, which answer the research question RQ1 and RQ2, is presented.
8 Applying the Framework on Zymego	The findings from chapter seven are applied on Zymego, and potential approaches are elaborated on to answer research question RQ3.
9 Conclusion	Includes final discussion of the conclusions, reliability, and limitations. Furthermore, research contributions and future research areas are discussed.

2 Theoretical Background

This chapter presents and describes the theoretical models and academic observations which form the foundation of this thesis. Areas of theory include internationalization theory, macro-environmental theory, Business Model Canvas, and diffusion of innovation. For each model or piece of theory presented, it is described how that model will be applied for this specific study.

2.1 Understanding Internationalization

There is a wide range of theories regarding internationalization. The researchers have chosen to include two approaches to the phenomenon. This section will highlight the Uppsala Internationalization Model, and the theory of Born Globals. These theories later contribute to the analysis and discussion of results.

2.1.1 **Uppsala Internationalization Model**

In the paper *The Internationalization Process of the Firm*, Johanson and Vahlne (1977) presents a model of the internationalization process that focuses on the development of the individual firm. Internationalization is a gradual process, and the model focuses on the acquisition and use of market knowledge. The model is based on observations from the authors' research in international business, mainly from studying the internationalization processes of Swedish industrial companies. The model is cyclic, and the outcome of one cycle of events becomes the input of the next (Johanson & Vahlne 1977).

The present state of internationalization is a crucial factor in explaining the direction of following internationalization. The state aspects considered in the model are market knowledge and market commitment. The change aspects considered are current business activities and commitment decisions. The model is presented in Figure 2.1 below. The model is based on the assumptions that a company wants to increase their long-term profit and minimize risk taking. (Johanson & Vahlne 1977).

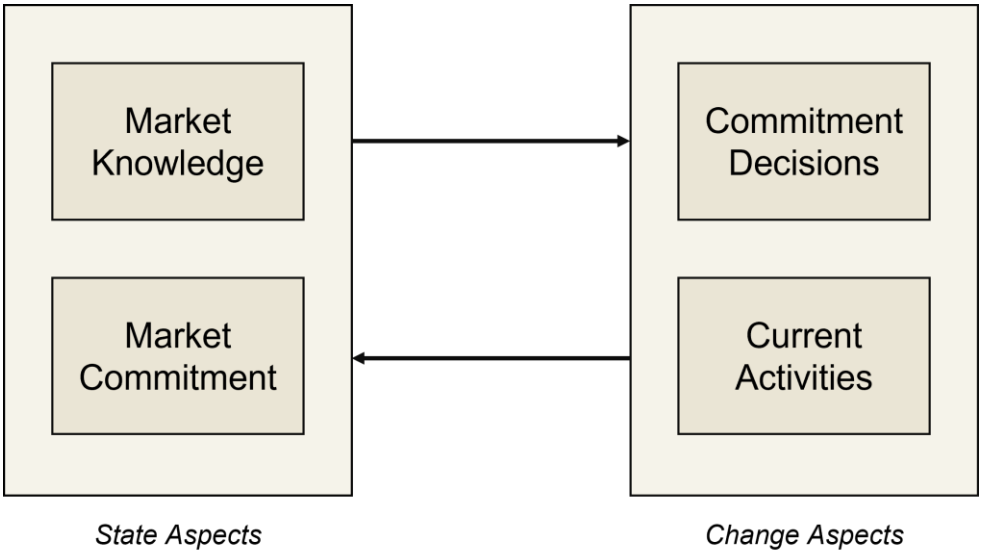

Figure 2.1. The basic mechanism of internationalization. Redesigned from Johanson & Vahlne (1977).

The concept of *market commitment* is composed of two factors, the number of resources committed and the degree of commitment, which is based on how difficult it would be to use the resources for another purpose. Market commitment is assumed to affect how the company perceives risks and opportunities. The degree of commitment is higher the more specific the resources are to the market in question and the amount of resources committed is somewhat equivalent to the size of investment in the market (Johanson & Vahlne 1977).

Market knowledge is important in the model because commitment decisions are based on several types of knowledge. Knowledge is necessary for identifying opportunities and risks, and for evaluating different alternatives (Johanson & Vahlne 1977). Penrose (1995, p 53) presents a classification of knowledge, and how it is acquired *"One kind can be formally taught, can be learned from other people or from the written word, and can, if necessary, be formally expressed and transmitted to others. The other kind is also the result of learning, but learning in the form of personal experience"* (ibid, p 53); and *"Much of the experience of businessmen is frequently so closely associated with a particular set of external circumstances that a large part of a man's most valuable services may be available only under these circumstances"* (ibid, p 53). Johanson and Vahlne (1977) conclude that this experiential knowledge is a critical kind of knowledge since it is not as easily acquired as the objective knowledge.

Current activities are the prime source of experience and experiential knowledge. While some experience can be gained through hiring personnel with relevant experience in the market, there is a difference between market experience and firm experience. Both types of experience are important (Johanson & Vahlne 1977).

Commitment decisions are the second change aspect. It is assumed that decisions depend on what alternatives are available and how they are chosen. The available alternatives will depend on perceived problems and/or opportunities, which, as previously stated, depend on experience (Johanson & Vahlne 1977).

Various kinds of criticism have been directed towards the model. Some have argued that the model is only relevant in the early stages of internationalization. Later, when the firm is operating in several markets, market knowledge and resources no longer poses a constraint. Others have argued that the world is becoming more homogenous, making the distance between different markets smaller. Therefore, firms should be able to enter larger markets directly as they share a similar culture to the original country (Johanson & Vahlne 1990).

2.1.2 **Born Global**

Born Global is a company type that strives for globalization from the start, and to do so rapidly as competitive advantages are gained when getting multi-national scale of output. Born Globals, in contrast to traditional firms, have had an international and border-less mindset from the inception, and never intended to stay on the domestic market for long (Knight & Cavusgil 2004). Madsen and Serveis (1997) mention three driving forces which can explain the emergence of Born Globals: (1) changing market conditions, (2) development of sector-related technology, (3) evolved capabilities of people and human resourcing.

An example of the first driver, changing market conditions, is increasingly niche markets resulting in the domestic market being too small. For tech companies whose networks and expertise are more commonly found and sourced internationally, innovations are more far-reaching as smaller national marketplaces merge into one large cross-border marketplace. Development of new technology is partly responsible for new conditions on the market, and ease of communication and access to information have removed tangible impediments to, from one market, operate on another market. People's previous international experiences further contribute to Born Globals being born, as already established relations between nationalities increase the possibility of retaining human resources globally (Madsen & Serveis 1997).

Argued by Knight & Cavusgil (2004), young companies still can achieve an internationalization with lack of experience, human and financial scarcity, as well as other tangible resources. For a successful Born Global, more important capabilities are identified as innovativeness, entrepreneurial and marketing orientation on an international level, and distinctive product positioning.

2.2 PESTLE

Having awareness of the environment in which a company operates is crucial for its future success and survival. Macro-environmental factors do not simply affect one specific company, sector, or industry, but rather the entire setting where all these actors exist, bringing either opportunities or threats (Whittington et al. 2021). One approach to identify the external macro-environment factors affecting an organization is the PESTLE-model, which is what it will be used for in this study. The model will provide an outline of relevant areas in the literature review to gain an understanding of the healthcare system.

The PESTLE-model is a tool used to identify the significant macro-environmental factors. Furthermore, the information procured from using the framework can also bring valuable insights, which facilitates prediction and estimation of the possible occurrence of future events or outcomes (Yüksel 2012). A PESTLE analysis, see Figure 2.2, is executed based on the following six factors:

- Political - *Authorial and governmental impact*
- Economic - *Influence if macro-economic trends such as interest-rates, hesitant business growth and currency exchange*
- Social - *factors like culture, geographics and demographics*
- Technological - *Technical innovations and tools that has cross-industry impact*
- Legal - *Refers to restrictions of legal character, e.g., taxation, regulations, and reporting requirements*
- Ecological - *Changes in climate, directives of waste disposal and pollution*

(Whittington et al. 2021).

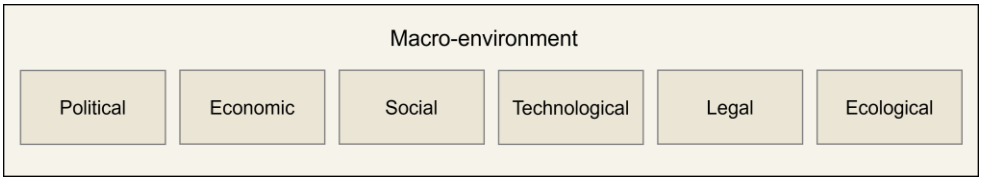

Figure 2.2. PESTLE Model. Redesigned from Whittington et al. (2021).

As stated by Whittington et al. (2021), the model can initially be perceived as being far too detailed and therefore overwhelming, yet it is the holistic view that is wanted. The aim is to map the key drivers that can imply change, moreover environmental factors affecting an organization's surroundings and hence determines the outcome of the strategies set up. PESTLE is a comprehensive model and provides a good and effective basis for decision making organs within the company, as they gain greater understanding of changes to come. Nevertheless, these arguments correspond to the statements done by Thompson et al. (2017), saying that an organization first can

know the critical success factors for the business once all aspects of the macro-environment have been analyzed.

For this study, the purpose is not to perform a complete PESTLE analysis, but rather to define relevant areas for the literature review. Therefore, the researchers have chosen to emphasize 4 of the 6 environmental factors that are found to be most relevant: Political, Social, Technological and Legal. The economic and ecological factors are excluded due to the scope of this thesis. As the study is delimited to the public healthcare, financials and funding are mostly affected by political decisions and therefore the political factor can cover relevant economical aspects. Ecological trends are deemed to be less relevant to understanding the healthcare sector, especially due to the focus on digital services, which have a relatively low environmental impact.

2.3 Business Model Canvas

Business Model Canvas is a management tool which can be used to analyze a company's business model based on nine pillars. In this study, the model is used to analyze the internal activities, capabilities, and decisions of companies, rather than a specific company. The model has been used both as a basis for interviews as well as in the analysis.

A business model is the way in which an organization creates value (Osterwalder & Pigneur 2010). Osterwalder & Pigneur (2010) identifies nine central building blocks as the best way to describe a business model. The nine building blocks cover four central areas: customers, offering, infrastructure, and finances. Based on these building blocks, the Business Model Canvas was developed as a way of visualizing an organization's business model (see Figure 2.3).

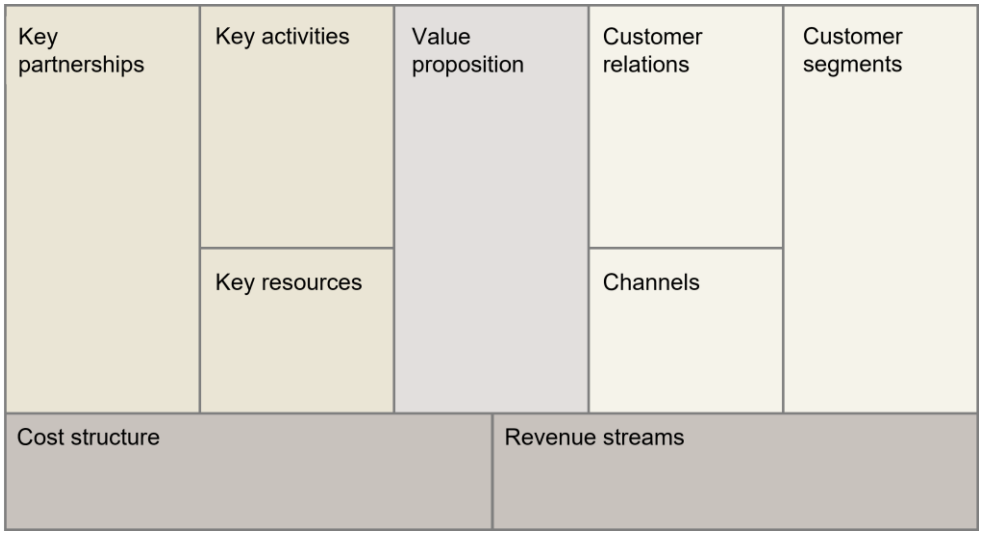

Figure 2.3. Business Model Canvas. Redesigned from Osterwalder and Pigneur (2010).

The *customer* aspect of a business model includes both customer segments and relationships, as well as the channels used to sell the product. For a healthtech company the end-user of the product is not necessarily the one buying the product. Often, products and services within healthcare are sold to care providers through purchasers while the end users are patients and/or doctors and nurses. When defining the customer segments this is important to keep in mind (Ghodeswar & Vaidyanathan 2007). Depending on if the service is sold to end users or otherwise, this also affects how the business markets their service. Many healthtech services are sold to hospitals, administrative organs, or care providers. This implies a B2B (business to business) or B2G (business to government) model will be used to sell and market the service, where the customer is another business or organization.

Business markets are different to consumer markets and how they work can generally not be explained using common ideas about markets, which are usually consumer focused. A major difference lies in that both customers and suppliers are more concentrated in business markets. There are few customers, and they buy in larger volumes compared to consumers. Businesses and organizations also often buy services and products that are continuously necessary for their operations. This means organizational buyers generally do not buy in single transactions. The concentration of suppliers and buyers, along with continuous supply needs, are reasons for the main way in which B2B marketing differs from B2C marketing, which is the importance of customer-supplier relationships (La Rocca 2020). Therefore, a large emphasis is usually put on customer relationships in B2B marketing. These relationships are often complex (La Rocca 2020).

The *offering*, or value proposition is central to any business model. McKinsey (2021) defines six interconnected attributes that contribute to a successful digital health business, of which a clear value proposition is one. The offering should not

only be clear, but also address an unmet need of at least one stakeholder within the healthcare system. This could be an unmet need of patients, healthcare workers or any other stakeholder (McKinsey 2021).

The *infrastructure* aspect of a company's business model includes the building blocks: key activities, key partnerships, and key resources. These are assets and capabilities within the company that allows it to deliver on its value proposition. Resources are the company's assets, such as physical, human, or intellectual assets, while activities are what the company does with its resources. Key partnerships are any alliances or partnerships the company relies on to support their business (Osterwalder & Pigneur 2010).

The *finances* cover both a company's cost structure and revenue streams. The revenue streams represent the cash which the company generates from their customers, and cost structure describes the costs associated with running the business. Together, the revenues and costs determine a company's earnings and if the company is profitable (Osterwalder & Pigneur 2010).

2.4 Diffusion of Innovation

Diffusion of innovation is a theory which describes how new innovations spread through society and how different groups adopt innovations at varying rates. The theory can be used to visualize where in the diffusion process a product currently is but also for understanding which customer groups should be targeted (Rogers 1983). In this thesis, the theory is mostly used in the analysis of the results but was also considered when preparing interviews.

Rogers (1983) defines the rate of adoptions as "the relative speed with which an innovation is adopted by members of society", and states that this rate depends on how customers perceive the innovation. Primarily, customers consider the following attributes of the innovation:

- Relative advantage - the extent to which the innovation is regarded as better than existing alternatives
- Compatibility - whether an innovation is perceived to be consistent with the needs of its potential users
- Complexity - how difficult the innovation is to use and understand
- Trialability - if the innovation can be tested or trialed with before purchasing
- Observability - observed effects/if the impact of the innovation is visible

Members of society can be grouped into different categories, based on their innovativeness and at what rate they adopt new innovations. More innovative individuals (or other units of adoption) will adopt innovations at a faster pace. Five

categories of adopters are defined by Rogers (1983) and Figure 2.4 illustrates a timeline over how an innovation is diffused across the different groups and society.

- Innovators are the first group of people to adopt an innovation and actively seek out information about new ideas and concepts. They are less risk averse than the general population and accept more uncertainty.
- Early Adopters are more risk averse than innovators but still willing to accept some uncertainty about new innovations. The early adopters are a crucial group in diffusing an innovation to other groups in society.
- Early Majority adopts new innovations before the average individual but long after the innovators and early adopters.
- The Late Majority adopts new innovations after the average individual and are generally skeptical of innovation.
- Laggards is the last group to adopt an innovation and often value tradition highly. This group is rarely the target for new innovations.

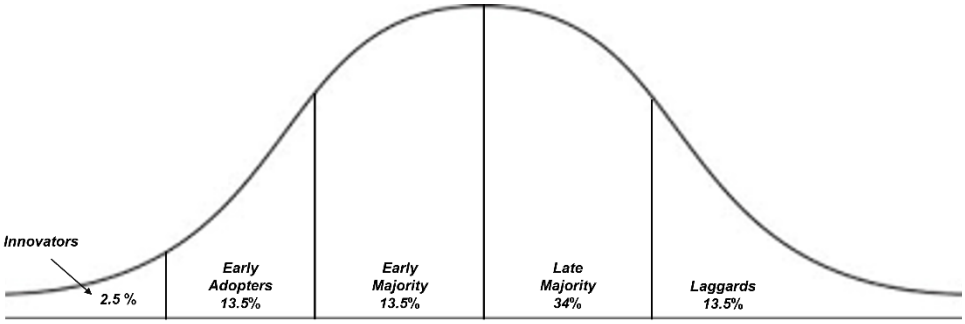

Figure 2.4. Diffusion of innovation and adopter categories. Redesigned from Rogers (1983).

3 Methodology

In this chapter, the research strategy and methodology used for this thesis are presented. The objective is to give insight into the research process and the reasons why certain methods were chosen. This chapter also discusses the measures taken to ensure a high research quality and maintain ethical research.

3.1 Overview

This thesis consists of four main phases: plan & design, literature review, data collection and analysis. While each phase was important to create a foundation for the next phase, it should also be noted that the process was iterative, rather than linear, as previous phases were revisited as new information was acquired. An overview of the work process, along with the sub activities in each phase, are illustrated below in Figure 3.1. The figure also illustrates which research questions were the primary focus in the different stages.

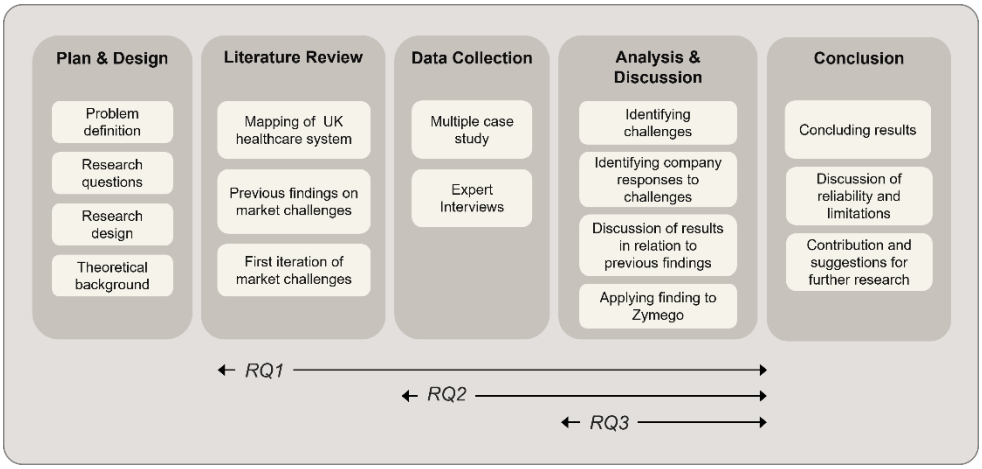

Figure 3.1. Methodology overview.

3.2 Plan and Design

The first stage of the process focused on planning, design and choosing a research strategy. A research strategy is a structured plan of how the research is to be carried out. When evaluating different strategies, the researchers had to take several aspects into consideration, for example the alignment with proposed research questions, the availability and quality of data at hand, and the benefits of a certain approach compared to its alternatives (Denscombe 2013). The problem, along with research questions were defined by the researchers together with supervisors from both the university and Zymego.

Höst et al. (2006) presents four different types of research studies. This thesis, based on the formulated research questions, can best be described as both a descriptive and exploratory study. The researchers used existing theory and market knowledge to describe characteristics of the market, and to identify challenges healthtech companies can face, which is why the research is descriptive. The other dimension of the study was to gain a deeper understanding of how companies can overcome the challenges on the market, where an exploratory study allowed the researchers to investigate possible solutions more freely.

As this thesis first iteration was based on existing theory and knowledge to be able to derive conclusions, and the second iteration conclusions were derived through studying several cases, the researchers utilized both deductive and inductive reasoning, hence had an abductive approach (Blomkvist & Hallin 2014). As new relevant areas were discovered in interviews, the literature review was revised to include these topics. Given that healthtech is a relatively new phenomenon, and due to the nature of the research questions, a qualitative approach was chosen for this thesis. Höst et al. (2006) states that it is suitable to use qualitative primary data for exploratory studies, which reinforced the choice of using a qualitative approach for this study.

Theories presented in Chapter two, Theoretical Background, have mainly been sourced through academic databases, such as LUBsearch and Google Scholar. The different theories aim to be used for different purposes in different stages of the research process, and lays the foundation of the literature review, data collection, as well as in analysis.

3.3 Literature Review

A literature review was performed with the main purpose of gaining an understanding of existing research in the relevant area of study, as well as creating a solid informational background (Höst et al. 2006). The review does not solely include research papers, articles, or other academic literature, yet the researchers

chose to also include sources such as organizations associated with the English healthcare system, news articles, reports from consultancy firms, and third sector organizations. This was necessary as some information was unavailable in the academic literature or better described in non-academic sources.

The theoretical framework PESTLE was used as a guide and gave indication of relevant areas in which literature could be retrieved to comprehend and investigate the healthcare system. For academic papers, databases such as LUBsearch and Google Scholar were utilized. A research strategy used was citation pearl growing, presented by Rowley and Slack (2004). When searching for literature, key search terms consisted of, yet not limited to, the following: *"internationalization", "barriers to entry", "market entry", "NHS", "English healthcare system", and "Innovation".* Based on the literature review, a first iteration of market challenges was compiled.

3.4 Data Collection

The next step was to collect new data and information, specifically for the purpose of this thesis. To do this, a multiple case study was conducted, as well as several expert interviews.

3.4.1 **Multiple Case Study**

For a thesis which aims to explore a contemporary phenomenon in depth, case studies are a suitable method (Höst et al. 2006). The conclusions drawn from a case study cannot be assumed to be general and applicable to other cases. However, if two cases illustrate similar conditions, the probability of reaching the same conclusions in both cases increases. A series of multiple case studies also increases the probability of finding a general pattern (Höst et al. 2006). Yin (2018) presents two types of case studies, single case-, and multiple case study. This thesis used a multiple case study approach to study previous market entry attempts, with the aim of identifying common characteristics of successful, and unsuccessful, market entries. In a multiple case study, each case can be explored in depth which enhances triangulation. There is also an opportunity to find contrasting or contradicting situations (Van Donk & Van der Vaart 2005).

Four different healthtech companies, which have entered the UK market, were included in the multiple case study. The purpose was to collect different experiences of entering the market, identify common challenges and investigate how the companies approached the market.

3.4.1.1 Interviews

For the case studies performed in this thesis, in-depth interviews were the main technique used for data collection. A semi-structured interview was chosen, meaning that an interview guide was used as a supporting tool, but the phrasing and order of question could be adjusted based on what the researchers found interesting (Höst et al. 2006). This approach was most suitable, as each case company participated had unique experiences of their attempts and had carried out the market entry plan differently. The chosen structure, in combination with open-ended questions, allowed the researchers to extract as many insights and dimensions of each specific story as possible. All interviews were conducted through a video call.

The researchers created an interview guide, found in Appendix A.1, where the theory Business Model Canvas and Diffusion of innovation guided the structure and questions asked. The outline of the interview guide was designed in alignment to the interview structure suggested by Höst et al. (2006). Segments included was an introduction with presentation of the study, researchers, and participant, followed by subject-specific questions related to the market entry attempt and scaling, and lastly a segment with closing and concluding questions. The abductive approach allowed for some changes to the interview guide as the researchers became aware of more relevant topics. The material from interviews was compiled and summarized before analysis of the results.

3.4.1.2 Selection of Case Companies

Zymego provided contacts to a few people at relevant companies, which the researchers reached out to. Furthermore, the researchers identified other interesting companies, and contacted these through email or LinkedIn. The following criteria were defined to identify and select appropriate companies:

- The company offers a healthtech service (software-based service, no hardware, or physical products).
- The company is or have been active (having at least one customer or pilot project) on the UK healthcare market.
- The company has previous experience from the Swedish healthcare market.

The efforts resulted in four selected case companies for the thesis, which are presented below in Table 3.1. Note that AllAid is a pseudonym name, as the company wishes to be anonymous. The companies have different solutions and business models which yields a more comprehensive view of the market. The companies also have varying status on the UK market.

Table 3.1 Case companies and interviewed representatives.

Company	*Status on the UK market*
Visiba Care Albin Forslund, Head of Customer Success	Active
AllAid Alpha, International Sales Manager	Active
Docly (Min Doktor) Fredrik Meurling, Ex-CFO & Ex-Interim CEO	Not active
HN Company Joachim Werr, Founder & Executive Chair	Active

3.4.2 **Expert Interviews**

Beyond the case study and literature review, interviews with experts were conducted to gain a deeper understanding of the market. For this thesis, an expert is defined as someone with relevant experience either from healthtech companies, UK healthcare market, or the NHS. As opposed to the interviews in the case study, see section *2.3.2.1 Interviews*, the researchers adopted an unstructured approach, presented by Höst et al. (2006), for the expert interviews to allow depth in the areas where the expert could provide most insight.

The experts were identified by the perceived possibility to contribute to the study in any way, with otherwise hard attainable information. The goal was for the insights from these interviews to complement companies' subjectivity, and to provide perspectives from other actors on the market. Several people working within the NHS were interviewed, as well as one person with experience from the healthcare and life-sciences sector of Business Sweden in the UK. The interviewed experts are presented in Table 3.2 below.

Table 3.2. Interviewed experts.

Derek Kelly Innovation Programme Manager, University Hospitals Dorset NHS Foundation Trust & Dorset County Hospital NHS Foundation Trust
Caroline Mellstig Theimer Managing Director, Zenicor Ex-Business Sweden Project Manager UK Branch
Guy Boersma Strategy Development Director Kent Surrey Sussex Academic Health Science Network

3.5 Analysis

The results from the interviews, both with experts, and from the multiple case study, were compiled by the researchers and structured based on the research questions. Along with the results from the literature study, the insights were analyzed and aggregated to a general framework of challenges and company responses, which answer RQ1 and RQ2 respectively.

The general framework was then applied to the specific case of Zymego to answer RQ3. This analysis was based on the information the researchers gained through the process of writing this thesis, and on a workshop with representatives from Zymego.

3.5.1 **Workshop**

A workshop was conducted with representatives from Zymego, where the general framework was presented, and its specific implications for Zymego were discussed. The workshop was also an opportunity to align conclusions with Zymego, to ensure that recommended strategies were within available resources and limitations.

3.6 Conclusion

Lastly, the results and analysis of the thesis were concluded, and each research question were clearly answered. The reliability and any limitations of the conclusions were discussed and suggestions for further research made.

3.7 Research Ethics

When conducting this study, several issues had to be considered to preserve an ethical research approach. From the exposition done by Oliver (2010), the following ethical aspects were highlighted:

- Cause of participation

- Informed consent and participant's integrity

As for the selection of case companies, the researchers had to consider if the participants had anything to gain from the study, and specifically if there is any interest in distorting the result. No company perceived, by the researchers, as a direct competitor, were therefore asked to participate in the study.

By informed consent, sufficient information has been shared beforehand for the participant to decide on whether to participate in the study. In this thesis, the participants of interest were companies rather than individual participants. However, maintenance of informed consent was still of importance since individuals are representing the companies. When reaching out to companies, and other actors, the researchers made sure to include all relevant information about the thesis and its purpose. This allowed people to make an informed decision on if they wanted to participate or not. Invitations were sent out by mail to avoid the company feeling coerced to participate. A compilation of the results of each case was shared with the case company in question, giving them the opportunity to change or cross out sensitive information. The researchers also respected any requests of privacy or anonymity.

3.8 Research Quality

When conducting research, the quality and validity of the research must be considered. For qualitative research, the trustworthiness of the data collected, and of the analysis is especially crucial. Some of the best-known criteria for judging trustworthiness are credibility, transferability, dependability, and confirmability, introduced by Lincoln and Guba (1985). These four criteria were used to evaluate and ensure the research quality of this paper.

The *credibility* aspect of the research is concerned with how truthful the data and the study's results are (Korstjens and Moser 2017). In this thesis, the credibility was mainly ensured by triangulation. Multiple interviews were conducted with representatives from different companies, as well as industry experts, creating the opportunity to validate the research findings.

The *transferability* of the research refers to the applicability and relevance of the results in other contexts or settings (Korstjens and Moser 2017). Through the multiple case study conducted in this thesis, some level of generalizability was achieved, and the results should transfer to similar companies looking to enter the UK healthcare market. The thesis also presented a thorough description of the study's context and participants, to enable the reader to further understand and evaluate how the results can be applied in other settings.

Dependability refers to the fact that research findings should be consistent, reliable, and that research procedures need to be documented to a sufficient degree, allowing an outside party to follow and audit the process (Moon et al. 2016). In this study, dependability was achieved through careful documentation of the methodology, and continuous external feedback from supervisors and other students.

To achieve *confirmability*, the researchers must consider the aspect of neutrality, and clearly demonstrate how results are linked to the conclusions (Moon et al. 2016). The interpretation of the results should not be affected by the researchers' own preferences or preconceived opinions (Korstjens & Moser 2017). The researchers managed this through validating the analysis and conclusions with supervisors regularly, ensuring that findings are based on interview data, and literature.

4 UK Healthcare and Previous Findings

Following section presents the results of the literature review, conducted for this thesis. The purpose is to create a foundation of knowledge regarding the English healthcare system, its organizational structure, as well as the challenges the National Healthcare System (NHS), and healthcare market is facing. The PESTLE framework is utilized to cover relevant factors. Lastly, initial market challenges, based on findings presented in this chapter, are summarized.

The public healthcare system in England is constituted by several bodies, organized in a cross-functional hierarchical structure, see Figure 4.1 below. The red solid arrows demonstrate the direction of responsibility, the blue dashed arrows indicate the regulatory direction, and the advisory direction is illustrated with green dashed arrows. Policy and legislation rests with the Parliament, and all health and social services are the responsibility of the Department of Health, through the secretary of state. NHS England is the healthcare institution responsible for all care providing organs (DIT 2021). The NHS is divided into commissioners, responsible for commissioning services, and providers (Kelly 2022).

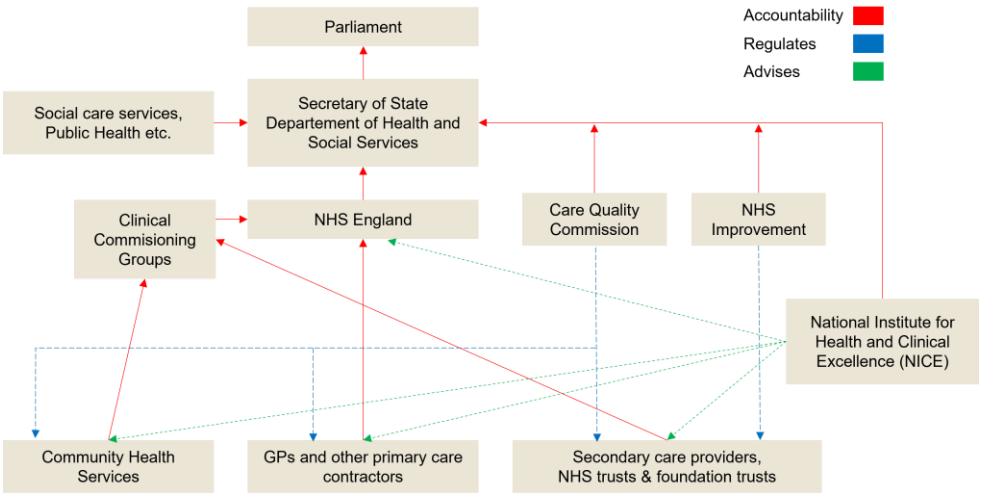

Figure 4.1. Organizational chart of the health system in England. Reworked and adapted from The Commonwealth Fund (2020).

4.1 NHS England

There are four healthcare systems in the constituent countries of the UK that are publicly funded, known as the National Health System, NHS. The governments in Scotland, Wales and Northern Ireland are respectively managing the NHS within that nation. Most of the healthcare in the UK is provided by the NHS, and mostly remains free of charge for any resident in the UK. The NHS in England employs approximately 1.5 million people, including General Practitioners, GPs (DIT 2021), or 1.2 million people excluding GP staff, making it one of the largest workforces in the world (NHS Digital 2022a).

The NHS is the main body responsible for leading the healthcare in England. There are seven regional teams within the NHS who support the local systems in their respective regions. The regional teams are also responsible for overall quality, and operational performance of the NHS organizations in their region, as well as providing support to the development of transformation partnerships, and Integrated Care Systems (ICS) (NHS n.d. a). The NHS and NHS improvement, along with subsidiary teams, are responsible for overseeing NHS foundation trusts, NHS trusts, and any independent healthcare providers (DIT 2021).

4.1.1 **Clinical Commissioning Groups**

There are 106 Clinical Commissioning Groups (CCGs) in England as of April 2021 (DIT 2021), which were established in 2013. A CCG is a group of GPs in a geographical area that come together to commission services for their patients and population (NHS n.d.b). Commissioning involves deciding what services are needed for the local population, as well as ensuring those services are provided. CCGs commission most of the hospital and community NHS services in their respective local areas. CCGs are assured by the NHS, which remains responsible for commissioning primary care services, and some specialist services (NHS n.d.c). CCGs account for about 60 percent of the NHS budget, commission most secondary care services, and co-commission many GP services (NHS n.d.b).

CCGs can commission any health provider, given that they meet NHS standards, and costs. These can be NHS trusts, social enterprises, charities, or private health care providers. All commissioned providers must be quality assured, both regarding National Institute for Health and Care (NICE) guidelines and the Care Quality Commission's (CQC) service provider data (DIT 2021).

4.1.2 **Integrated Care Systems**

NHS is currently reorganizing and is planning to fully replace the CCGs with ICSs (Kelly 2022; Harrison 2022). Providers, commissioners, local authorities, and other

important representatives, within a limited geographical area, can form an ICS (Deloitte 2019; Kelly 2022), with the purpose to implement a more joint way of operating and coordinating efforts. Hence, some decision making is eventually expected to be moved from the individual organization to the ICS, resulting in less fragmentation between healthcare organizations (Deloitte 2019). Each ICS will establish a care board, accounting for performances and spendings (Charles 2021), with officers and leads focusing on digitalization and transformation (Kelly 2022).

ICSs were planned to serve all NHS organizations by April 2021, and with that accomplished, the government and parliament have been requested, by the NHS and NHS Improvement, to transmit legal mandates to ICSs, and to remove legal barriers hindering integrated care (NHS n.d.d).

4.1.3 **Primary Care**

Primary care in the UK is mainly organized through GPs, which are normally a patients' first point of contact before reference to more specialized care. People need to register with a local GP, which they can choose freely, however many practices are full, which limits people's choices. Walk-in centers are available in some areas, which does not require any prior registration (The Commonwealth Fund 2020).

There were approximately 34,000 GPs (full time equivalents), in September 2017, which worked in almost 7,400 practices. The average practice serviced about 8000 patients. Eleven percent of practices consisted of a single GP. Most GPs are self-employed, however the share of GPs employed by practices, or as locums (filling in for other GPs), is growing. Today, around 22 percent are employed in this way, which is publicly funded (The Commonwealth Fund 2020). GPs do not solely work as single actors but can also be coordinated in so-called Primary Care Networks (PCN). These networks can cover up to approximately 50,000 patients (Mellstig Theimer 2022).

4.1.4 **Secondary Care**

Secondary care in England is mainly delivered through a type of organizational unit, called trusts, that serve a specific geographic area or, in some cases, a specialized function (DIT 2021). Together, the trusts employ around 800,000 of the NHS's 1.2 million workforce (NHS Providers n.d.).

As of October 2021, the NHS had a UK hospitals market share of 94,7 percent, making the vast majority of all 1,229 hospitals publicly owned and driven. All hospitals publicly owned are organized either as NHS trusts or as foundation trusts (DIT 2021).

4.1.4.1 Trusts

There are 221 NHS foundation trusts and NHS trusts in England that can be categorized into the following groups (The Kings Fund 2022a):

- Acute trusts - deliver hospital care, accident and emergency services, and some specialized services. Some trusts also deliver community services.
- Ambulance services trusts - primarily an emergency service to stabilize patients and take them to hospitals. Some ambulance trusts are increasingly providing other types of care such as preventative and community care, along with NHS 111 services.
- Community health trusts - deliver a broad range of care, for example: home visits, minor injury treatment and other outpatient services.
- Mental health trusts - provides specialist psychological and psychiatric care. Often work closely with primary and social care providers to help patients with mental health problems.

(NHS Providers 2015).

NHS trusts are public sector bodies established with the purpose to provide healthcare services to the NHS. The NHS trusts are directly accountable to the secretary of state for health and social care. All NHS trusts are eventually expected to transition towards becoming foundation trusts (NHS Providers 2015).

NHS foundation trusts are semi-autonomous bodies that have more independence from the department of health and social care. The purpose of the foundation trusts is to decentralize decision making and move influence from the central government to the local communities. To become a foundation trust, one must go through an approval process, after which more freedom is given compared to an NHS trust. Foundation trusts have local staff involved in their governance and have more freedom to borrow and invest money. These trusts are accountable to the local community, as well as commissioners, regulators, and parliament. Furthermore, they are regulated by NHS Improvement (NHS Providers 2015).

4.1.5 **Selling to the NHS**

Five main procurement channels are suggested when selling to the NHS (DIT 2021; GOV.UK 2018). The first route, selling directly to NHS trusts or to primary care organizations, is beneficial especially when the specific service or product is linked to the core business of that NHS organization. It requires identification of key people within that organization, for example with financial, clinical, or buying responsibilities, to be able to sell. A downside to the approach is that the sales strategy cannot easily be replicated to other organizations, as they operate and are

structured differently. However, this approach implies less competition, and the supplier gets firsthand insights of the customer's specific needs (GOV.UK 2018).

Another way into the NHS is through the NHS Supply Chain (NHSSC). The NHSSC serves all NHS organizations with necessary supplies, such as common ware and consumables. There are different categories for which a product or service can fit, and if a product does not fit within any of these categories, and is considered to be innovative, an agreement of pilot market testing can be done as long as a determined value is not exceeded. The NHSSC entails high levels of competition, as NHS procurers have access to a compiled collection of suppliers in a product catalog, making it more difficult to differentiate from the competition. Furthermore, this route mediates a protracted procurement process (GOV.UK 2018).

Moreover, suppliers can sell to cooperative purchasing partners, NHS organizations organizing on a regional level with a collaborative purchasing agreement. A supplier can thus reach out to a broad span of trust simultaneously. However, decisions on contract signing are made on trust level, and as each trust has an individual budget, some trusts within the partnership might lack financial strength in purchasing the product (GOV.UK 2018).

Two additional routes are the national framework of collaborations and contracts, and government tenders and contracts. The former aims at an agreement between the NHS and tender making suppliers, to supply those trust in need of the specific product or service to an agreed price, and thus are more commonly for consumable goods. The latter route is by selling through government tender, which is a highly competitive route as any supplier can respond to a tender (GOV.UK 2018).

Companies supplying services to the healthcare system have indicated that there are many difficulties associated with selling to the NHS. The process is perceived to be fragmented and complex. Furthermore, there can be variations between commissioning groups and different sets of requirements or standards are used to evaluate services. The lack of standardization makes selling to the NHS complicated, especially for new technologies (Liddell et. al 2008).

4.1.6 **Organizations Promoting Innovation**

There are several organizations and networks, both within the NHS and otherwise, working with promoting innovation and further digitalization within the NHS. Several of these organizations work with assisting companies and innovators establish and spread their services to the NHS. One of the main ways the NHS works with innovation is through Academic Health Science Networks (AHSNs). There are 15 Academic Health Science Networks (AHSNs) in England which were established in 2013 by NHS England. The purpose of the AHSNs is to spread health innovations at pace and scale and to facilitate change across the healthcare system. The 15 networks work in different geographic areas. The AHSNs connect the NHS

to academic and local organizations as well as industry (The AHSN Network n.d.) Besides these larger organizations, there are also several innovation programs on more local levels or within individual trusts. A selection of other organizations has been found of interest for this study, and the presentation can be found in Appendix B.

4.2 Political

Governmental decisions can have a large impact on the healthcare sector. The Department of Health and Social Care (DHSC) governs allocation of national funds by their budget. As of the year 2021/2022, DHSC has intended to spend £190.3 billion, where the majority spend (71.5 percent) is allocated by NHS England and NHS Improvement. Remaining funds goes to other health related national bodies. The pandemic is proof of an external force shifting governing bodies focus, as £33.8 billion of the total budget (17.8 percent) is planned to fortify Covid-19 related actions. Consequently, recent annual budgets have grown significantly as a response to the additional activities the pandemic brought, yet are planned to return to more normal levels, as the extra resources will no longer be needed (The King's Fund 2022b).

The decision to withdraw from the EU in early 2020 has brought several changes upon the UK system and organizations, and thus also the healthcare sector. Some implications can already be seen, however, there is yet an uncertainty of the long-term consequences. Regardless of the extent to which prevailing consequences can be observed, some potential critical areas have been identified. The restricted mobility of international workforce and future revocation of access to the professional qualifications register, are two changes affecting the size and quality of the staffing. Further changes in regulations and law are expected to affect areas such as employment agreements, public procurement processes, competition, and data management (Holmes 2021).

4.2.1 **NHS Financing**

The NHS is currently under serious financial pressure and strain. The reason for this is that the funding growth has slowed down significantly since 2010/2011. Between the financial years of 2010/2011 and 2014/2015, the average increase of spending on health services was 1.2 percent per year. In comparison, the historic annual growth rate is 3.7 percent (Robertson et al. 2017). Simultaneously, the NHS is treating an increasing number of patients, and this growing demand is predicted to cost an extra 4 percent for NHS care providers every year (Robertson et al. 2017). Between 2014/2015 and 2019/2020, the average increase in spending seems to have

been slightly higher at circa 2.5 percent (The Kings Fund 2022b). However, this is still not enough to cover the predicted cost increase.

Despite the remaining high overall public satisfaction of NHS services, a survey conducted in 2018 indicated trends of decreasing satisfaction. Evidence also shows a public perspective of the NHS not being able to live up to the expected standards, as the government have not provided them with sufficient resources (McKenna 2018).

4.2.2 Financing of Innovation

Investments in innovation are crucial for the UK healthcare to improve. The NHS wants to lower the threshold and ease the process of investing in technology. A list of the existing barriers to invest, which later resulted in proposals of measures, was created after listening to industry people. Complex funding arrangements was identified as one area of problem, hindering organizations to invest more in technology. Many reasons can explain this complexity. For example, the NHS research showed ambiguities in if the investment is made at a national level or not, consequently causing uncertainty on which budget should be used (NHSX 2021).

Organizations also have difficulties in long-term investments when budgets are made on a yearly basis, and the utility of the technology, likely measured in revenue consequences, is hard to recognize years in advance. Trust level strategy, or even provider level strategy, sometimes do not align with the national strategy or plan, which is further complicated by the fact that local providers lack insight in the national opportunities of technology investments. Moreover, the NHS have decided to move away from central funding of new technologies, and shift towards giving ICSs responsibility of allocating resources, enabling technology assets to be shared within the same ICS. However, it is still uncertain how shared assets should be handled, and thus funds are being allocated directly on a provider level, despite many ICSs already being established (NHSX 2021).

4.2.3 Public Procurement and Innovation

Services used by the NHS are often purchased through procurement and public procurement has the potential to be a significant driver for innovation adoption. However, public procurement for innovation is not performed successfully in many organizations. This is also the case within the NHS where a too complicated process and lack of coordination between stakeholders negatively affect the ability to adopt new technologies and innovations (Weisshaar 2016).

Procurement processes in public organizations often involve multiple levels, which can result in a discontinuity between different stakeholders and their interests. Research also shows that capabilities, priorities, and structures in public

organizations do not necessarily align with taking risks. Furthermore, short term financial results are often prioritized over long-term investments (Edler et al. 2015).

4.3 Social

The aging population in England is predicted to have a great impact on healthcare in the future. Within the coming 25 years, people living beyond the age of 85 will increase by 100 percent, making the total number of people exceeding this age 2.6 million. The long-term status on the older part of the population's condition, more specifically older than 75, have increased, and consequently entailed a higher need for NHS services (Raymond et al. 2021). Increasing demand due to longer lives has ultimately led to higher costs in the healthcare sector. More than 40 percent of the national healthcare funding in the UK is assigned to patients from 65 years and above (The Guardian 2016). As a result of the changing demographics in England, health care needs among the population are changing as well. (McKee et al. 2021; Roberts 2018).

Trusts in rural areas are generally more financially strained, and face different challenges compared to trusts in more urban areas. Also, there are larger workforce issues in these areas, and trusts have a harder time recruiting full-time staff (Palmer & Rolewicz 2020).

4.4 Technological

New technology in the healthcare sector is not only beneficial to patients but can also improve the work conditions for healthcare professionals. Clinical work becomes more effective and patient safe, as automation increases. The utilization of technology enables efficient collection and management of data and has resulted in better knowledge of how to extract as much value as possible from that data. Thus, healthcare providers can not only speed up the daily work tasks, but also act faster, improving patient safety and care (NHS Institute for Innovation and Improvement 2007). The UK healthcare sector has long been aware of the importance of adopting technology, and how this improves care providers' performances as well as patients' care experience. Yet, in comparison to other industries, healthcare has lagged in implementation of technologies and digitalization (Deloitte 2019).

4.4.1 **Technology within the NHS**

At present, the NHS is in the middle of a digital transformation trying to leverage information and digital technologies to overcome challenges, like high demand on

healthcare, as well as untapped capacity of healthcare services (Deloitte 2019). Yet, solely 12 percent of the trusts had gone completely digital as of 2019 (DIT 2021). However, there are several ways in which the NHS is working with implementing new technology. In their long-term plan, where long-term care improvement goals are outlined, the NHS identifies making better use of data and digital technology as a key way to achieve healthcare improvement (NHS 2019).

Although the need now is identified, the prevalence of adopting and implementing technology still seems to be generally slow. There are also significant differences between NHS organizations, and some lack, or have poorly structured, processes for investing in and implementing new technology. Generally, there is also a shortage of resources and capacity allocated to new technology purchasing and adaptation. This can refer to financial or human resources, as well as time required for implementation of the technology. Furthermore, organizations rarely coordinate efforts (Llewellyn et al. 2014).

In addition, the uptake of new technology can be opposed by clinicians if the direct benefits are not obvious to them. An example can be administrative solutions, which have very little or no impact on the clinical performance (Llewellyn et al. 2014). Organizational and funding silos are another factor accountable for the slow technology adoption pace. An NHS organization has no incentives for investing in new technology, if the cost savings and benefits accrue to another area of the system (Cashin-Garbutt 2016). Moreover, companies are struggling to identify decision makers, and are left with no guidance of the requirements set by the commissioners, resulting in potential buyers never being reached out to (Liddell et al. 2008).

4.4.2 **Electronic Health Records Systems**

Ensuring high quality patient care demands patient data being accessed, and easily shared, between stakeholders for efficient and effective care, and thus avoid putting the patient's health at risk (Deloitte 2019). EHRs are one of the key enablers to manage healthcare data efficiently, securely, and timely, making it a main objective of the digital transformation. All trusts utilize EHR systems to some extent, but to a varying degree. The digital maturity throughout the NHS differs significantly, which complicates the process of switching to more digitized patient records for those who do not have the digital architecture needed in place. While EHRs intend to ease the management and sharing of data, the spread of EHR systems used counteracts this transformation. Data accessibility between different platform providers cannot be reckoned with, with difficulties to sometimes share information even between users within a system (Deloitte 2019). However, the NHSX, responsible for the digital transformation within the NHS, strives to link these systems together, through encouraging the development of API: s (Dabies 2020).

In research including 152 acute hospital trusts, approximately half of them (49 percent) limited its use to the following three EHR systems: Cerner, Dedalus, and

System C. All the investigated trusts used 21 different systems in total. NHSX together with NHS England have added a list of EHR systems to the Health System Support Framework, guiding organizations in choosing system providers. The list consists of eight systems, all ensured to meet several criteria set by the NHSX, including the ability to integrate towards external systems. These eight systems are: Allscript, Cerner, Dedalus, IMS Maxims, Nervesentre, Meditech, TPP - SystmOne and System C (DIT 2021).

4.4.3 **Digital Identification**

There is no central method for secure digital identification in the UK today. Existing methods for digital identification are costly, enable fraud, and/or are ineffective (Department for Digital, Culture, Media & Sport 2021). In 2020, a plan for a digital ID program was published by the UK government. Public health care was one of the sectors where digital authorization was found particularly useful (Jones 2021). The NHS have approached the problem with developing their own solution, NHS login, which is a platform the patient verification is done once, and then can use their login to access their services (NHS Digital 2022b).

4.4.4 **Digital Maturity**

The NHS Digital Maturity Assessment (DMA) is a self-assessment survey, which measures how well trusts are making use of digital technology. The survey evaluates the following key maturity measures):

- *Readiness* - how well care providers can plan and deploy digital services
- *Capabilities* - the extent to which providers are using digital technology in their daily work
- *Infrastructure* - if, and to what extent, providers have the necessary infrastructure to support the capabilities.

(NHS n.d.e)

The results of the DMA (2018), see Figure 4.2, shows that the level of digital maturity varies between different trusts, and the wide gap in the use of digital technology across different sectors of care is a concern (Deloitte 2019).

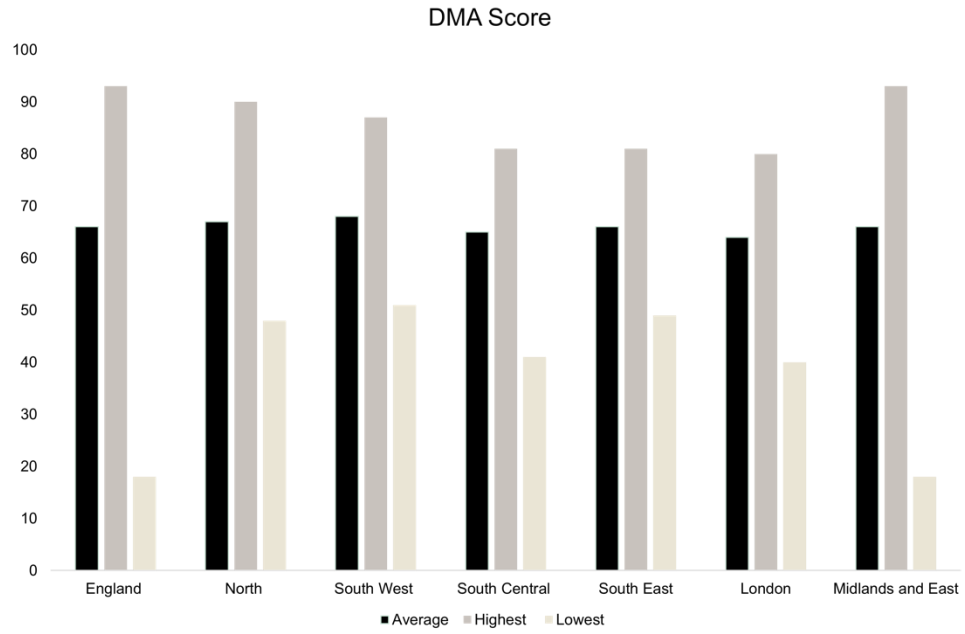

Figure 4.2. Digital Maturity Assessment Score year 2018. Average (black), highest (grey) and lowest (beige) score across each region. Data from Deloitte (2019).

The DMA only measures the level of digital maturity of trusts, and there is no equivalent assessment for the nation's primary care. Furthermore, due to the way primary care is funded, GPs lack financial incentives to invest in digital technologies (Deloitte 2019). A survey conducted by Deloitte (2019) shows that healthcare staff within primary care feel significantly less well equipped to use new digital technologies in their daily work. 44 percent of health care staff in primary care feel well equipped to use new digital technologies in their daily work, compared to 62 percent of staff in secondary care.

The NHS recognizes selected trusts as Global Digital Exemplars (GDEs) or Fast Followers. GDEs are supported to improve the quality of care through the implementation of digital technology. Their goal is for these trusts to share their experience and process and enable other trusts to follow their blueprint as quickly as possible. The GDEs are also paired with Fast Followers, who will support this adoption and spread of innovation, as well as technology (NHS n.d.f).

4.5 Legal

Healthcare is an extensively regulated industry, and both care providers, as well as the companies delivering services or technology to the healthcare industry, need to meet high standards and requirements.

4.5.1 **Data Protection Laws**

Actors managing sensitive data, such as patient data, to some extent have legislation to abide by. In the UK, the legal framework used to protect patient data is the Data Protection Act (DPA) 2018. DPA brought GDPR to law, hence the framework concerns patient consent, and has a set of criteria regarding the patients' rights. All criteria must be contemplated by a company with the intention of storing patient data (NHS Digital 2021).

4.5.2 **Regulations and Requirements**

There are several agencies involved in regulating and governing healthcare in England (The Commonwealth Fund 2020). These include the NHS Improvement which is responsible for overseeing care providers, both NHS foundation trusts and NHS trusts, as well as independent providers (NHS Improvement 2018). The Care Quality Commission (CQC) is a regulator of healthcare and ensures basic safety and quality standards through registering providers and monitoring their operations (CQC n.d.; The Commonwealth Fund 2020). Lastly, the National Institute for Health and Care Excellence (NICE) produces guidelines, develops standards and performance metrics, and provides information for commissioners and healthcare practitioners (NICE n.d.a). This includes guidelines for medical treatments, as well as evaluating the efficacy, and cost-effectiveness of health technologies (The Commonwealth Fund 2020).

NHSX has set up a tool, The Digital Technology Assessment Criteria (DTAC), to ensure that the digital health technologies being used in healthcare meets standards. This regarding technical security, data usage and access, as well as clinical safety. DTAC can be used by healthcare providers to ensure procurement of new digital technology occurs in accordance with NHSX guidelines, and without meeting these baseline criteria, the technology is recommended not to enter the NHS or social care (NHSX n.d.). External actors looking into the UK healthcare market can hence become aware of the expectations and requirements of the NHS, and thus in advance evaluate their readiness and preparedness for such entry (Kelly 2022).

4.6 Identified Challenges

This chapter has given a description of how the healthcare system is organized, how it operates, and what external companies can expect when meeting the NHS. It also presents previous findings on challenges within the healthcare system, which affect companies selling to the NHS. Table 4.1 below is a compilation of the challenges identified based on the information and literature presented in this chapter.

Table 4.1. Market challenges in previous findings.

• Complex system with many different actors • No centralized decision-making • Varying, and generally low, level of digital maturity • Different EHR systems across the NHS, which do not communicate • Strained financial situation within the NHS • Lack of financial incentives for investing in technology • High standards and requirements for new technology • Structures in public organizations and public procurement not supportive of taking risks • No central system for secure digital identification • Many different routes to market

5 Results - Multiple Case Study

This section contains the results from the multiple case study. Each case company is presented along with a compilation of the conducted interviews, which is segmented into a background, their general approach, and the significant themes which arose with each company. Insights from all cases are then compiled in two tables, one with challenges companies faced which provides input to answer RQ1 and one with the actions companies took which provides input to answer RQ2.

5.1 Visiba Care

Visiba Care is a Swedish Healthtech company, founded in 2014, that offers a cloud-based platform, for secure digital communication between patients and healthcare professionals. The platform offers multiple forms of communication, such as video calls and messaging, as well as a booking system and digital waiting rooms. Visiba Care also provides an AI chat feature that can be used for automated anamnesis and triage. The primary markets were initially Sweden and Finland. The company later expanded to Norway, UK, Switzerland, and the Netherlands. The number of employees today amounts to 105 across all markets.

The interview with case company Visiba Care and representative Albin Forslund was held on the 24th of February 2022. Forslund joined Visiba Care in 2015 and is currently their Head of Customer Success. The interview was held in Swedish. Visiba Care is henceforth referred to as Visiba.

5.1.1 **Approach**

The primary reason Visiba decided to invest in the UK healthcare market was the system's similarities to the Swedish healthcare system. Forslund also describes how a few digital care companies had already established themselves on the market. These companies competed with traditional public healthcare and created a demand for a product such as Visiba's in traditional healthcare. The competitors had managed to shift patient's expectations regarding digital care and started to force a change in traditional patient care. This contributed to a more innovation friendly environment which further made the UK an attractive market for Visiba to enter.

Visiba made their first efforts to enter the market in 2017 and decided to sell their services through a partnership with a distributor of healthtech services and products. The reasoning behind this decision was that it would be costly and time consuming to hire their own resources to sell their services in the UK. Although this partnership did lead to a few pilot cases, the approach did not prove very efficient for Visiba. Forslund explains how the healthcare market is highly risk averse and soliciting services from a small, foreign company is often associated with a higher risk. Therefore, it is necessary to build a relationship with potential customers, which is difficult to achieve when selling through a distributor. Visiba abandoned the strategy of selling through partners and established their own branch and selling team in the UK instead. This team currently consists of four full-time employees, with additional support from staff in Sweden.

As of January 2022, 500,000 patients are covered by Visiba's services in the UK. Due to the immense potential market size, Visiba still considers themselves a relatively small actor in the market.

5.1.2 **Defining Target Segments**

In the UK, Visiba is most successful within integrated health and social care services as well as specialist services. The UK healthcare system is complex, and some areas are more difficult for a company like Visiba to target. While primary care is the area where patients are most accustomed to video appointments, it can be difficult to sell the product to GPs. GPs still primarily operate as their own separate units which makes selling to them very inefficient and time consuming. While some CCGs are doing procurements for their GP clinics, the challenge of delivering the service to multiple small primary care units remains. Visiba believes that their product could also be useful within secondary care. However, in this area of healthcare, patients and healthcare professionals are less used to digital care.

No specific geographic area has been set while targeting customers, but this is something to consider going forward. Densely populated areas like London are intuitively advantageous due to the large number of patients and care providers in a small area. However, in the northern parts of the country there is a more apparent need for Visiba's products as the distances to a hospital can be much bigger. Furthermore, the northern parts of England have problems with recruiting medical staff and have a more drastically aging population, which also reinforces the need for digital solutions.

Their services can be utilized in many care areas which makes the potential market scope very wide. This creates the challenge of identifying the areas with the most potential. In trying to find the best fit for Visiba's services, they have not defined a target market segment, which have resulted in a more fragmented sales focus. Today, their customers are spread over several different areas, both in terms of geography and care. Moving forward, Visiba will start to delimit their sales focus

to target areas where they have seen the most success and concentrate their efforts accordingly. Hopefully, this will also create more market knowledge and generate a deeper understanding of relevant market segments.

5.1.3 **Market Knowledge**

Forslund brings up lack of market knowledge and experience as a major challenge for Visiba in entering the UK market. In most stages of the process insufficient understanding of the market has been the key source of difficulties. Visiba has worked with several organizations while in the UK. The NHSX have been a useful resource in terms of gaining more knowledge about the market and how the selling process works. Attending events or forums organized by The King's Fund has been key in forming connections with innovative healthcare providers and potential customers. Most of the major customers Visiba have acquired in the UK over the years have also originated from contacts created at events or forums.

Visiba has also found it difficult to identify who, within an organization, is responsible for purchasing services such as theirs. Since their platform is new and few care providers in the UK have used similar services before, it is rarely defined where the mandate for purchasing lies. This challenge is not unique to the UK and Visiba has encountered similar issues in other markets. Insufficient understanding of how key organizations (such as Trusts, CCGs, and ICSs) work can add to this issue and such information is not always easily accessible. Forslund points out the importance of finding the right people to work with. Often, it comes down to one passionate individual within a healthcare organization that is willing to drive and promote changes.

5.1.4 **Public Procurement and Requirements**

While most of the UK healthcare is publicly operated, there are also private actors on the market. It can be easier to sell to private actors as they are subject to fewer rules and regulations. Selling to public organizations often entails public procurement, which can be a challenging process and often to a smaller supplier's disadvantage. Visiba experience these processes as generally very rigid with little room for flexibility. Often, an existing relationship with the purchaser is beneficial in a public procurement process as this gives the supplier an opportunity to influence the purchaser's perception of their needs and preferences. Besides formal requirements, there can be unspoken expectations from the customer's side which are difficult for a foreign company to be aware of. If the total value of the sale is below a certain amount it is possible to sell to public care without going through a public procurement process. Thus, their strategy has been to begin with smaller projects and grow them larger over time as they gain customer trust.

Generally, Visiba's experience is that UK healthcare has higher requirements or expectations for providers to meet certain standards. Standards, such as ISO, are often used to ensure the quality and data security of healthtech products. This presents a big challenge for smaller companies, since it can take around one year to apply for and receive an ISO certification. Obtaining ISO certifications also means that the company becomes subject to continuous controls. In Visiba's case, the company had to adjust and update their internal processes in order to meet the necessary requirements. Going through this process was both time consuming and expensive for Visiba, but Forslund also points out that it ultimately raised the quality of their platform. As a foreign company, it is difficult to understand what expectations and rules exist which make it challenging to participate in procurement processes. Brexit has further complicated the issue of standards and requirements placed on healthtech providers. While the EU has common requirements, these are not necessarily applicable in the UK, as that they have left the union.

5.1.5 **Local Presence**

Visiba experienced difficulties being a foreign company on the market, which is one reason they decided to open a UK branch. Becoming a domestic actor implicated a better dialogue with stakeholders on the market, as the level of trust had increased. However, Forslund also mentions how almost all Visiba's big sales and contracts in the UK have come because of a more senior employee, from the main office in Sweden, traveling to the UK to meet the customer. While a local presence is important, it is more difficult to sell without company experience from the main office. Forslund thinks this could have to do with customers feeling more trust and assurance from the company when meeting with someone more senior. It could also be that someone who has more experience with the company and its services simply is better at conveying the benefits of purchasing the services.

5.1.6 **Product Adjustments**

Visiba had to make some adjustments to their products for the UK market. First, there is no centralized way of digitally and securely identifying patients or healthcare workers in the UK, which was solved through working with a third-party provider of secure identification. Second, the language in the product had to be translated to British English. This proved a bigger challenge than Visiba had anticipated, and it became apparent that the language used in their platform needed to be translated by a medical professional with experience of working with English medicine and healthcare terminology. Even small errors or unintuitive translations had a major impact on how customers perceive the quality of Visiba's services.

5.2 AllAid

AllAid is a Norwegian software company that was founded in 2007 by a group of clinicians, with the purpose of improving health outcomes through increased digital patient involvement. The company provides solutions to enable digital healthcare through clinical measures, remote patient monitoring, and internet-based treatment programs. Clinical measures and patient forms are used in most healthcare areas, and AllAid's services allow patients to complete measures online from home or elsewhere.

The company started in Norway, but is today also active in Sweden, and England. Since 2015, when AllAid first attempted to enter the UK market, they have tried several approaches. Today, after a refocus in their strategy, they consider themselves to have solved the "code" for the NHS trust market, and now have a promising forecast for the future.

Company representative Alpha at AllAid was interviewed on the 2nd of March 2022. Alpha joined AllAid in 2017, and currently has the role as International Sales Manager. The interview was held in English. The names AllAid and Alpha are pseudonyms, as the company wishes to be anonymous.

5.2.1 **Approach**

AllAid first entered the UK market 7 years ago, before Alpha had joined the team. They hired local representation in the UK and managed to get a few customers over a couple of years. However, after some years of operation, AllAid was no longer growing on the market. Consequently, they abandoned their previous efforts on the market, and started over with a new strategy. The local office was closed, and only a few customers were kept. This time, they could not rely on hired UK staff to build the UK organization, and instead relied on resources from the main office. AllAid had also learned the importance of having a clear strategy and having sufficient market knowledge.

5.2.2 **Defining a Scope**

Alpha believes that identifying where the product can provide the most value is key to succeed. Since the UK market is very large compared to the Nordics it is not realistic to attempt to sell to all healthcare areas at once. Alpha explains the importance of identifying the uniqueness of one's offer, as there will be plenty of UK companies with similar solutions. Identifying one's distinctiveness is not enough, it is also crucial to know who values their uniqueness and where to find them. With respect to this, AllAid decided to focus on the mental health sector, narrowing their scope down to 54 trusts. AllAid prioritized further among these

trusts with the help of professional networks, to identify what areas of mental health had the most need for their services. This set the scope for customer prospecting and made targeting even more accurate. Furthermore, it allowed AllAid to gain a deeper knowledge of the challenges in that healthcare area, which meant they could sell their services more efficiently.

5.2.3 **Market Knowledge**

AllAid found trusts to be the most beneficial entry point as GPs would require huge quantities of sales contracts as the deals were relatively small. To sell to a trust, AllAid had to gain substantial knowledge regarding the trust, and relevant professions. Conversations must therefore be held with the healthcare professionals that are the potential product users, to learn how the solution can serve them, and to get comprehension of an organization's structure, and key people. The healthcare sector revolves around supporting the practitioners, thus AllAid had to start at the bottom to get the understanding needed to show managers the exact impact of the solution. If a clinical practitioner understands the benefit of a service, they can most likely guide the company to, or affect, decision makers. Similar happened to AllAid, where they through a contact now are in conversations with one of the largest trusts in the UK. Initially, events are a great place to retrieve market knowledge, and Alpha says that approximately the first year should be dedicated to observing the market. Attendance should later be done with a clear purpose and goal, referring to doing research on attending people, and plan approaches thereafter.

5.2.4 **Experience from Main Office**

Something that became apparent during AllAid's first attempt to enter the UK market was that experience from the main office is crucial to get results. While hiring people locally can yield more market experience, they do not have the necessary company experience or product comprehension to sell the product. Now, when AllAid have gained more traction, they are looking into hiring local staff again. Alpha believes that the local organization should be built up after the initial customer is acquired. First then, the company can decide on resources needed, personnel, in-house versus outsourcing and other important operational decisions. Moreover, he thinks it is best to get the first customer on your own, and to not rely on partners or distributors early on. This is because of the knowledge gained centrally in the company through the processes of obtaining the first customers, and because it will be easier for the local staff to work in a market when they can use these first customers as a reference point, and sparring partner.

5.2.5 Selling Strategies

Alpha mentions a few challenges AllAid has experienced in the UK. First, there is less transparency into the healthcare system compared to the Nordics. While contact information to procurement managers, or other relevant people, is easily accessible in Sweden, this is rarely the case in the UK, which makes finding the right people to sell to a far more time-consuming process. Networks and contacts are crucial to finding potential customers. Second, the level of digital maturity in the UK is generally lower than in Scandinavia, and it can also vary greatly between different trusts and regions. Therefore, one should focus on the value of a service rather than technical specifications when selling. Furthermore, AllAid knew better where to put their efforts, and how to mediate more powerful messages to customers by reading strategic governmental documents, and objectives for individual trusts. These documents contain valuable key words, and indicate how national funding will be allocated, and on what individual organizations intend to focus on. As more innovative trusts can influence other trusts in the same geographical area, they are not only more promising potential customers, but also an advantageous cohort to start with as it can facilitate selling to other customers.

5.2.6 Evidence and Pilot Projects

It can be very difficult to acquire the first customers when the company is unestablished in the UK. Care providers often want to see evidence of successful pilots in the UK before committing. Although AllAid had several examples from Norway and Sweden, these did not prove as useful when selling in the UK. A happy customer will always be the most powerful marketing tool one can have in a new market, and Alpha underlines the power of word-of-mouth and quality proof a customer can bring.

5.2.7 Product Adjustments

When AllAid entered the UK, there were some issues to address and manage. AllAid has decided to store data in the country where it is collected and had to build up a local infrastructure for data storage through a local partner. Although this arrangement is not a legal requirement, or could be avoided as they are cloud based, it was perceived as an expectation of them. Furthermore, linguistic adjustments had to be done, as well as adapting the focus in sales presentations, as important aspects differ between countries.

5.3 Docly (Min Doktor)

Min Doktor is a Swedish healthtech company founded in 2013 and is a digital primary care provider. In Sweden the company functions as a regular health center (Swedish vårdcentral) where patients receive care through digital platforms instead of a physical location. Min Doktor was one of the first providers of digital primary care in Sweden.

Min Doktor was split in 2018 after the new part-owner, ICA Group through Apoteket Hjärtat, wanted to solely focus on the Swedish market. The affiliate Docly continued investigating international markets, and directed its international efforts towards the Netherlands, France, and UK. The latter market was considered the most promising, and Docly decided to concentrate their international efforts in the UK. Docly was active on the UK market for two years and managed to acquire a few customers. Eventually, Docly decided to abandon its UK business, and merge remaining resources back into Min Doktor.

Fredrik Meurling, representing Docly, was interviewed on the 11th of March. He is the former CFO and Interim CEO at Min Doktor, and CFO at Docly, started in 2015, and worked there for six years until Docly became reabsorbed into Min Doktor.

5.3.1 **Approach**

Docly's activity in the UK began with employing a British consultant that eventually would become Managing Director. Docly was interested in the UK market mostly because of its size and the fact that there were no legal barriers for their service to operate there. In the UK, Docly primarily focused on opportunities in primary care, as that is where their service is most appropriate. As GPs are privately driven, there is no need for a public procurement process when selling to these.

Early on, Docly had to make a major charge in their business compared to the way Min Doktor was operating. In Sweden, Min Doktor operated as a regular healthcare provider, which is enabled by the right of establishment prevailing in the Swedish market. As patient costs are paid on a regional level, and out-of-region compensation is possible, the mobility of patients is free, and companies like Docly can easily operate all over the country. In England however, the same possibilities do not exist, as patients only can seek care with the GP at which they are registered. This forced Docly to subcontract their services to GPs. However, since GPs had fixed cost structures, Docly had to settle with smaller margins.

Docly began with pilot projects until deciding to further commit to the market. The first came through the Managing Director's network, seven co-owed GPs in Leicester where Docly provided the digital component. Within the six first months, the team grew with two employees, and they opened a London office. Additional 12

people then joined the team, e.g., within sales and support, with additional doctors hired. Two more GPs in the London area then became customers.

Meurling believes that with more stamina, and a more long-term approach, Docly may have been able to find success in the UK. He explains that the company was eager to scale the business early on, which sometimes is possible with strong ownership in place. However, it could possibly have been better to stay in the pilot-phase for longer, to find a profitable business model that would work on a scale. Meurling also says they underestimated the time and effort it would take to establish the company in the UK, which caused them to be too short sighted.

5.3.2 **Routes to Market**

Docly explored other ways of selling their services, besides working with GPs. Some of the other possible ventures identified were selling the technical platform, innovation projects at a higher level, or gaining a contract for off-hours care. During their two years on the market, Meurling explained they pursued innovation projects in NHS Wales, in hopes of a greater chance to win on a smaller market, but Docly ended up not winning the deal. In addition, Docly has also made an attempt at selling to the insurance sector, as the margins are greater in this sector compared to GPs. Docly was also part of a large national procurement, where the NHS wished to procure a system for digital and virtual care. However, the deal was not profitable enough, and Docly withdrew from the process.

5.3.3 **Profitability**

Docly's main challenge in the UK was that they found the market less profitable compared to the Swedish market. Since they had to operate as a subcontractor to the GPs rather than operating directly as a GP, their revenues per patient were significantly lower. Meurling also says the compensation a GP receives per patient is lower in the UK, compared to what a Swedish health center receives. This, in combination with higher costs associated with operating a UK health company, led to overall less profitability. For instance, high administration costs can be led to the extensive process of hiring people. The paperwork associated with drafting of agreements, and quality control requires several experts to ensure the process is done correctly. Generally, most legal, and other administrative costs are higher in the UK.

5.3.4 **Market Knowledge**

Docly relied heavily on the experience and networks of the people they hired in the UK. The customers they gained in the UK almost exclusively originated from

previous contacts of the Managing Director, or other employees. Meurling also says that hiring local staff with experience within UK healthcare was a key source of market knowledge and understanding. This market knowledge acquisition strategy however, resulted in a division between the UK and Sweden team, as the new team lacked understanding of Docly.

5.3.5 **Product Adjustments**

Docly needed to make some product adjustments for their UK operations. Not only did the linguistic translation have to be precise and professional, but UK healthcare also proved to have a more protracted interaction between doctor and patient. Questionnaires are cumbersome, which must be considered. Digital patient identification was another aspect Docly had to manage. They used a two-factor verification, a photo of ID submitted that connects to a mobile number, provided by a third party. Meurling described this kind of process as costly. Expectations from care providers of a certain certificate standard imposed Docly to dedicate two employees to quality control solely.

5.3.6 **Resistance Towards Foreign Companies**

Meuling describes how they experienced the UK healthcare market as somewhat resistant toward non-UK companies and services. Most systems used by healthcare in the UK were British, even though they were not the most advanced or efficient on the market. Even though Docly had only UK employees, and operated under its own UK branch, this caused a challenge, and meant more work had to be put in to gain trust.

5.4 HN Company

On the 8th of April 2022, Joachim Werr, the founder, and Executive Chair of HN Company, was interviewed. The interview was held in Swedish. The company is henceforth referred to as HN.

Werr is the founder of the Swedish company Health Navigator, which he sold in 2016. He thereafter moved to England to observe the healthcare market, which resulted in him officially starting the English company HN in 2017, inspired by the Swedish concept of Health Navigator. As of today, HN is operating in England, Scotland, and Ireland, and has approximately 60 employees in total.

HN provides a data-driven SaaS-platform (Software as a Service), applying AI to identify patients with an increased risk of serious illness, rapid disease development,

hospitalization, and death. Their solution is the result of a five-year research in identifying individuals, and it collects, and processes patient data based on algorithms, where the result will help the healthcare in prioritizing patients to prevent illness, costs, and death. The platform is currently live for 5,000 patients per year. HN also offers clinical resources, such as virtual ward & Supporter selfcare center, as well as consulting care providers in mapping e.g., costs.

5.4.1 **Approach**

HN's first efforts in the UK began in 2015, through an academic study. They applied for studies with the equivalent of the Swedish Scientific Counsel (Swedish Vetenskapsrådet), and this resulted in HN conducting a study which recruited 1800 patients over seven different hospitals. Werr says that an academic study is a relatively cheap option for companies to first enter the UK market, but it can take some time. How suitable a study is also depending on what type of technology the company provides. Technologies closer to the patient and care may be more suitable, but other services can also benefit from conducting a study. For HN, the study was a good first step, and several of the hospitals involved have now become paying customers. A study also provides an opportunity to prove service feasibility, and following effects, which any company looking to enter the UK healthcare market needs to prove. Ideally, not only the efficacy of the technology is proven, but also superiority to all alternatives existing on the market.

They primarily direct their services towards ICSs and PCNs, but also provide services to other parts of the UK healthcare system. The PCNs provide a unique opportunity where a group of local GPs are offered extra financing if they form a PCN through the Additional Roles Reimbursement Scheme (ARRS). The ARRS is intended for hiring more people within primary care, but this is not always possible due to a shortage of competence and staff. Therefore, the funding can instead be used for HNs services.

5.4.2 **Lack of Financing**

Werr describes a few main differences between the Swedish and UK healthcare markets. First, British healthcare has less financing, especially when it comes to money spent on new technology and development. While there might be extra money to spend on such things in Sweden, this is not the case in the UK. This makes it harder to convince a healthcare provider in the UK to purchase a service, since the money often must come from somewhere else. This further strengthens the notion that more proof of efficiency is needed when selling in the UK. Second, of all successful companies Werr has observed, regardless of capabilities and resources, it takes more than five years to get a name worth mentioning in the bigger discussions. In Sweden however, revenue went from none to SEK 70M in six years.

5.4.3 **Competition**

One of the main downsides with the market, addressed by Werr, is the market noise. To cut through the noise, Werr suggests having a clear strategy. A company must either find the one believing in the innovation, and that is willing to promote it, or find a competent person able to conduct a study for which is credible. A good idea and technology must be complemented with a track record.

Werr emphasizes that the UK market is exploited by companies from all over the world, making it a global market with more opportunities but also competition. His perception is that Swedish companies often underestimate the market, thinking the size of it entails a possibility of gaining a large customer share, but unaware of the large investment required. Finding the right competencies is difficult and costly, yet Swedish companies seem to be generally unaware of this.

5.4.4 **Market Knowledge and Networks**

HN hired British staff and senior personnel with NHS background early on in their UK entry. The people hired had deep previous understanding of the UK healthcare system, and the NHS, which provided knowledge regarding decision making and funding structures. Still, there are unofficial structures, which can be specific to a care network or ICS, that are difficult to understand.

During their time in the UK, HN has also worked with different accelerators, initially the Digital health London accelerator, and then the NHS innovation Accelerator (NIA), which is connected to one of the AHSN networks. The NIA works by sponsoring individual innovators through fellowships. Last year Werr had a fellowship, and this year the CEO of HN has a fellowship. By working with these, HN can state they are selected and promoted by the NIA, which is a stamp of quality, but also a possibility of accessing networks. However, the accelerators also have high requirements for the companies and technologies they take on, and it is often necessary to already have proven the innovation to work.

5.4.5 **Understanding the Customer Need**

It is not necessarily that a solution will be successful for improving efficiency. Werr mentions how current ways of working sometimes can be incompatible with increasing efficiency. Although a solution may be the answer to several problems with inefficiency, revenue, or patient satisfaction, it might not be wanted by the people it intends to serve. For a healthcare worker, improved efficiency and patient flows could mean shorter breaks, or a higher stress level. According to Werr, it must be fully understood what this paradox means for the specific company, and its solution.

5.5 Case Company Insights

Compilation of challenges experienced by the case companies can be found in Table 5.1. Based on what the case companies themselves perceived as successful approaches and solutions, the researchers have summarized company responses in Table 5.2. Responses are later connected to the corresponding challenge in the analysis.

Table 5.1. Case companies - compiled challenges.

• Identifying the right people is difficult
• Responsibilities may not be defined for new technology
• Information and contact information often inaccessible
• Lack of market knowledge major challenge
• Digital maturity varies, both geographically, and across different types of care
• Often necessary to have evidence from the UK
• Customers have high standards and requirements
• Understanding the NHS is difficult and time consuming
• Unspoken requirements and expectations from customers
• Trusts, CCGs, and other organizations can be organized differently across the country
• Unofficial structures make the system difficult to navigate
• Primary care is difficult to sell to because of the large number of individual GPs
• High competition in public procurement processes, especially challenging for smaller companies
• Many companies claiming to solve the same issues
• The market is crowded - difficult to stand out
• Global market with competition from the USA and Asia
• Risk-averse market - procuring services from smaller, foreign companies associated with higher risk
• Public sector subject to more regulations compared to private actors
• Some resistance towards non-UK companies
• Lack of financing in the NHS

Table 5.2. Case companies - compiled company solutions.

- Important to find people willing to drive innovations
- Forums and network key source of information and contacts
- Strategic/Planning document provide information and can help determine where to concentrate efforts
- Important to understand customer needs
- Understanding organizations
- Hiring local, experiences staff can provide market knowledge and networks
- Necessary to define scope - cannot sell to all healthcare areas and segments
- Concentrating efforts to relevant segments generates deeper understanding in those segments
- Important to have a clear strategy
- Identify where the service provides the most value
- Identify the uniqueness/distinctive trait of the offer
- It takes time to establish a company on the UK healthcare market - should be a long-term investment
- Local branch/employees can build trust/credibility
- Senior staff (from main office) may signal more credibility and sell better
- Pilot projects a way to gain experience and evidence
- Product Adjustments
- Academic studies can provide evidence of efficacy
- Need to show the product/service works - preferably better than other options

6 Results - Expert Interviews

This section accounts for the results from the expert interviews that were conducted. The results have been divided into insights on market challenges (RQ1), and the experts' advice to companies looking to enter the market (RQ2).

The interviewed experts, along with a short description of each interview, are presented in table 6.1 below. Additional background description of their field of expertise can be found in Appendix A.2.

Table 6.1. Interviewed experts and description of discussions.

Derek Kelly *Innovation Programme Manager, University Hospitals Dorset NHS Foundation Trust & Dorset County Hospital NHS Foundation Trust*	Areas of discussion were mainly focused to the NHS history of innovation and innovation adoption, current state of digitalization, efforts and organizations favoring innovation and how it is for a foreign company to enter the market. Kelly contributed to the as-is analysis and gave more insights of the NHS from within. Furthermore, the researchers gained understanding of NHS preferences and criteria regarding innovations, as well as what important aspects to consider when approaching the NHS.
Caroline Mellstig-Theimer Managing Director, Zenicor Ex-Business Sweden Project Manager UK Branch	As Mellstig Theimer has experience from helping businesses establish themselves in the healthcare market, the interview was focused on routes to market and necessary activates before entering. Moreover, the interview included aspects of frustration and complication regarding working towards the NHS and informed what to expect when reaching the market. The interview added to the business perspective as she shared her experience and thoughts proving the discrepancy between official information and practice.
Guy Boersma Strategy Development Director Kent Surrey Sussex Academic Health Science Network	The focus was mainly on AHSN's role, how they get linked to companies, innovations of interest and requirements for these companies. Boersma also gave a financial perspective, more specifically funding opportunities for companies in the initial stages. When discussing routes to market, Zymego was given advice on suitable approaches, and further, Boersma shared ways of speeding up the selling that he recommends looking into.

Harry Harrison Regional Partnership Lead (North of England) NHSBSA Strategy, Performance, Business Development & Growth	Harrison contributed to the study by giving insight on the current structure within the NHS. The remote interview also focused on ICS, what technology will be interesting in the near future, and how acquisition of technology will come to change when the transition to ICS is done. Insights where also given of the current digital level within the NHS and what plans and requirements there are for different actors to use EHR systems. Lastly, Harrison provided answers to questions regarding the case of Zymego specifically, such as the problem with waiting lists, possible routes to market and what main challenges they can expect.

When summarizing the expert interviews, the researchers have included all comments and insights, that by the expert, have been addressed as a challenge, and other issues arose during the interviews. Table 6.2 below shows the final compilation of expert comments. General advice on how to approach the NHS, are presented in Table 6.3.

Table 6.2. Experts, challenges.

• The NHS is not one customer - no central responsibility for purchasing new technology
• Care providers make their own decisions on what technology to implement
• System and decision-making fragmented
• Regions may be organized differently across the country - low transferability of knowledge
• Not always clear where mandates lie
• Some crucial information only accessible through talking with people
• Varying levels of digital maturity
• Generally low level of digitization and digital maturity
• History of poor financial situation within the NHS
• No financial incentives for GPs to implement new technology
• Some care providers, especially primary care, still paper based to some extent
• Old legacy systems do not speak with each other
• Very crowded market space
• Swedish companies tend to be naive about the competitiveness on the market
• Constant re-organizing within the NHS further exacerbates the issue of understanding the system
• Care providers want evidence of their own and does not necessarily trust evidence/results from other customers - even if it is from a nearby hospital
• One or a few sales will not lead to widespread adoption
• No critical turning point where sales became significantly easier

Table 6.3. Experts, company recommendations

• Make sure to get the opportunity to test the viability of the business model
• Do not pursue too many free pilot projects
• Be able to prove cost savings when selling
• Plan pilot projects to collect sufficient and right data to prove the service's efficacy
• Market research and understanding is crucial
• Make sure to meet necessary standards and criteria
• Long term approach and strategy necessary
• Be flexible, business models cannot always be replicated
• Local presence important

7 Analysis and Discussion

The following chapter contains the analysis of the results from interviews with case companies, experts, and the previous findings in chapter four. This chapter results in a framework which also answers the research questions RQ1 and RQ2 regarding challenges on the market, and how companies can respond to those challenges. The results from the multiple case study and expert interviews, and how well these align with previous findings, are also discussed in this section.

Based on the research questions, the first stage of the analysis compiles the results from the literature review, case studies, and expert interviews, to identify the main challenges for companies entering the UK healthcare market (RQ1). The second part analyzes how companies can respond to these challenges (RQ2) based on the input from case companies and experts.

7.1 Market Challenges

The analysis starts from the challenges identified in previous findings, compiled in table 4.1. The multiple case study and expert interviews then generated more data on challenges on the market, which were added to the original list. First, segmentation of challenges was done, grouped after similarities. This resulted in a long and comprehensive table, visible which challenges were supported by what source. This table can be found in Appendix C. Second, the challenges were condensed further through merging similar insights, and removing challenges which did not have sufficient ground from the experts and case companies. Third, the remaining challenges are aggregated into overarching challenges. Figure 7.1 below illustrates the process of arriving at the final aggregated challenges.

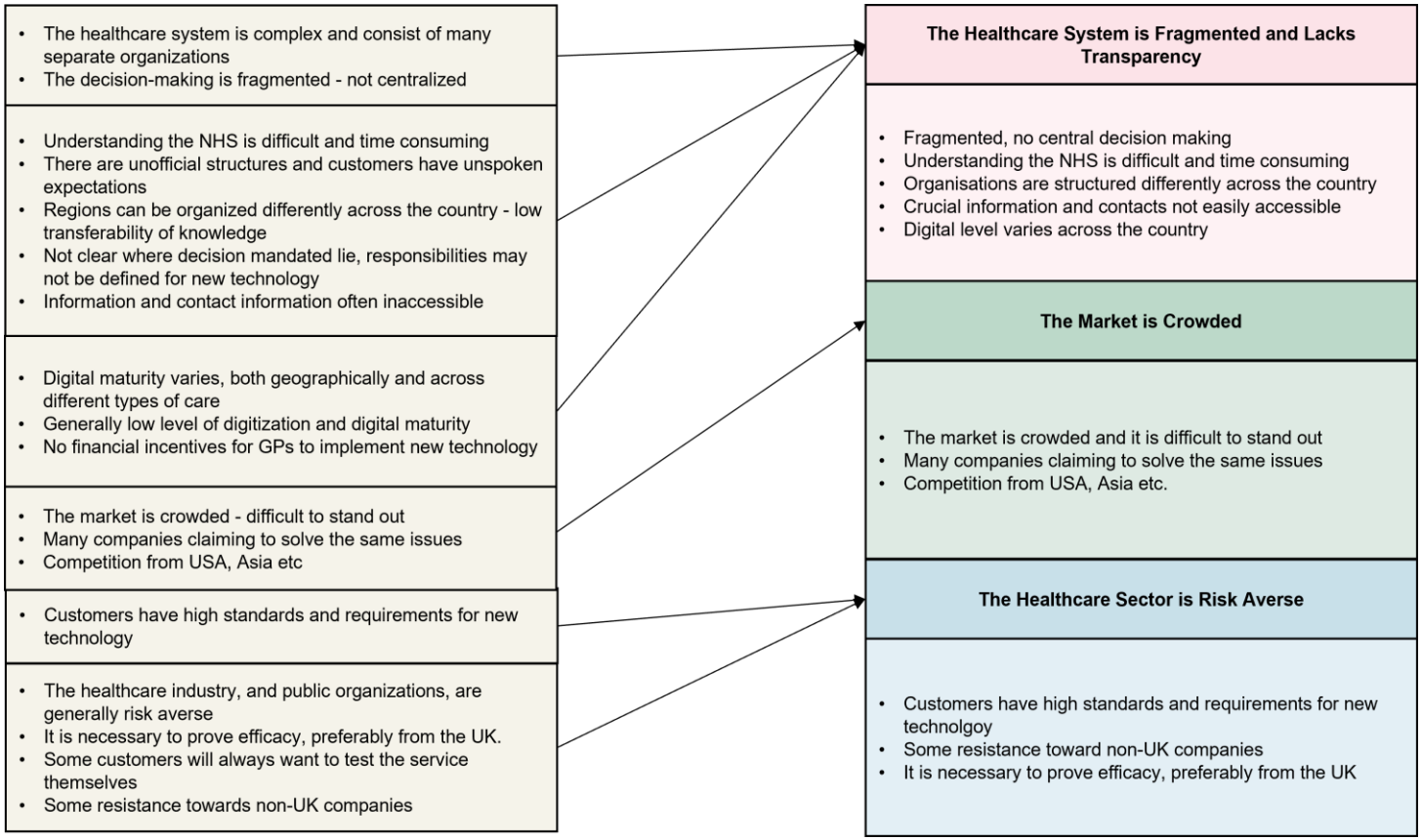

Figure 7.1 Illustration of the analysis process, arriving at final challenges and sub challenges.

Three overarching challenges were identified:

- The healthcare system is fragmented and lacks transparency
- The market is crowded
- The healthcare sector is risk averse

Each challenge is further elaborated on and discussed in the sections below.

After adding insights of experts and case companies, two new areas emerged which had not been identified as challenges after the literature review: lack of transparency issue and the fact that the market is crowded/competitive. On the contrary, some of the challenges identified in the literature review were not supported by companies and experts and were therefore removed.

The procurement process is not necessarily a core challenge for a small market entering company, as they rarely start selling in these environments. The problem is rather that for such a company, it is difficult to assimilate the knowledge required to participate and win a procurement. The high competition on the market also seems to be a contributing factor to making public procurement processes challenging, which further confirms the addition of competition to the list of challenges.

Technical infrastructure also proved to have less of importance than initially believed. Despite still being a problem within the NHS that needs to be taken care of, it does not seem to have crucially affected the case companies. In addition, the development is constantly improving, and in a few years, technology such as digital authorization and EHR systems will have advanced. Lastly, the financial situation of the NHS was removed, as this does not seem to be a challenge in and of itself but rather something that exacerbates other challenges. For example, it means there is less room for taking risks and companies must be able to prove the efficacy of their products and services.

7.1.1 The Healthcare System is Fragmented and Lacks Transparency

The fact that the English healthcare system and the NHS is fragmented is described by most of the case companies and all interviewed experts. They describe how the NHS may appear to be a single, centralized organization but this is not the case. Several of the experts interviewed state that the fragmentation is one of the, or the biggest challenge for a company wanting to sell to the NHS. This is consistent with previous findings, which stated that the fragmented system, and many actors poses a challenge for companies entering the market space and is a key reason why the NHS is slow to adopt innovations (Liddell et al. 2008), The fragmented system may

be an even bigger challenge for international companies, who do not have any experience of the English healthcare system, making it more difficult to understand.

The fragmentation can be seen in several areas. As described in section *4.1 NHS England*, the primary and secondary care works separately from each other, and consists of many different actors. The primary care is driven by almost 7,400 individual GP practices, and the secondary care is mostly organized through the 221 trusts. These organizations largely retain their decision-making power regarding many issues, as well as what services to purchase. This means that the decision making is very fragmented and decentralized. The organizations, even within a specific type of organization (e.g., trusts), can also be structured differently, which means that understanding of one establishment does not necessarily translate to others.

Furthermore, care providers differ when it comes to local priorities and capabilities. One expert explains how care needs vary between different regions because of differences in demographic composition. By extension, this affects the care providers priorities. Additionally, the level of digital maturity is not equal across the country's trusts and GPs. This was identified as a challenge after reviewing previous findings and was also strengthened by insights from experts and the case companies' experiences. This means that even if a product may be valued by a healthcare provider, it might not be a priority for the organization or region which it is part of. Furthermore, a customer who wants to procure the solution can lack the digital infrastructure to integrate it.

The fragmentation results in two main issues. First, it makes the system more difficult to comprehend and navigate. Companies, especially non-UK ones, must spend a lot of resources and time on understanding the NHS, and its organizations. Second, it means that new technologies, concepts, and innovations are unlikely to spread quickly across the NHS, since organizations act separately from each other with little coordination.

The poor transparency into organizations within the NHS system was not identified as a challenge in section *4.6 Challenges* but was identified as an issue through the interviews. However, some literature supports this claim with Liddell et al (2008) stating that companies struggle to identify decision makers and have access to little guidance when approaching selling to the NHS. Similar issues were mentioned by the case companies which also described difficulties in identifying the right people to talk to, or even finding their contact information at all. The transparency issue is highly connected to the fact that the NHS is fragmented, since that is the main reason why knowledge and information is not transferable between organizations.

The establishment of ICSs may have the potential to change the current situation in the healthcare system for the better, especially in terms of fragmented decision making. The idea is to create more integrated care which, in theory, should lead to a more unified system. However, this is not the first reorganization within the NHS.

One expert mentions how the NHS often reorganizes which only adds to the confusion regarding who is responsible for purchasing a service.

7.1.2 The Market is Crowded

The market being crowded was not identified as a challenge in the literature review, this became apparent from the interviews with experts, and companies. All experts describe the crowded marketspace as one of the major challenges for companies, and two of the case companies also mention this as a challenge. The other two companies not mentioning the competition as a major challenge could be explained by the fact that their segment (Visiba and Docly working with care over digital platforms) may be less crowded. One expert also mentioned that Swedish companies tend to be naive about the level of competition on the market, which also could help explain why it is not mentioned by all case companies.

Both experts and company representatives highlight that the UK is a global market, which makes it different from the Swedish market. It is an attractive market for many, which brings actors from all over the world. One expert, working within the NHS, describes how he is contacted by upwards of hundreds of companies each week. It is important to be aware of this level of competition, especially for smaller companies.

A crowded market, and the high levels of competition, makes it more difficult for companies to stand out and differentiate themselves. The fact that the NHS is under some financial strain further exacerbates the issue since it is inconsistent with taking risks. According to HN, the poor financial state of the NHS has put further pressure on companies. They must be better than existing alternatives to be considered, as an NHS organization may have to reallocate funds from other on-going projects.

7.1.3 The Healthcare Sector is Risk Averse

Several companies describe how the healthcare sector, and consequently the NHS, is risk averse. This is consistent with previous findings which indicated that the structure of public procurement is not compatible with risk taking (Edler et.al 2015), suggesting that the NHS wouldn't be inclined to take risks. According to one of the NHS experts, it is not enough to show patient benefits, but one must be able to demonstrate possible cost savings as well. The literature review and the experts point out the financial situation of the NHS, making it unlikely that they would acquire technology that does not contribute to reduced costs. Since the market is exposed to competition, and has many suppliers to choose from, it appears natural that they can be selective, as there probably will be others delivering equivalent services at a lower price.

To minimize risks, a large emphasis is placed on quality measures, and some companies describe how the UK is stricter regarding meeting requirements. As mentioned in the literature review, there are several ways in which the safety and quality of services acquired by the NHS is ensured. What appeared during the interviews, primarily with case companies, was that it is also not uncommon to encounter unofficial expectations and requirements. NHS organizations are constantly looking for evidence to minimize risk-taking when adopting innovation. There also seems to be a difference of opinion as to what the cause of NHS' fear of risk is, and who it affects. The experts within the NHS say that it can be explained by the lack of resources, that there are no margins for investing in solutions not streamlining or reducing cost. Case companies generally consider NHS organizations to associate international companies with even higher risk, and thus be punished with stricter requirements.

Some companies think that NHS risk aversion makes it more difficult for foreign companies to enter the market. One expert in the NHS states that there seems to be a "not invented here" mentality within the NHS, but also emphasizes that there is an interest in bringing in international companies to the UK. While several companies expressed to have experienced some resistance against foreign companies, HN believes that this is not the case, but rather that it ultimately depends on how well one can prove the technology to be worthwhile an investment. Foreigners do not necessarily have to be associated with a higher risk, but it is conceivable the perceived resistance, described by the companies, may rather have to do with them being less familiar with how the market works, prevailing requirements, and what is expected of them. It can also be more difficult to maintain professionalism, and there may be several traps that are easier to fall into if the company is not from the UK, for example regarding linguistics or cultural differences. Reasonably, NHS organizations' decisions are not governed by descent, but by what the public sector benefits most from, only that the threshold may be higher for international companies to compete with domestic companies.

Evidence of a service's efficacy also seems to be an important component in selling to this NHS, as it reduces the perceived risk. Many companies describe how UK evidence is necessary, yet some experts claim that examples from other countries can be useful as well. NHS experts emphasize that there are some NHS organizations that will want to make their own evaluations despite local evidence, but that evidence from abroad may still be useful. The need to provide evidence poses a major challenge for international companies, and they should expect a high initial threshold as they will be associated with a high risk.

7.2 Company Responses

This section aims to answer the research question RQ2 regarding how companies can respond to the challenges on the market. The results from the case company interviews (Table 5.2), and the advice from the expert interviews (Table 6.3), were sorted and linked to the challenge which responded to. Figure 7.2 below illustrates the connections between challenges and responses.

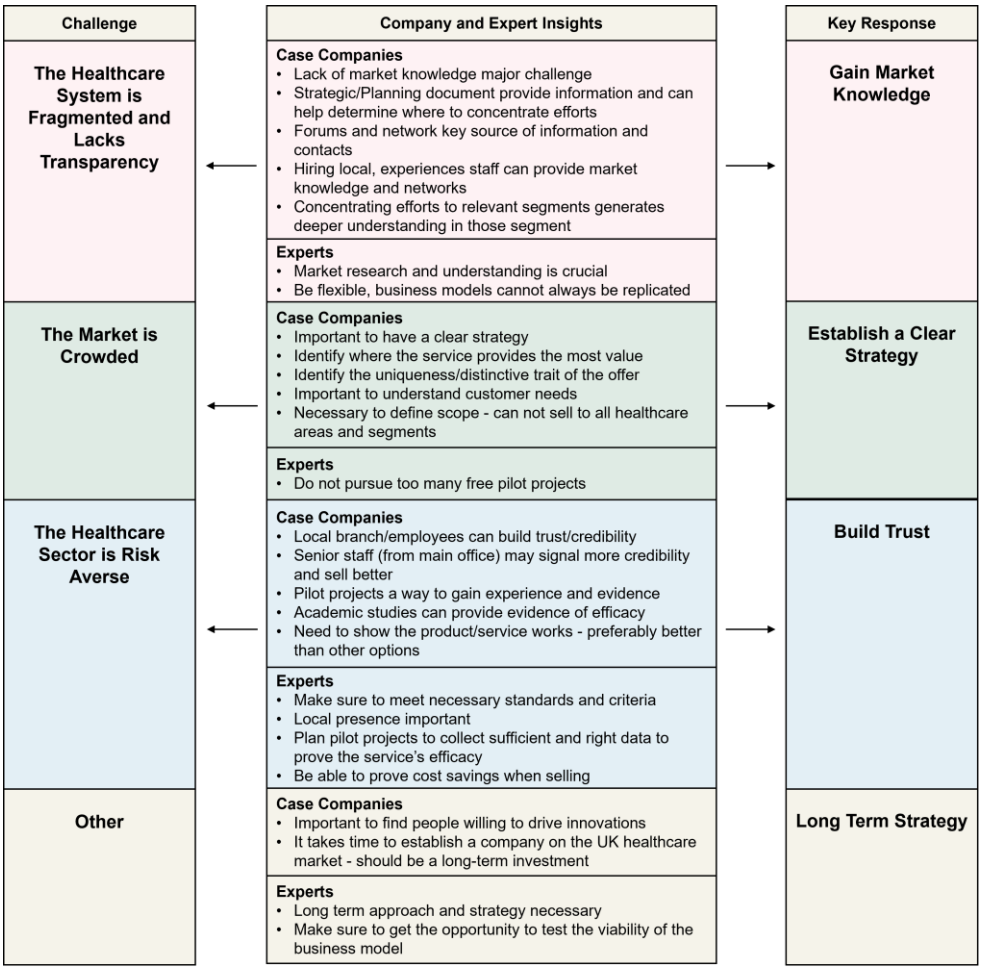

Figure 7.2. Company and expert insights linking challenges and responses.

This resulted in a key response or strategy to overcome each of the identified market challenges, see Figure 7.3 below.

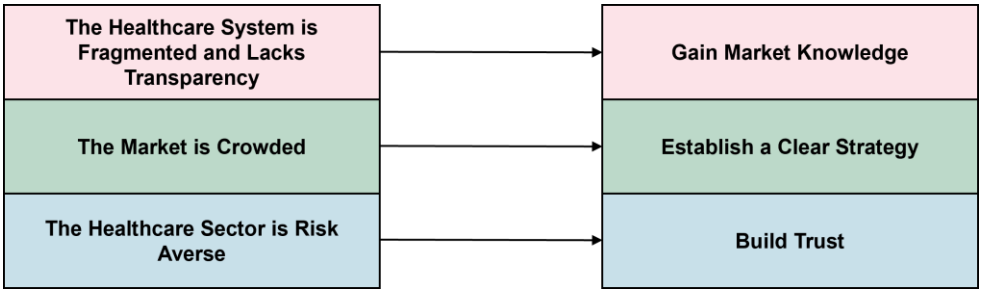

Figure 7.3 Key company response per key market challenge.

Besides the strategies to deal with the main market challenges, both companies and experts highlight the importance of having a long-term approach when entering the UK healthcare market. It takes both time and resources to establish a company on the market. For example, both gaining market knowledge, acquiring sufficient evidence, and building trust, can all be time consuming activities. None of the companies in this study have reached a "critical point" where new customers are gained more easily. Mellstig Theimer (2022) explains how most of the companies she helped during her time with Business Sweden are still relatively small on the market, despite being active for between 5-10 years.

The following sections of this chapter further discusses these strategies and results in concrete actions for a company to take to deal with the market challenges. The conclusions from this section are used in the final framework.

7.2.1 Gain Market Knowledge

Because the market is fragmented and lacks transparency, the company must gain market knowledge.

Several case companies describe the importance of understanding the market, and how it can be difficult to gain sufficient market knowledge. The case companies also provided input on how market knowledge can be gained. Several experts also highlighted the importance of knowledge and comprehending the market. In relation to the Business Model Canvas, market knowledge can be seen as a key resource for a company looking to enter a new market.

Market knowledge being a crucial component in a company expanding to new markets is consistent with the Uppsala internationalization model, which establishes market knowledge as one of the four main aspects of the internationalization process. The Uppsala model also states that further commitments on the market are dependent on the acquisition of market knowledge, and that the process is a gradual one (Johanson & Vahlne 1977). This is also consistent with insights from companies and experts. The fragmentation and lack of transparency in the healthcare system makes the acquisition of knowledge more important, but also more difficult.

In contrast, theory on Born Globals implies that companies yet can succeed without any thorough market knowledge (Knight & Cavusgil 2004), and that access to information has enabled companies to easily operate abroad (Madsen & Serveis 1997). While many of the case companies in this study could be considered Born Globals, due to their relatively fast expansion to other geographic markets, it seems the internationalization process on the UK healthcare market is more consistent with the Uppsala internationalization model. Impediments for fast growth in the market are several, such as complex and protracted public procurement processes (Edler et.al 2015), demanding the full comprehension of the company. A company can thus impossibly have the fast-paced approach of a Born Global, as this would result in hasty and inaccurate decisions, making a gradual process approach inevitable.

Market knowledge seems to be important in all stages of a market entry. Initially, some general knowledge is necessary to determine the target customer group, and how it can be sold. One expert mentions that initial market research needs to be conducted to determine if there is a need for the product. Furthermore, market knowledge is necessary to understand how healthcare organizations work, who is responsible for purchasing, and what the customers' expectations are. Not understanding the market, or having sufficient knowledge about NHS organizations, is a common area in which companies fail, according to an expert within the NHS. There are several ways in which companies have gone about acquiring information. AllAid highlights the importance of speaking with people on all levels of the healthcare system, and especially the people intended to use the service. As described by Ghodeswar & Vaidyanathan (2007) the end-user of a healthtech service is not necessarily the purchaser, which is important to be aware of.

Both Visiba and AllAid mentions some organizations which helped them in gaining market knowledge. These organizations seem to be a good first step in acquiring information, and often have extensive networks, which can be useful in finding the right people to contact. HN could also utilize the network of NHS Innovation Accelerator, which they were a part of.

Docly and HN Company acquired most of their knowledge through hiring people with experience in the UK healthcare system and market. For these two companies, the approach seems to have been successful. For Visiba and AllAid however, which have also hired experience at some point, it did not lead to the desired result. This can be linked to the concept of experiential and objective knowledge, where Johanson and Vahle (1977) conclude that the experiential knowledge is most critical. Certain knowledge can only be obtained through personal experience and is not necessarily transferable between people and circumstances. This could explain why it, in some instances, seems to be better to gain market knowledge organically, rather than solely relying on new hires or partners.

The collected insights on how a company can gain market knowledge are compiled in Table 7.1.

Table 7.1. Activities to gain market knowledge.

Talk to people on all levels in the healthcare system
Utilize networks and organizations
Use strategic documents published by the NHS and other organizations

7.2.2 Establish a Clear Strategy

The UK healthcare market is crowded compared to the Nordic markets, which makes it more difficult and competitive for small companies to distinguish themselves. To deal with this challenge, a clear strategy and scope is necessary. This conclusion is drawn based on both the interviews with case companies and experts and seems to be consistent with literature in the area. Having a clear strategy, and a well-defined scope, is not mentioned by all the interviewed case companies. However, this can be linked to the fact that companies tend to be somewhat naive about the competition on the market, mentioned by experts. The need for a clearly defined strategy also relates to the fragmented nature of the UK healthcare system and the NHS, since it would take too many resources to target the whole market.

A company's strategy relates to several blocks of the business model canvas. Primarily, a company's offering and customer segments. To establish a clear strategy, a company must both define their value proposition and target customer. This can be identified as success factors through the interviews but is also consistent with McKinsey's (2021) attributes of what contributes to a successful digital health business, where a clear value proposition is one such attribute.

Defining a strategy is associated with some key activities. To find a suitable scope, the company first needs to define what core value they can provide its customers. Ideally, this should be based on what the company does best, and the uniqueness in their offer compared to competing options. As stated by Rogers (1983) in the theory Diffusion of Innovation, the uptake of the innovation will be faster if perceived better than the existing alternatives, as relative advantage is a key attribute considered by customers. A distinctive product positioning is also emphasized by Knight & Cavusgil (2004), as a crucial factor in a Born Global's success, which can be achieved by clearly defining what value the solution provides, and to whom.

AllAid describes how they clearly defined their scope in the second attempt to enter the market and believed it to be key. The core value can be used to identify what the target customer group is, and a clear message is also important later in the sales process to effectively convey the value to potential buyers. For digital products and services, the main value provided may be rooted in increasing efficiency, reducing costs, providing better care for patients, or some combination of these. This is all highly relevant to the NHS, and healthcare in general. One expert describes how

cost reduction is of high interest in the NHS, and for an organization to invest in new technology, it often needs to be able to show long-term cost reductions.

When the core value has been identified, the company can identify where in the healthcare system their offer will be valued the most. This relates to compatibility, which is another key attribute customers consider when evaluating new innovations (Rogers 1983). A customer is more inclined to adopt the innovation if it is compatible with their needs, which is why it is crucial to target customers whose needs are best served by the service. For example, AllAid identified that selling to trust would be the best approach for them, and that their service could provide the most value in mental health care. This could then be scoped down further to specific areas of mental health care after more market research had been done. Visiba on the other hand, has had a more fragmented strategy which they are now looking to narrow their scope. While they recognize it might have been better to concentrate efforts on a specific area, they also viewed their initial fragmented sales strategy as a way of finding a suitable scope. However, defining a scope from the beginning is most likely more resource efficient. When defining the customer, it can also be important to consider which route of selling to the NHS is most suitable. For example, while there are many, and big, opportunities in selling through the NHS supply chain or tenders, these routes are more competitive compared to selling directly to care providers.

Strategic documents and long-term goals within the NHS can provide good guidance on where more funding and resources will be spent in the next couple of years. This is useful both to identify a broader scope and specific customers, as these (trusts/CCGs/ICSs) also publish their own strategies and priorities. Even within a narrower scope, the most attractive customers can be found through segmenting customers based on geographics, demographics or digital maturity.

A clear strategy is a necessity to know where to concentrate efforts and to stand out on the market. An expert mentioned how many companies without a clear strategy will waste time and resources on projects and customers that are incompatible with their long-term goals. Furthermore, concentrating on a narrower scope can help in gaining more relevant market knowledge, and get a deeper understanding of the dynamics of the target customer's organizations. The collected insights on how a company can establish a clear strategy are compiled in Table 7.2.

Table 7.2. Activities to establish a clear strategy.

Identify core value and distinctiveness
Define target customers
Further narrow the scope

7.2.3 **Build Trust**

Healthcare is, naturally, a highly risk averse sector. Because of this, companies need to build trust with their customers. This is consistent with previous findings on B2B marketing, and the fact that concentration of buyers along with continuous purchasing increases the importance of supplier-buyer relationships (La Rocca 2020).

Several of the companies mentioned the importance of meeting quality requirements. What kind of quality assurance the service is subject to depends on the type of service and how close it is to the patient care. A company looking to enter the UK needs to know the relevant quality measures, and make sure the company and products meet these requirements. If formal standards are required, it can take a long time to gain such certifications, which makes it more important to find out early on what is expected. Standards and quality requirements are also subject to change, especially because of Brexit, which means they need to be continuously maintained.

Another important aspect of building trust seems to be having a local presence on the market. However, how the companies have chosen to achieve this differs. Some have chosen to establish a UK branch of the company, with UK employees, while others have chosen to travel to the UK. For some businesses it can be required to have a branch in the country, or a national representative responsible for the company's operation in the UK. However, it is also important to be present on the market to gain credibility and trustworthiness. While local staff may contribute to a company's trustworthiness, some of the case companies say it is more difficult for newer employees to sell services, and that more sales have been achieved with more experienced, senior staff (often from the Swedish office). One explanation could be that seniority also contributes to the company's trustworthiness.

The risk averse market also means there is a lot of emphasis on evidence of the service working, and what value it brings. Several companies also mention how customers often request evidence from the UK market and will not rely on evidence from other countries. Therefore, many companies initially run one or a few pilot projects or studies in the UK. There are some things that are important to consider when running pilot projects.

First, make sure to collect the right data from the project in a reliable way, which can later be used to prove both the efficacy of the product, as well as any other benefits, such as cost reductions. This can later be used to evolve the pilot to a real, paying customer, and to market the service towards new customers. Second, one expert warns against wasting too many resources on pilot projects, especially the wrong ones. It is important to have a strategy around which pilot projects the company takes on, that they are within the right scope, and that they can turn into profitable customers in the future. The expert also cautioned against conducting too

many free pilots. Not only is there a risk of wasting a lot of resources, yet it is also important to test the business model and profitability of the service.

The importance placed on evidence, trials and pilot projects could indicate that out of the five attributes customers consider when adopting an innovation, as described by Rogers (1983), observability and trialability is of particular importance to the healthcare sector and the NHS.

The collected insights on activities to build trust are compiled in Table 7.3.

Table 7.3. Activities to build trust.

Meeting necessary standards and requirements
Have a local presence
Fully utilize pilot projects

7.3 Concluding Framework

The analysis is concluded in the following framework, Figure 7.4, which illustrates both the challenges companies face on the market as well as the strategies that can be utilized to overcome them. This figure answers research questions 1 and 2 of this thesis. The framework is general, but the activities under the company responses can be applied to a specific company based on their distinct service and conditions.

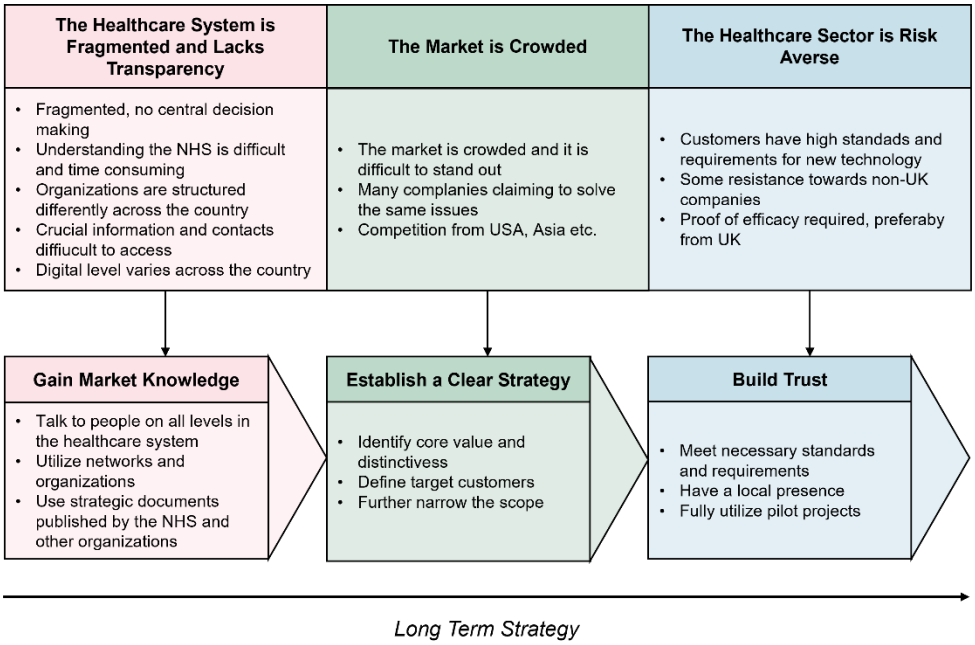

Figure 7.4. Framework of challenges on the UK healthcare market, and how companies can respond.

8 Applying the Framework on Zymego

In this section, the framework developed in chapter 7 is used and applied to the company Zymego to answer RQ3: How should Zymego approach a UK healthcare market entry? Each company response, and their respective activities, is detailed and concretized based on Zymego's specific product and situation. The conclusions drawn are based on current available knowledge, and conclusions may be subject to change as further market research is conducted. The contents in this chapter were also discussed in a workshop with Zymego.

8.1 Gaining Market Knowledge

While this thesis provides a foundation of market knowledge, Zymego will need to do further market research. For Zymego, it is of importance to understand what expectations customers and patients have on a service such as theirs.

As previously discussed, gaining market knowledge does not necessarily have to be an organic process. Market knowledge can also be acquired through hiring people with relevant knowledge and experience. However, for Zymego, this is likely not necessary at this initial stage. The researcher's assessment is that Zymego's resources are not yet sufficient to make this investment. For several of the case companies that hired people early on, also had to do so for legal reasons, which do not apply to Zymego. For this initial stage, Zymego should focus on gaining market knowledge on their own. This will provide them with experiential knowledge, specific to their circumstances. It will also be more resource effective, and further investments can be made later when the company is ready to further commit to the market.

Zymego should try to continuously increase their understanding of the market, and when they assimilate more knowledge, the focus should be on answering the following crucial questions:

- Where is the greatest need for our service?
- What does the competitive situation look like?

- How does the service fit existing ways of working?
- What requirements and expectations are there, from all stakeholders?
- How is the organization built and what do authoritarian structures look like?

Gaining market knowledge is not necessarily an independent phase but is also something that can be done in parallel with carrying out smaller projects with different types of customers, which intuitively can generate even more knowledge. The process of gaining market knowledge should also continue throughout the company's entry into the UK healthcare market.

Talk to people on all levels in the healthcare system

A key activity in gaining market knowledge and understanding, is speaking with different people and actors throughout the healthcare system. This is to learn about the needs and priorities of healthcare workers and purchasers, as well as gaining understanding of how healthcare organizations function and are structured.

It is necessary to speak with people on different levels in the healthcare system, including both nurses, administrators, doctors, and people responsible for purchasing. When speaking with the people who will use the service, or be directly affected by its implementation, the focus should be on understanding their current problems and workways. This information can then be used to identify how and where the service can alleviate the current issues, and if there are any barriers for the service to be adopted. A potential concern for Zymego's service is that it may not be compatible with current ways of working for doctors and nurses. For example, unfilled appointments may be used to do other tasks, which healthcare workers otherwise would not have time for. This type of barrier may be easily combated but important to be aware of, nonetheless.

Another reason why it is crucial to speak with different stakeholders in organizations is to gain understanding of relevant structures, both official and unofficial. This kind of information is largely inaccessible other than through speaking with people within the organizations. Identifying who is responsible for purchasing services such as Zymego's should be prioritized. It is also possible that such a responsibility is undefined, in which case more work may have to be put into finding someone willing to drive such a project. Furthermore, speaking with healthcare planners, commissioners and people working with purchasing for care providers, should clarify their priorities and requirements for digital services.

Utilize networks and organizations

To identify and contact relevant people, Zymego should utilize networks, forums, and organizations. These organizations do not solely provide contact information but can also contribute to Zymego gaining a deeper understanding of the market, as

well as give important advice. For example, information on what requirements apply for trials or pilot projects, which Zymego can use to build a reliable case, meeting both official and unofficial requirements, and expectations.

Zymego's service can be used in a wide range of areas, meaning they can reach out to several different organizations and bodies within the NHS. In addition to contacting actors directly, there are organizations that specifically work with helping companies enter the market. Initially, Zymego should start with contacting AHSNs and NHSX/NHS Digital. According to Kelly (2022), AHSN usually is the first point of contact for any company trying to get into the NHS. NHSX and NHS Digital can potentially provide guidance on what actions to take next. Zymego should also make sure to register to HealthTech Connect (see Appendix B). In this way, Zymego will be exposed to a variety of organizations, including AHSNs. The organizations do not use the register in the same way, AHSN however, uses the register to review solutions, and possibly match these with a suitable AHSN in which to trial the service.

Attending events is a good way to deepen their knowledge in how the NHS is structured, and how different organizations operate. The focus should initially be on absorbing information to the furthest extent, from people on all levels, departments, and organizations within the NHS. As these events attract people with interest in technology, it is also a good opportunity to make useful contacts, for example with healthcare professionals and decision-makers. The network that Zymego establishes during fairs and events will in all probability come to use in the future. After a period, Zymego can shift its focus and attend events with an agenda, being more goal-oriented on who to talk to, and what the conversation should result in.

Accelerators, such as the NHS Innovation Accelerator, also provide an interesting opportunity for Zymego. Similarly, to other organizations, accelerators can provide networks and contacts but can also, if Zymego should be accepted, signal a certain quality to potential customers. However, accelerators will usually also want to see proof of the service's efficacy, which is why it may be more suitable later in the process.

Use strategic documents published by the NHS and other organizations

Strategic and planning documents are another key source of valuable insights. On a national level, these can provide information on prioritized areas. However, digitalization and improving efficiency is a priority across most healthcare areas. Therefore, strategic documents on a more regional or local level may be of more importance for Zymego. Many trusts, CCGs, or ICSs, have their own digital transformation strategies, roadmaps, or similar reports. This can be a good way of determining if the organization has a sufficient level of digital maturity to adopt the service.

Besides identifying which organizations have priorities that seem to align with using the service, these documents also reveal key phrases and wording, which is useful to incorporate in Zymego's own messaging towards customers.

8.2 Defining a Scope

The general framework highlights the importance of having a clear strategy to navigate the crowded market. This section goes through the activities in defining a strategy or scope on the market, and underlines relevant considerations for Zymego. However, as Zymego gains market knowledge and experience on the market, their strategy and scope may change.

Identify core value / distinctiveness

Zymego identifies their distinctiveness as the fact that their services solve real issues and originates from the experiences of healthcare professionals and patients. In comparison to other existing alternatives related to booking systems, Zymego believes they are unique in that their service does not focus on making bad practice more effective, but rather eliminate those by embedding the practices into the software. The service relieves doctors and nurses from administrative tasks they otherwise would have to do, which allows more time to be spent on patient care.

Not all new innovative technology is developed to aid both care providers and patients. For example, digital communication in chat form, which improves accessibility for patients, but brings more workload to care providers. Zymego however, has put emphasis on avoiding such unwanted side effects, and has developed a service beneficial for all parties involved, with a slightly stronger focus on care providers.

Find opportunities / Define target customers

Zymego's core value is that they solve issues for both patients, and healthcare staff, through shortening waiting times and simultaneously unloading administrative work. As these issues are prevalent in most areas of healthcare, the potential scope for the service becomes quite large.

The service can provide value in both primary and secondary care. While there is a greater volume of appointments in primary care, and likely a larger number of unfilled appointments, the unutilized appointments in secondary care are usually associated with a higher cost.

As previously mentioned, while gaining more understanding of the market and UK healthcare, Zymego should focus on determining if there are any specific areas of

care that have a more significant problem with long waiting times or backlogs. If there are, these sections of care are likely a good opportunity for Zymego.

The best option for Zymego is likely selling directly to care providers. While there are other routes, as described in *4.1.5 Procurement Channels*, these are subject to more competition, and several experts mentioned how the product or service often must be marketed towards the providers anyway. One option is to sell through CCGs, ICSs or PCNs, especially if selling towards primary care. One expert also mentions NHS Digital as a possible entry point, as they run the NHS App, which Zymego's service could be integrated to.

Narrow the scope further

Since the service can be used in most healthcare areas, and is relevant for both primary and secondary care, Zymego should instead narrow down their scope based on other factors, for example digital maturity, geographic area, and demographics.

As described in section *4.4.5 Digital Maturity*, the digital maturity can vary drastically between different care providers. Several experts also describe how the general level of digital maturity across the NHS is low. Zymego's service relies on integrations with either booking and/or EHR systems, which is why a certain level of digital infrastructure is necessary for successful implementation of the service. Also, a care provider more accustomed to using digital technologies will likely be a better customer for Zymego.

The DMA score can be a good way of identifying target customers. Especially the Global Digital Exemplars and Fast Followers, identified by the NHS, could be a good target. The DMA only applies to trusts, and there is no equivalent score for GPs. However, based on expert interviews, GPs and primary care generally have a lower digital maturity, and less developed digital infrastructure. If Zymego sells their service towards the primary care, it would likely be through a PCN or a ICS. These may have their own digital strategies, which can reveal the level of digital maturity. As one company described, it is still challenging to sell towards primary care as the service must be implemented with many individual GPs, and thus consumes resources. Because of this, along with the generally lower digital maturity, trusts (acute trusts), and secondary care, is likely a better target segment for Zymego

Less digitally mature care providers are not necessarily excluded from the scope, but it is likely preferable to initially target the more digitally advanced trusts, a conclusion which can be drawn from DOI theory. While much of the theory on DOI is focused on consumer products, the principles can still be applied to B2B, and B2G settings. Companies and public organizations also have varying levels of digital maturity, which might also correlate with the organization's willingness and ability to innovate. One key factor for a successful market entry can therefore be to identify

the “innovators” of the potential customers. These are more likely to be interested in the service and can also serve as examples for other potential customers.

Another way to further narrow down the scope is by geographic area, and the local demographics and population density. First, very urban areas are naturally subject to more competition, which is why it may be easier to find customers outside of the London area. Second, for Zymego’s service, it may also be preferable to avoid sparsely populated areas. If distances between the patient and the care provider are too long, this might affect the ability of patients to fill up canceled appointments on short notice.

8.3 Building Trust

To overcome the healthcare sector’s risk aversion, Zymego must prioritize relationships with existing and potential customers to build trust. The activities to achieve trustworthiness, concerns putting effort in meeting customers’ expectations and requirements, showing dedication and professionalism, as well as leveraging conducted pilot projects. Efforts to build trust is a key part in establishing the company on the UK market and maintaining relationships with customers is an ongoing process if the company is present on the market.

Meeting necessary standards and requirements

For Zymego to establish themselves as professional and reliable, they need to meet the necessary standards and requirements. Through the acquisition of market knowledge, for example by talking to networks and organizations, Zymego should get an idea of the most common criteria, be able to meet these if not already met, and apply for the appropriate certificates, standards, or criteria. A good start would be to contact NICE to get an understanding of national guidelines and requirements. Zymego should also focus on finding out the specific requirements and expectations of the potential customer and organizations they encounter.

Common certificates in the UK often apply to products and services involved in or close to the clinical work, and not necessarily to administrative solutions like Zymego’s. Experts indicated that there are no formal legal requirements, which a service such as Zymego’s must meet. However, organizations may have their own criteria for such services. Several care providers and other organizations use the criteria called DTAC as a guideline to ensure the quality of a service. Having DTAC approval would likely be beneficial to Zymego. Not all NHS organizations use DTAC as a guideline when acquiring new technology but can signal a certain level of quality and security even if it is not used. For a company like Zymego, the process, from application to approval, can be expected to take from 3-6 months. The investment is also relatively small, and not particularly resource intensive.

Local presence

Having some sort of presence is crucial for the company's chances in succeeding on the market. Zymego's service will not require them to have a local branch, or a local representative. They should instead focus on building up their operations with available resources, until they have gained some customers. This will both allow Zymego to economize resources, and at the same time gain trustworthiness and credibility. Interviews with companies indicated that involvement from the main office, preferably through a senior employee, was an important factor in the initial stages of a market entry. It takes some drive and commitment to gain pilot projects on the market, which is difficult to achieve with a separated branch or distributor. The multiple case study also indicated that it is easier to conduct business with a physical presence, which is why it is likely necessary to travel to the UK occasionally. If someone is eventually hired to work specifically with UK operations, in the UK or Sweden, it is important that a connection with the main operations remain, to make to most of the experiential knowledge within the company.

Fully utilize pilot projects

Gaining sufficient evidence of the service's efficacy Zymego is a crucial aspect of building trust and credibility. This kind of evidence can be gained from pilot projects or academic studies. It seems customers within the NHS puts more emphasis on evidence from the UK which it is important to conduct some sort of trial there and not only rely on evidence from pilot projects in Sweden. For Zymego, it is likely less relevant to conduct an academic study, as the solution is not a medical service, and the effects can be seen rather quickly. Instead, pilot projects are preferable. There are many ways to gain a pilot project, for instance through an AHSN or directly contacting interesting care providers. The most important point is that when a pilot project is conducted, the right data needs to be collected to use as evidence and leverage with future customers. For the evidence to be strong, Zymego must inevitably make sure to measure all possible effects that can be detected from a real case, and not just measure the most obvious data points, like appointments filled. For example, this could be measuring any reductions in time spent on administrative tasks related to booking and rebooking of appointments, which in turn result in cost savings.

Another important aspect of pilot projects is that one should be careful not to conduct to many free pilots with little potential of leading to paying customers. One expert also mentions that eventually the company needs to trial their business model and profitability, which is difficult to do through non-paying pilots. For any free pilots conducted it is even more important to make sure it can be used as evidence in future sales. Another aspect of this is that NHS providers want to see evidence from organizations as like them as possible, which is why pilot projects in organizations within the target segment should be prioritized.

9 Conclusion

This section presents the results and answers to the research questions. The reliability of the results and any limitations, the thesis' contribution, and suggestions for further research are also presented and discussed.

9.1 Concluding Results

The goal of this thesis was to answer the research questions presented in *1.4.1 Research questions*. The results and answers have already been presented throughout the report but are also summarized here.

RQ1: What are the main challenges for a healthtech company entering the UK healthcare market?

The main market challenges identified are that (1) the healthcare system is fragmented and lacks transparency, (2) the market is crowded, and (3) the healthcare sector is risk averse. These challenges, along with sub-challenges, are presented in Figure 9.1.

The Healthcare System is Fragmented and Lacks Transparency	The Market is Crowded	The Healthcare Sector is Risk Averse
• Fragmented, no central decision making • Understanding the NHS is difficult and time consuming • Organizations are structured differently across the country • Crucial information and contacts diffiucult to access • Digital level varies across the country	• The market is crowded and it is difficult to stand out • Many complanies claiming to solve the same issues • Competition from USA, Asia etc.	• Customers have high standads and requirements for new technology • Some resistance towards non-UK companies • Proof of efficacy required, preferaby from UK

Figure 9.1. Market challenges for healthtech companies entering the UK healthcare market.

RQ2: How can healthtech companies respond to the challenges on the market?

The main company responses to address the market challenges are (1) to gain market knowledge, (2) have a clear strategy, and (3) to build trust. These responses, along with specified activities to achieve this respond, are presented in Figure 9.2. The figure also illustrates what response refers to what challenge.

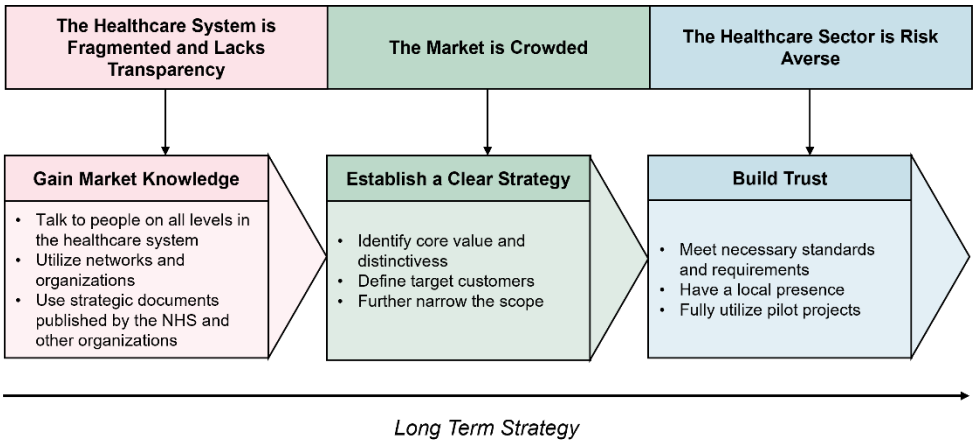

Figure 9.2. Company responses with specified activities per market challenge.

RQ3: How should Zymego approach entering the UK market?

How Zymego should approach the market is partly answered by the conclusions to RQ1 and RQ2. As these are general conclusions, they apply to Zymego as well as other healthtech companies. In chapter *8. Application of Framework on Zymego*, the framework is built on and applied to the specific circumstances of Zymego. This results in a discussion of the implications the general conclusions have for Zymego and concrete recommendations where possible. The conclusions can be found in chapter *8. Application of Framework on Zymego*.

9.2 Reliability and Limitations

Section *3.7 Research Quality* describes the measures taken to ensure that the research quality was as good as possible, based on the criteria *credibility*, *transferability*, *dependability*, and *confirmability*. However, all research has its

limitations, which is also the case for this thesis. The limitations of the conclusions are discussed in the sections below.

The *credibility* of the conclusions could be disputed based on the relatively small number of interviews conducted. If more interviews had been conducted, with a wider range of experts, a higher level of credibility could have been reached and increased the chance of identifying more disagreements between different stakeholders. As the experts were selected, the researchers wanted to ensure both the internal and external perspective being covered. However, the interviewed experts still only cover a small portion of actors and areas of expertise. Reasonably, some internal experts will promote the services and support provided by their organization. Since only four experts were interviewed, their biases are likely to have an impact on our result, which possibly could have been different if another four experts had participated in the study.

As for *transferability*, the researchers aimed at including a wide range of different companies, however, it can still be argued that the case companies are relatively similar to one another. As the researchers needed to design a framework applicable to Zymego, the criteria for selecting companies were decided on with Zymego's business in mind. It would have been possible to get a wider transferability of the framework with less strict criteria.

In terms of *dependability* and *confirmability*, a potential weakness of the conclusions lies in the fact that there is some subjectivity in the analysis. While the analysis is conducted in a structured way, the researchers' own biases could have played a part in how information was interpreted and presented. Although the conclusions were based on several sources and validated with supervisors, other researchers may have reached different conclusions. Furthermore, the theories and models used in this thesis have a large impact on the results and conclusions. Particularly, the PESTLE framework which is used as a guideline for literature review and therefore has a great influence on what literature is found and presented. Had a different model or approach been used, it is possible other literature and findings would have come to light. Even though the researchers strived to document the methodology and process as clearly as possible, it is difficult to cover all considerations and choices with qualitative research.

9.3 Contribution to Research

This thesis has resulted in a general framework which illustrates the market challenges healthtech companies face on the UK market, and how companies can respond and take action to overcome or reduce the impact of these challenges. The identified challenges both strengthen challenges identified through previous research as well as add to them. The answers to RQ1 and RQ2 can be utilized by

other companies than Zymego for guidance in entering the UK healthcare marketspace.

9.4 Suggestions for Further Research

This thesis has focused on the perspective of companies looking to enter the UK market, the challenges they encounter and what strategies they can use. Further research could be made from the perspective of other stakeholders, such as the NHS. The NHS strives to increase its use of digital technology and new innovations to provide even more efficient and patient-safe care. However, today's work to promote the adoption of innovations and digital solutions is partly prevented by structural and organizational barriers. Further research could be conducted around what causes these barriers or how the NHS can make the procurement process clearer.

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Appendix A Interviews

A.1 Interview guide, Case Companies

Introduction

Introduction of the thesis, the authors, Zymego and its purpose. Questions on anonymity and permission to record the interview.

General Questions

- Could you start by telling us a little bit about [company]?
    - When and where was it founded? 2007
    - What is/are the product(s)?
    - How many employees?

- Tell us about yourself and your role at [company]

Background

- When did you start to attempt to enter the UK market?
    - How many years after founding the company?
    - How big/mature was the company at that point?
    - Why the UK market?

- Are you active on the market now?
    - To what extent?
    - Number of employees in UK?

Approach

- Describe the first steps towards selling your product in the UK
    - Employees involved
    - Pre-existing contacts

- Who/which organizations did you work with?
    - Organizations, chamber of commerce, innovation hubs etc.
    - Any partnerships?

- Which organizations within the NHS have you worked with?
    - Did you work with any innovation hubs or other initiatives to promote innovation/digitization in UK healthcare?

- Where in the NHS value chain did you enter?
    - Top-down strategy or targeting specific trusts/regions?
    - Why did you decide that was the best approach?
    - Public procurement necessary?

- Tell us shortly about the first customer
    - Geographic location?
    - Innovative?
    - EHR system?

- Did you target any specific customers?
    - Regional location?
    - Networks?
    - Certain EMR system?
    - Digital Maturity?
    - Open to innovation?
    - Open to third party actors/international companies?

- What certifications/quality controls did you apply for to sell to the NHS?
    - Were they obligatory or voluntary?
    - If voluntary - did they provide any value for you?

- How long did it take before you first "launched" the product on the market from the first action made?

- Did you have to adapt the product in any way for it to work in the UK?
    - Integrations to EMR?
    - Patient identification?

A.2 Interviewed Experts

Derek Kelly

Innovation Programme Manager, University Hospitals Dorset NHS Foundation Trust & Dorset County Hospital NHS Foundation Trust

Kelly was originally a clinical microbiologist and have worked within the NHS for a long time. He has also spent some time in the private sector of the healthcare industry. He has worked mostly in overseas markets, doing consultancy work for smaller companies looking to enter the UK marketspace, rather than the NHS but is now working with the NHS and their innovation work. Today, he acts as the innovation lead for three trusts in Dorset. In this role, Kelly provides innovation support services to other NHS organizations around the country, in what he calls inventive innovation and adoptive innovation. Concretely, he helps individuals in the NHS who have good ideas for new products or services to develop those ideas and turn them into reality. The adoptive innovation side of the work has to do with helping to adapt and adopt new innovations that are already coming onto the market, or had been available for some time, and bringing those into the local NHS.

The interview was held on the 22nd of March 2022.

Caroline Mellstig Theimer

Managing Director, Zenicor UK
Ex-Business Sweden Project Manager UK Branch

Mellstig Theimer has worked with life-science corporations 15 years. She started within Swecare foundation and later moved on to the London branch of Business Sweden's, where she worked in life-science and healthtech sector. Business Sweden works with helping Swedish companies understand and enter the marketspace. After five years at Business Sweden, she moved on to Zenicore. Starting off in the role as Business Development Manager, including responsibilities as their UK operations, she became the Managing Director of Zenicor UK as of last year.

The interview was carried out on the 24th of March 2022.

Guy Boersma

Strategy Development Director
Kent Surrey Sussex Academic Health Science Network

Boersma has decades of experience from the NHS, both as an employee and consultant. He has also done some consultancy for private organizations providing services to NHS patients. During his career, his engagements have been on several levels, locally, regionally, and nationally, and he has worked inside the statutory

bodies, meaning inside a hospital and inside a budget holding municipality. Today, he works in one of the 15 AHSNs, which work for stronger collaboration between industry innovators, university researchers, as well as NHS care providers, and staff. The AHSN helps its members overcome challenges they are facing by turning to the industry and academia for possible solutions. If helpful innovations are found, they will test and help implement them as well.

Boersma was interviewed on the 7th of April 2022.

Harry Harrison

Regional Partnership Lead (North of England) NHSBSA
Strategy, Performance, Business Development & Growth

Harrison has many years of experience from both working in a NHS foundation trust, as well as from North Cumbria CCG. Today, he is the Regional Partnership Lead within the NHS Business Services Authority (NHSBSA), an extension of the Department of Health and Social Care. It is a wide range of services that NHSBSA delivers, and they are not limited to NHS organizations, but are also provided to the public, patients, and contractors. Additionally, NHSBSA works with population health management, such as health inequalities, where they either try to maintain or improve standard of living by promoting the benefits and services offered to the public.

The interview was held on the 12th of April 2022.

Appendix B Organizations Working with Innovation

Accelerate Access Collaborative

Accelerate Access Collaborative (AAC) strives for the NHS to take the worldwide lead in innovation. It is a partnership with important stakeholders, such as NHS and governing bodies, patient groups and businesses, ambitioning to make the adoption of new healthcare innovation more effective. Hence, all important functions within health services are represented, accelerating acquisition of innovations. Healthcare innovations supported by the ACC covers a wide range of products and services, everything from medical devices to software (NICE n.d.b).

Academic Health Science Networks

There are 15 Academic Health Science Networks (AHSNs) in England which were established in 2013 by NHS England. The purpose of the AHSNs is to spread health innovations at pace and scale and to facilitate change across the healthcare system. The 15 networks work in different geographic areas. The AHSNs connect the NHS to academic and local organizations as well as industry (The AHSN Network n.d.)

HealthTech Connect

Healthtech Connect is a database of digital devices, diagnostic and other digital health technologies that can be used in the NHS or other parts of the UK health and care system. The database is funded by NHS England and run by NICE. The purpose of Healthtech connect is to promote connections between innovators and the right people and organizations to help getting technologies developed, evaluated, and adopted more quickly. Innovators can submit their innovations/technologies to a database which is then accessible to several organizations, such as the AHSNs and DIT (Department of International Trade), which can choose to support and develop those technologies further (Healthtech Connect n.d.).

NHS Innovation Accelerator

The NHS Innovation Accelerator (NIA) is an NHS England and NHS Improvement initiative launched in 2015. It assists delivery of the NHS Long Term Plan priorities through accelerating the spread of innovations within the NHS. The NIA is delivered in partnership with the AHSNs (NHS Innovation Accelerator n.d. a). The NIA works much like a start-up accelerator and focuses both on developing individuals as well as spreading their innovations. Innovations supported by the NIA can be of any type as long as they are already in use in at least one location and have shown positive impact (NHS Innovation Accelerator n.d.b)

NHSX

NHSX have for three years been leading the digital transformation within the NHS by partnering up with other NHS bodies, such as NHS Digital, but are now being integrated with the NHS Transformation Directorate. The NHSX works with raising the level of digital maturity across the NHS as well as assisting companies and innovators establishing their technology in British healthcare (Gould 2022).

NHS Digital

NHS Digital is the technology delivery partner for healthcare in England. They provide healthcare services with data and information as well as operate the IT systems used (NHS Digital n.d. a). They work with many different suppliers of technology to provide the necessary systems and tools to the NHS (NHS Digital n.d.b). Among other things, they are responsible for the NHS App. The NHS App is currently used for limited digital primary care and can be used to book some GP appointments. However, the long-term strategy is that the NHS app should become a platform for digital health and tools for the wider NHS (NHS Digital n.d.c). NHS digital reports directly to the Department of Health but work closely with the NHS and other parts of the healthcare system (NHS Digital n.d. a). In November 2021, it was announced that the recommendation of merging the NHS Digital into NHS England and NHS Improvement had been approved (GOV.UK 2021).

Appendix C Compilation of Challenges

Compilation of Table 4.1 (blue), 5.1 (green) and 6.1(red).

• Complex system with many different actors • Many different routes to market • No centralized decision-making • Trusts, CCGs, and other organizations can be organized differently across the country • Primary care is difficult to sell to because of the large number of individual GPs • The NHS is not one customer - no central responsibility for purchasing new technology • Care providers make their own decisions on what technology to implement • System and decision-making fragmented • One or a few sales will not lead to widespread adoption • No critical turning point where sales become significantly easier
• Understanding the NHS is difficult and time consuming • Unofficial structures make the system difficult to navigate • Unspoken requirements and expectations from customers • Identifying the right people is difficult • Responsibilities may not be defined for new technology • Information and contact information often inaccessible • Lack of market knowledge major challenge • Regions may be organized differently across the country - low transferability of knowledge • Not always clear where mandates lie • Some crucial information only accessible through talking with people • Constant re-organizing within the NHS further exacerbates the issue of understanding the system
• Varying, and generally low, level of digital maturity • Lack of financial incentives for investing in technology • Digital maturity varies, both geographically, and across different types of care • Varying levels of digital maturity • Generally low level of digitization and digital maturity • No financial incentives for GPs to implement new technology
• Different EHR systems across the NHS, which do not communicate • No central system for secure digital identification • Some care providers, especially primary care, still paper based to some extent • Old legacy systems do not speak with each other

• High standards and requirements for new technology • Customers have high standards and requirements • Public sector subject to more regulations compared to private actors
• Risk-averse market - procuring services from smaller, foreign companies associated with higher risk • Structures in public organizations and public procurement not supportive of taking risks • Often necessary to have evidence from the UK • Some resistance towards non-UK companies • Care providers want evidence of their own and does not necessarily trust evidence/results from other customers - even if it is from a nearby hospital in the UK
• Strained financial situation within the NHS • Lack of financing in the NHS • History of poor financial situation within the NHS
• Many companies claiming to solve the same issues • The market is crowded - difficult to stand out • Global market with competition from the USA and Asia • High competition in public procurement processes, especially challenging for smaller companies • Very crowded marketspace • Swedish companies tend to be naive about the competitiveness on the market